

Appendix E1.2

Operational Emission Calculations

Table of Contents – Appendix E1.2 Operational Emission Calculations

Tables

Table E1.2-1. Annual Berth 97-109 TEU Throughput for CEQA Baseline	
Table E1.2-2. Annual Berth 97-109 TEU Throughput by Project Alternative	
Table E1.2-3. Ship Loading and Unloading Rates	
Table E1.2-4. Ship Visit Data - Berths 97-109 Terminal	
Table E1.2-5. Peak Day Ship Loading and Unloading Rates	
Table E1.2-6. Peak Daily Ship Activity	
Table E1.2-7. Peak Daily Truck and Auto Trips	
Table E1.2-8. Peak Daily-to-Annual Conversion Factors for Truck and Auto Trips	
Table E1.2-9. Annual Truck and Auto Trips	
Table E1.2-10. Truck Trip Distances	
Table E1.2-11. Cargo Ground Transport Modes for the Berth 97-109 Terminal	
Table E1.2-12. Train Capacity for the Berth 97-109 Terminal Project	
Table E1.2-13. Train Trips Generated by the Berths 97-109 Terminal	
Table E1.2-14. Peak Day Train Trips Generated by the Berths 97-109 Terminal	
Table E1.2-15. Estimated Berths 97-109 CHE Usage Rates per TEU	
Table E1.2-16. Estimated Berths 97-109 CHE Usage - CEQA Baseline (2001)	
Table E1.2-17. Estimated Berths 97-109 Terminal Equipment Usage - Project Alternatives	
Table E1.2-PP-1. Annual Ship Visit Data - Proposed Project	
Table E1.2-PP-2. Peak Day Ship Visit Data - Proposed Project	
Table E1.2-PP-3. OGV Main Engine Usage per One-Way Transit	
Table E1.2-PP-4. OGV Auxiliary Generator Usage per One-Way Transit	
Table E1.2-PP-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP) - Proposed Project	
Table E1.2-PP-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit - Proposed Project	
Table E1.2-PP-7. OGV Auxiliary Boiler Usage per One-Way Transit	
Table E1.2-PP-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit - Proposed Project	
Table E1.2-PP-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit - Proposed Project	
Table E1.2-PP-10. Tugboat Main Engine Usage during Assists	
Table E1.2-PP-11. Tugboat Auxiliary Generator Usage during Assists	
Table E1.2-PP-12. Emission Factors for Commercial Marine Vessels	
Table E1.2-PP-13. Emission Factors for AMP Electricity Consumption	
Table E1.2-PP-14. Fuel Correction Factors for Ship Main Engines, Auxiliary Engines, Boilers	
Table E1.2-PP-15. Fuel Correction Factors for Tugboat Main & Auxiliary Engines	
Table E1.2-PP-16. Low-Load EF Regression Factors for OGV Main Propulsion Engines	
Table E1.2-PP-17. Vessel Speed Reduction Program (VSRP), Historical Compliance Rates for China Shipping Line (Unmitigated)	
Table E1.2-PP-18. Annual Emissions from OGV Main Engine - Proposed Project Fairway: AQMD Overwater Boundary to 20-Mile	
Table E1.2-PP-19. Annual Emissions from OGV Main Engine - Proposed Project Fairway: 20-Mile to Precautionary Area	
Table E1.2-PP-20. Annual Emissions from OGV Main Engine - Proposed Project Precautionary Area	
Table E1.2-PP-21. Annual Emissions from OGV Main Engine - Proposed Project Harbor Transit - Inbound	
Table E1.2-PP-22. Annual Emissions from OGV Main Engine - Proposed Project Harbor Transit - Outbound	
Table E1.2-PP-23. Annual Emissions from OGV Main Engine - Proposed Project - Turning	
Table E1.2-PP-24. Annual Emissions from OGV Main Engine - Proposed Project - Docking	
Table E1.2-PP-25. Max Daily Emissions from OGV Main Engine - Proposed Project Fairway: AQMD Overwater Boundary to 20-Mile	
Table E1.2-PP-26. Max Daily Emissions from OGV Main Engine - Proposed Project Fairway: 20-Mile to Precautionary Area	
Table E1.2-PP-27. Max Daily Emissions from OGV Main Engine - Proposed Project Precautionary Area	

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-PP-28. Max Daily Emissions from OGV Main Engine - Proposed Project
Harbor Transit - Inbound

Table E1.2-PP-29. Max Daily Emissions from OGV Main Engine - Proposed Project
Harbor Transit - Outbound

Table E1.2-PP-30. Max Daily Emissions from OGV Main Engine - Proposed Project - Turning

Table E1.2-PP-31. Max Daily Emissions from OGV Main Engine - Proposed Project - Docking

Table E1.2-PP-32. Annual Emissions from OGV Auxiliary Engines - Proposed Project
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-33. Annual Emissions from OGV Auxiliary Engines - Proposed Project
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-34. Annual Emissions from OGV Auxiliary Engines - Proposed Project
Precautionary Area

Table E1.2-PP-35. Annual Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Inbound

Table E1.2-PP-36. Annual Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Outbound

Table E1.2-PP-37. Annual Emissions from OGV Auxiliary Engines - Proposed Project - Turning

Table E1.2-PP-38. Annual Emissions from OGV Auxiliary Engines - Proposed Project - Docking

Table E1.2-PP-39. Annual Emissions from OGV Auxiliary Engines - Proposed Project - Hoteling

Table E1.2-PP-40. Annual Emissions from OGV Auxiliary Engines - Proposed Project - Anchoring

Table E1.2-PP-41. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-42. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-43. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Precautionary Area

Table E1.2-PP-44. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Inbound

Table E1.2-PP-45. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Outbound

Table E1.2-PP-46. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project - Turning

Table E1.2-PP-47. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project - Docking

Table E1.2-PP-48. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project - Hoteling

Table E1.2-PP-49. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project - Anchoring

Table E1.2-PP-50. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-51. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-52. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Precautionary Area

Table E1.2-PP-53. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Inbound

Table E1.2-PP-54. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Outbound

Table E1.2-PP-55. Annual Emissions from OGV Auxiliary Boilers - Proposed Project - Turning

Table E1.2-PP-56. Annual Emissions from OGV Auxiliary Boilers - Proposed Project - Docking

Table E1.2-PP-57. Annual Emissions from OGV Auxiliary Boilers - Proposed Project - Hoteling

Table E1.2-PP-58. Annual Emissions from OGV Auxiliary Boilers - Proposed Project - Anchoring

Table E1.2-PP-59. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-60. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-61. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Precautionary Area

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-PP-62. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Inbound

Table E1.2-PP-63. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Outbound

Table E1.2-PP-64. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project - Turning

Table E1.2-PP-65. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project - Docking

Table E1.2-PP-66. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project - Hoteling

Table E1.2-PP-67a. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project - Anchoring

Table E1.2-PP-67b. LNG Truck Mitigation Rates - Mitigated Project

Table E1.2-PP-68. Annual Emissions from Tugboat Main Engine - Proposed Project

Table E1.2-PP-69. Max Daily Emissions from Tugboat Main Engine - Proposed Project

Table E1.2-PP-70. Annual Emissions from Tugboat Auxiliary Engines - Proposed Project

Table E1.2-PP-71. Max Daily Emissions from Tugboat Auxiliary Engines - Proposed Project

Table E1.2-PP-72. Summary of Annual Marine Vessel Emissions without Mitigation - Proposed Project

Table E1.2-PP-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation - Proposed Project

Table E1.2-PP-74. AMP Compliance Rates - Proposed Project with Mitigation

Table E1.2-PP-75. Vessel Speed Reduction Program (VSRP) Compliance Rates - Proposed Project with Mitigation

Table E1.2-PP-76. OGV Main Engine Slide Valve Compliance Rates - Proposed Project with Mitigation

Table E1.2-PP-77. Emission Reduction Factors for OGV Main Engine Slide Valves

Table E1.2-PP-78. OGV Main Engine Fuel Usage - Proposed Project with Mitigation

Table E1.2-PP-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit
Proposed Project with Mitigation

Table E1.2-PP-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling
Proposed Project with Mitigation

Table E1.2-PP-81. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-82. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-83. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Precautionary Area

Table E1.2-PP-84. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Inbound

Table E1.2-PP-85. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Outbound

Table E1.2-PP-86. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation - Turning

Table E1.2-PP-87. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation - Docking

Table E1.2-PP-88. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-89. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-90. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Precautionary Area

Table E1.2-PP-91. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Inbound

Table E1.2-PP-92. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Outbound

Table E1.2-PP-93. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation - Turning

Table E1.2-PP-94. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation - Docking

Table E1.2-PP-95. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-PP-96. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area

Table E1.2-PP-97. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Precautionary Area

Table E1.2-PP-98. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Harbor Transit - Inbound

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-PP-99. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Harbor Transit - Outbound
Table E1.2-PP-100. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Turning
Table E1.2-PP-101. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Docking
Table E1.2-PP-102. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Hoteling
Table E1.2-PP-103. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Anchoring
Table E1.2-PP-104. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-PP-105. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-PP-106. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Precautionary Area
Table E1.2-PP-107. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Harbor Transit - Inbound
Table E1.2-PP-108. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Harbor Transit - Outbound
Table E1.2-PP-109. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Turning
Table E1.2-PP-110. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Docking
Table E1.2-PP-111. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Hoteling
Table E1.2-PP-112. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation - Anchoring
Table E1.2-PP-113. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-PP-114. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-PP-115. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Precautionary Area
Table E1.2-PP-116. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Harbor Transit - Inbound
Table E1.2-PP-117. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Harbor Transit - Outbound
Table E1.2-PP-118. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Turning
Table E1.2-PP-119. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Docking
Table E1.2-PP-120. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Hoteling
Table E1.2-PP-121. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Anchoring
Table E1.2-PP-122. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-PP-123. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-PP-124. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Precautionary Area
Table E1.2-PP-125. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Harbor Transit - Inbound
Table E1.2-PP-126. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Harbor Transit - Outbound
Table E1.2-PP-127. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Turning
Table E1.2-PP-128. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Docking
Table E1.2-PP-129. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Hoteling
Table E1.2-PP-130. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation - Anchoring
Table E1.2-PP-131. Annual Emissions from Tugboat Main Engine - Proposed Project with Mitigation
Table E1.2-PP-132. Max Daily Emissions from Tugboat Main Engine - Proposed Project
Table E1.2-PP-133. Annual Emissions from Tugboat Auxiliary Engines - Proposed Project with Mitigation
Table E1.2-PP-134. Max Daily Emissions from Tugboat Auxiliary Engines - Proposed Project
Table E1.2-PP-135. Annual Emissions from AMP Electricity Consumption - Proposed Project with Mitigation
Table E1.2-PP-136. Max Daily Emissions from AMP Electricity Consumption - Proposed Project with Mitigation
Table E1.2-PP-137. Summary of Annual Marine Vessel Emissions with Mitigation - Proposed Project with Mitigation

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-PP-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation Proposed Project with Mitigation
Table E1.2-PP-143. Truck Trips and Mileage for the Berth 97-109 Terminal - Proposed Project
Table E1.2-PP-144. On-Road Truck Operational Data for the Berths 97-109 Terminal
Table E1.2-PP-145. On-Road Truck Emission Factors - POLA Truck Fleet Without Mitigation
Table E1.2-PP-146. On-Road Truck Emission Factors - Mitigated POLA Truck Fleet
Table E1.2-PP-147. Annual Truck Emissions for the Berths 97-109 Terminal - Proposed Project
Table E1.2-PP-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation
Table E1.2-PP-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation
Table E1.2-PP-150. Annual Truck Emissions for the Berths 97-109 Terminal Proposed Project with Mitigation
Table E1.2-PP-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation
Table E1.2-PP-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation
Table E1.2-PP-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Proposed Project
Table E1.2-PP-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Proposed Project
Table E1.2-PP-155. Train Trips Associated with the Proposed Project
Table E1.2-PP-156. Equipment Usage Associated with One Train Trip - Proposed Project
Table E1.2-PP-157. Emission Factors for ICTF Equipment without Mitigation
Table E1.2-PP-158. Emission Factors for Berth 121-131 ICTF Equipment with Mitigation
Table E1.2-PP-159. Emission Factors for Switch Yard Locomotives at B121-131 Railyard
Table E1.2-PP-160. Emission Factors for Switch Yard Locomotives at Off-Dock Railyards
Table E1.2-PP-161. Emission Factors for Line Haul Locomotives
Table E1.2-PP-162. Control Efficiencies for Locomotive Mitigation Measures
Table E1.2-PP-163. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2005
Table E1.2-PP-164. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2010
Table E1.2-PP-165. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2015
Table E1.2-PP-166. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2030
Table E1.2-PP-167. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2045
Table E1.2-PP-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2005
Table E1.2-PP-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2010
Table E1.2-PP-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2015
Table E1.2-PP-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2030
Table E1.2-PP-172. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project - Year 2045
Table E1.2-PP-173. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2005
Table E1.2-PP-174. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2010
Table E1.2-PP-175. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2015

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-PP-176. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2030
Table E1.2-PP-177. Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2045
Table E1.2-PP-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2005
Table E1.2-PP-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2010
Table E1.2-PP-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2015
Table E1.2-PP-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2030
Table E1.2-PP-182. Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation - Year 2045
Table E1.2-PP-183. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project
Table E1.2-PP-184. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions Proposed Project
Table E1.2-PP-185. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation
Table E1.2-PP-186. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions Proposed Project with Mitigation
Table E1.2-PP-187. Annual Terminal Equipment Emissions Without Mitigation - Proposed Project
Table E1.2-PP-188. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Proposed Project
Table E1.2-PP-189. Peak Daily Terminal Equipment Emissions Without Mitigation - Proposed Project
Table E1.2-PP-190. Annual Terminal Equipment Emissions With Mitigation - Proposed Project
Table E1.2-PP-191. Peak Daily Terminal Equipment Emissions With Mitigation - Proposed Project
Table E1.2-PP-192. Emissions from RTG Electricity Consumption - Mitigated Project
Table E1.2-PP-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation
Table E1.2-PP-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation
Table E1.2-PP-195. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation
Table E1.2-PP-196. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation
Table E1.2-PP-197. Peak Daily Operational Emissions Without Mitigation - Proposed Project
Table E1.2-PP-198. Average Daily Operational Emissions Without Mitigation - Proposed Project
Table E1.2-PP-199. Peak Daily Operational Emissions With Mitigation - Proposed Project
Table E1.2-PP-200. Average Daily Operational Emissions With Mitigation - Proposed Project
Table E1.2-BL-186. Annual Terminal Equipment Emissions Without Mitigation - CEQA Baseline
Table E1.2-BL-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - CEQA Baseline
Table E1.2-BL-188. Peak Daily Terminal Equipment Emissions - CEQA Baseline
Table E1.2-BL-191. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - CEQA Baseline
Table E1.2-BL-192. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - CEQA Baseline
Table E1.2-BL-195. Baseline (2001) Peak Daily Operational Emissions (CEQA Baseline) Berths 97-109 Terminal
Table E1.2-BL-196. Baseline (2001) Average Daily Operational Emissions (CEQA Baseline) Berths 97-109 Terminal
Table E1.2-Alt1-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 1
Table E1.2-Alt1-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 1
Table E1.2-Alt1-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 1
Table E1.2-Alt1-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 1 with Mitigation
Table E1.2-Alt1-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 1 with Mitigation

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt1-197. Peak Daily Operational Emissions With Mitigation - Alternative 1

Table E1.2-Alt1-198. Average Daily Operational Emissions With Mitigation - Alternative 1

Table E1.2-Alt2-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 2

Table E1.2-Alt2-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 2

Table E1.2-Alt2-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 2

Table E1.2-Alt2-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 2 with Mitigation

Table E1.2-Alt2-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 2 with Mitigation

Table E1.2-Alt2-197. Peak Daily Operational Emissions With Mitigation - Alternative 2

Table E1.2-Alt2-198. Average Daily Operational Emissions With Mitigation - Alternative 2

Table E1.2-Alt3-1. Annual Ship Visit Data - Alternative 3

Table E1.2-Alt3-2. Peak Day Ship Visit Data - Alternative 3

Table E1.2-Alt3-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP) - Alternative 3

Table E1.2-Alt3-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit - Alternative 3

Table E1.2-Alt3-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit - Alternative 3

Table E1.2-Alt3-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit - Alternative 3

Table E1.2-Alt3-18. Annual Emissions from OGV Main Engine - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt3-19. Annual Emissions from OGV Main Engine - Alternative 3

Fairway: 20-Mile to Precautionary Area

Table E1.2-Alt3-20. Annual Emissions from OGV Main Engine - Alternative 3 - Precautionary Area

Table E1.2-Alt3-21. Annual Emissions from OGV Main Engine - Alternative 3

Harbor Transit - Inbound

Table E1.2-Alt3-22. Annual Emissions from OGV Main Engine - Alternative 3

Harbor Transit - Outbound

Table E1.2-Alt3-23. Annual Emissions from OGV Main Engine - Alternative 3 - Turning

Table E1.2-Alt3-24. Annual Emissions from OGV Main Engine - Alternative 3 - Docking

Table E1.2-Alt3-25. Max Daily Emissions from OGV Main Engine - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt3-26. Max Daily Emissions from OGV Main Engine - Alternative 3

Fairway: 20-Mile to Precautionary Area

Table E1.2-Alt3-27. Max Daily Emissions from OGV Main Engine - Alternative 3 - Precautionary Area

Table E1.2-Alt3-28. Max Daily Emissions from OGV Main Engine - Alternative 3

Harbor Transit - Inbound

Table E1.2-Alt3-29. Max Daily Emissions from OGV Main Engine - Alternative 3

Harbor Transit - Outbound

Table E1.2-Alt3-30. Max Daily Emissions from OGV Main Engine - Alternative 3 - Turning

Table E1.2-Alt3-31. Max Daily Emissions from OGV Main Engine - Alternative 3 - Docking

Table E1.2-Alt3-32. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt3-33. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: 20-Mile to Precautionary Area

Table E1.2-Alt3-34. Annual Emissions from OGV Auxiliary Engines - Alternative 3 - Precautionary Area

Table E1.2-Alt3-35. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Harbor Transit - Inbound

Table E1.2-Alt3-36. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Harbor Transit - Outbound

Table E1.2-Alt3-37. Annual Emissions from OGV Auxiliary Engines - Alternative 3 - Turning

Table E1.2-Alt3-38. Annual Emissions from OGV Auxiliary Engines - Alternative 3 - Docking

Table E1.2-Alt3-39. Annual Emissions from OGV Auxiliary Engines - Alternative 3 - Hoteling

Table E1.2-Alt3-40. Annual Emissions from OGV Auxiliary Engines - Alternative 3 - Anchoring

Table E1.2-Alt3-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt3-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: 20-Mile to Precautionary Area

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt3-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 - Precautionary Area
Table E1.2-Alt3-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 Harbor Transit - Inbound
Table E1.2-Alt3-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 Harbor Transit - Outbound
Table E1.2-Alt3-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 - Turning
Table E1.2-Alt3-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 - Docking
Table E1.2-Alt3-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 - Hoteling
Table E1.2-Alt3-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 - Anchoring
Table E1.2-Alt3-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 - Precautionary Area
Table E1.2-Alt3-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 Harbor Transit - Inbound
Table E1.2-Alt3-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 Harbor Transit - Outbound
Table E1.2-Alt3-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 - Turning
Table E1.2-Alt3-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 - Docking
Table E1.2-Alt3-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 - Hoteling
Table E1.2-Alt3-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 - Anchoring
Table E1.2-Alt3-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 - Precautionary Area
Table E1.2-Alt3-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 Harbor Transit - Inbound
Table E1.2-Alt3-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 Harbor Transit - Outbound
Table E1.2-Alt3-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 - Turning
Table E1.2-Alt3-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 - Docking
Table E1.2-Alt3-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 - Hoteling
Table E1.2-Alt3-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 - Anchoring
Table E1.2-Alt3-67b. LNG Truck Mitigation Rates - Mitigated Project
Table E1.2-Alt3-68. Annual Emissions from Tugboat Main Engine - Alternative 3
Table E1.2-Alt3-69. Max Daily Emissions from Tugboat Main Engine - Alternative 3
Table E1.2-Alt3-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 3
Table E1.2-Alt3-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 3
Table E1.2-Alt3-72. Summary of Annual Marine Vessel Emissions without Mitigation Alternative 3
Table E1.2-Alt3-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation Alternative 3
Table E1.2-Alt3-74. AMP Compliance Rates - Alternative 3 with Mitigation
Table E1.2-Alt3-75. Vessel Speed Reduction Program (VSRP) Compliance Rates Alternative 3 with Mitigation
Table E1.2-Alt3-76. OGV Main Engine Slide Valve Compliance Rates Alternative 3 with Mitigation
Table E1.2-Alt3-78. OGV Main Engine Fuel Usage - Alternative 3 with Mitigation
Table E1.2-Alt3-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit Alternative 3 with Mitigation
Table E1.2-Alt3-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling - Alternative 3 with Mitigation
Table E1.2-Alt3-81. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt3-82. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-83. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Precautionary Area
Table E1.2-Alt3-84. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt3-85. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt3-86. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Turning
Table E1.2-Alt3-87. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation Docking
Table E1.2-Alt3-88. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-89. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-90. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Precautionary Area
Table E1.2-Alt3-91. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt3-92. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt3-93. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Turning
Table E1.2-Alt3-94. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation Docking
Table E1.2-Alt3-95. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-96. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-97. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Precautionary Area
Table E1.2-Alt3-98. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt3-99. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt3-100. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Turning
Table E1.2-Alt3-101. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Docking
Table E1.2-Alt3-102. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Hoteling
Table E1.2-Alt3-103. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Anchoring
Table E1.2-Alt3-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Precautionary Area
Table E1.2-Alt3-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt3-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Harbor Transit - Outbound

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt3-109.	Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Turning
Table E1.2-Alt3-110.	Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Docking
Table E1.2-Alt3-111.	Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Hoteling
Table E1.2-Alt3-112.	Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Anchoring
Table E1.2-Alt3-113.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-114.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-115.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Precautionary Area
Table E1.2-Alt3-116.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt3-117.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt3-118.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Turning
Table E1.2-Alt3-119.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Docking
Table E1.2-Alt3-120.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Hoteling
Table E1.2-Alt3-121.	Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Anchoring
Table E1.2-Alt3-122.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt3-123.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt3-124.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Precautionary Area
Table E1.2-Alt3-125.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt3-126.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt3-127.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Turning
Table E1.2-Alt3-128.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Docking
Table E1.2-Alt3-129.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Hoteling
Table E1.2-Alt3-130.	Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Anchoring
Table E1.2-Alt3-131.	Annual Emissions from Tugboat Main Engine - Alternative 3 with Mitigation
Table E1.2-Alt3-132.	Max Daily Emissions from Tugboat Main Engine - Alternative 3
Table E1.2-Alt3-133.	Annual Emissions from Tugboat Auxiliary Engines - Alternative 3 with Mitigation
Table E1.2-Alt3-134.	Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 3
Table E1.2-Alt3-135.	Annual Emissions from AMP Electricity Consumption - Alternative 3 with Mitigation
Table E1.2-Alt3-136.	Max Daily Emissions from AMP Electricity Consumption - Alternative 3 with Mitigation
Table E1.2-Alt3-137.	Summary of Annual Marine Vessel Emissions with Mitigation Alternative 3 with Mitigation
Table E1.2-Alt3-138.	Summary of Maximum Daily Marine Vessel Emissions with Mitigation Alternative 3 with Mitigation
Table E1.2-Alt3-143.	Truck Trips and Mileage for the Berth 97-109 Terminal - Alternative 3

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt3-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Alternative 3
Table E1.2-Alt3-147. Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 3
Table E1.2-Alt3-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation
Table E1.2-Alt3-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation
Table E1.2-Alt3-150. Annual Truck Emissions for the Berths 97-109 Terminal Alternative 3 with Mitigation
Table E1.2-Alt3-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation
Table E1.2-Alt3-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation
Table E1.2-Alt3-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 3
Table E1.2-Alt3-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 3
Table E1.2-Alt3-155. Train Trips Associated with the Alternative 3
Table E1.2-Alt3-162. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2005
Table E1.2-Alt3-163. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2010
Table E1.2-Alt3-164. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2015
Table E1.2-Alt3-165. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2030
Table E1.2-Alt3-166. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2045
Table E1.2-Alt3-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2005
Table E1.2-Alt3-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2010
Table E1.2-Alt3-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2015
Table E1.2-Alt3-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2030
Table E1.2-Alt3-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 - Year 2045
Table E1.2-Alt3-172. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2005
Table E1.2-Alt3-173. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2010
Table E1.2-Alt3-174. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2015
Table E1.2-Alt3-175. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2030
Table E1.2-Alt3-176. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2045
Table E1.2-Alt3-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2005
Table E1.2-Alt3-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2010
Table E1.2-Alt3-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2015

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt3-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2030
Table E1.2-Alt3-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation - Year 2045
Table E1.2-Alt3-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3
Table E1.2-Alt3-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 3
Table E1.2-Alt3-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation
Table E1.2-Alt3-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions Alternative 3 with Mitigation
Table E1.2-Alt3-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 3
Table E1.2-Alt3-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 3
Table E1.2-Alt3-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 3
Table E1.2-Alt3-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 3
Table E1.2-Alt3-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 3
Table E1.2-Alt3-191. Emissions from RTG Electricity Consumption - Mitigated Alternative 3
Table E1.2-Alt3-192. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation
Table E1.2-Alt3-193. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation
Table E1.2-Alt3-194. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation
Table E1.2-Alt3-195. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation
Table E1.2-Alt3-196. Peak Daily Operational Emissions Without Mitigation - Alternative 3
Table E1.2-Alt3-197. Average Daily Operational Emissions Without Mitigation - Alternative 3
Table E1.2-Alt3-198. Peak Daily Operational Emissions With Mitigation - Alternative 3
Table E1.2-Alt3-199. Average Daily Operational Emissions With Mitigation - Alternative 3
Table E1.2-Alt4-1. Annual Ship Visit Data - Alternative 4
Table E1.2-Alt4-2. Peak Day Ship Visit Data - Alternative 4
Table E1.2-Alt4-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP) Alternative 4
Table E1.2-Alt4-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit - Alternative 4
Table E1.2-Alt4-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit - Alternative 4
Table E1.2-Alt4-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit - Alternative 4
Table E1.2-Alt4-18. Annual Emissions from OGV Main Engine - Alternative 4 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-19. Annual Emissions from OGV Main Engine - Alternative 4 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-20. Annual Emissions from OGV Main Engine - Alternative 4 Precautionary Area
Table E1.2-Alt4-21. Annual Emissions from OGV Main Engine - Alternative 4 Harbor Transit - Inbound
Table E1.2-Alt4-22. Annual Emissions from OGV Main Engine - Alternative 4 Harbor Transit - Outbound
Table E1.2-Alt4-23. Annual Emissions from OGV Main Engine - Alternative 4 - Turning
Table E1.2-Alt4-24. Annual Emissions from OGV Main Engine - Alternative 4 - Docking
Table E1.2-Alt4-25. Max Daily Emissions from OGV Main Engine - Alternative 4 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-26. Max Daily Emissions from OGV Main Engine - Alternative 4 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-27. Max Daily Emissions from OGV Main Engine - Alternative 4 Precautionary Area

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt4-28. Max Daily Emissions from OGV Main Engine - Alternative 4 Harbor Transit - Inbound
Table E1.2-Alt4-29. Max Daily Emissions from OGV Main Engine - Alternative 4 Harbor Transit - Outbound
Table E1.2-Alt4-30. Max Daily Emissions from OGV Main Engine - Alternative 4 - Turning
Table E1.2-Alt4-31. Max Daily Emissions from OGV Main Engine - Alternative 4 - Docking
Table E1.2-Alt4-32. Annual Emissions from OGV Auxiliary Engines - Alternative 4 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-33. Annual Emissions from OGV Auxiliary Engines - Alternative 4 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-34. Annual Emissions from OGV Auxiliary Engines - Alternative 4 Precautionary Area
Table E1.2-Alt4-35. Annual Emissions from OGV Auxiliary Engines - Alternative 4 Harbor Transit - Inbound
Table E1.2-Alt4-36. Annual Emissions from OGV Auxiliary Engines - Alternative 4 Harbor Transit - Outbound
Table E1.2-Alt4-37. Annual Emissions from OGV Auxiliary Engines - Alternative 4 - Turning
Table E1.2-Alt4-38. Annual Emissions from OGV Auxiliary Engines - Alternative 4 - Docking
Table E1.2-Alt4-39. Annual Emissions from OGV Auxiliary Engines - Alternative 4 - Hoteling
Table E1.2-Alt4-40. Annual Emissions from OGV Auxiliary Engines - Alternative 4 - Anchoring
Table E1.2-Alt4-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 Precautionary Area
Table E1.2-Alt4-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 Harbor Transit - Inbound
Table E1.2-Alt4-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 Harbor Transit - Outbound
Table E1.2-Alt4-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 - Turning
Table E1.2-Alt4-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 - Docking
Table E1.2-Alt4-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 - Hoteling
Table E1.2-Alt4-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 - Anchoring
Table E1.2-Alt4-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 Precautionary Area
Table E1.2-Alt4-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 Harbor Transit - Inbound
Table E1.2-Alt4-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 Harbor Transit - Outbound
Table E1.2-Alt4-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 - Turning
Table E1.2-Alt4-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 - Docking
Table E1.2-Alt4-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 - Hoteling
Table E1.2-Alt4-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 - Anchoring
Table E1.2-Alt4-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 Precautionary Area

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt4-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 Harbor Transit - Inbound
Table E1.2-Alt4-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 Harbor Transit - Outbound
Table E1.2-Alt4-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 - Turning
Table E1.2-Alt4-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 - Docking
Table E1.2-Alt4-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 - Hoteling
Table E1.2-Alt4-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 - Anchoring
Table E1.2-Alt4-67b. LNG Truck Mitigation Rates - Mitigated Project
Table E1.2-Alt4-68. Annual Emissions from Tugboat Main Engine - Alternative 4
Table E1.2-Alt4-69. Max Daily Emissions from Tugboat Main Engine - Alternative 4
Table E1.2-Alt4-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 4
Table E1.2-Alt4-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 4
Table E1.2-Alt4-72. Summary of Annual Marine Vessel Emissions without Mitigation - Alternative 4
Table E1.2-Alt4-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation Alternative 4
Table E1.2-Alt4-74. AMP Compliance Rates - Alternative 4 with Mitigation
Table E1.2-Alt4-75. Vessel Speed Reduction Program (VSRP) Compliance Rates Alternative 4 with Mitigation
Table E1.2-Alt4-76. OGV Main Engine Slide Valve Compliance Rates - Alternative 4 with Mitigation
Table E1.2-Alt4-78. OGV Main Engine Fuel Usage - Alternative 4 with Mitigation
Table E1.2-Alt4-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit Alternative 4 with Mitigation
Table E1.2-Alt4-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling - Alternative 4 with Mitigation
Table E1.2-Alt4-81. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-82. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-83. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation Precautionary Area
Table E1.2-Alt4-84. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt4-85. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt4-86. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation - Turning
Table E1.2-Alt4-87. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation - Docking
Table E1.2-Alt4-88. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-89. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-90. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation Precautionary Area
Table E1.2-Alt4-91. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt4-92. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt4-93. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation - Turning
Table E1.2-Alt4-94. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation - Docking
Table E1.2-Alt4-95. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-96. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-97. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Precautionary Area

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt4-98. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt4-99. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt4-100. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Turning
Table E1.2-Alt4-101. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Docking
Table E1.2-Alt4-102. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Hoteling
Table E1.2-Alt4-103. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Anchoring
Table E1.2-Alt4-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Precautionary Area
Table E1.2-Alt4-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt4-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt4-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Turning
Table E1.2-Alt4-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Docking
Table E1.2-Alt4-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Hoteling
Table E1.2-Alt4-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation - Anchoring
Table E1.2-Alt4-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Precautionary Area
Table E1.2-Alt4-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt4-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt4-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Turning
Table E1.2-Alt4-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Docking
Table E1.2-Alt4-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Hoteling
Table E1.2-Alt4-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Anchoring
Table E1.2-Alt4-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt4-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt4-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Precautionary Area
Table E1.2-Alt4-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt4-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt4-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Turning
Table E1.2-Alt4-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Docking
Table E1.2-Alt4-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Hoteling
Table E1.2-Alt4-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation - Anchoring
Table E1.2-Alt4-131. Annual Emissions from Tugboat Main Engine - Alternative 4 with Mitigation
Table E1.2-Alt4-132. Max Daily Emissions from Tugboat Main Engine - Alternative 4
Table E1.2-Alt4-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 4 with Mitigation
Table E1.2-Alt4-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 4
Table E1.2-Alt4-135. Annual Emissions from AMP Electricity Consumption - Alternative 4 with Mitigation
Table E1.2-Alt4-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 4 with Mitigation

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt4-137. Summary of Annual Marine Vessel Emissions with Mitigation Alternative 4 with Mitigation
Table E1.2-Alt4-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation Alternative 4 with Mitigation
Table E1.2-Alt4-143. Truck Trips and Mileage for the Berth 97-109 Terminal - Alternative 4
Table E1.2-Alt4-144. On-Road Truck Operational Data for the Berths 97-109 Terminal - Alternative 4
Table E1.2-Alt4-147. Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 4
Table E1.2-Alt4-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation
Table E1.2-Alt4-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation
Table E1.2-Alt4-150. Annual Truck Emissions for the Berths 97-109 Terminal Alternative 4 with Mitigation
Table E1.2-Alt4-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation
Table E1.2-Alt4-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation
Table E1.2-Alt4-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 4
Table E1.2-Alt4-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 4
Table E1.2-Alt4-155. Train Trips Associated with the Alternative 4
Table E1.2-Alt4-162. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2005
Table E1.2-Alt4-163. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2010
Table E1.2-Alt4-164. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2015
Table E1.2-Alt4-165. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2030
Table E1.2-Alt4-166. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2045
Table E1.2-Alt4-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2005
Table E1.2-Alt4-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2010
Table E1.2-Alt4-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2015
Table E1.2-Alt4-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2030
Table E1.2-Alt4-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 - Year 2045
Table E1.2-Alt4-172. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2005
Table E1.2-Alt4-173. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2010
Table E1.2-Alt4-174. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2015
Table E1.2-Alt4-175. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2030
Table E1.2-Alt4-176. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2045
Table E1.2-Alt4-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2005

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt4-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2010
Table E1.2-Alt4-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2015
Table E1.2-Alt4-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2030
Table E1.2-Alt4-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation - Year 2045
Table E1.2-Alt4-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4
Table E1.2-Alt4-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 4
Table E1.2-Alt4-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation
Table E1.2-Alt4-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions Alternative 4 with Mitigation
Table E1.2-Alt4-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 4
Table E1.2-Alt4-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 4
Table E1.2-Alt4-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 4
Table E1.2-Alt4-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 4
Table E1.2-Alt4-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 4
Table E1.2-Alt4-191. Emissions from RTG Electricity Consumption - Mitigated Alternative 4
Table E1.2-Alt4-192. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation
Table E1.2-Alt4-193. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation
Table E1.2-Alt4-194. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation
Table E1.2-Alt4-195. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation
Table E1.2-Alt4-196. Peak Daily Operational Emissions Without Mitigation - Alternative 4
Table E1.2-Alt4-197. Average Daily Operational Emissions Without Mitigation - Alternative 4
Table E1.2-Alt4-198. Peak Daily Operational Emissions With Mitigation - Alternative 4
Table E1.2-Alt4-199. Average Daily Operational Emissions With Mitigation - Alternative 4
Table E1.2-Alt5-1. Annual Ship Visit Data - Alternative 5
Table E1.2-Alt5-2. Peak Day Ship Visit Data - Alternative 5
Table E1.2-Alt5-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP) Alternative 5
Table E1.2-Alt5-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit Alternative 5
Table E1.2-Alt5-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit Alternative 5
Table E1.2-Alt5-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit Alternative 5
Table E1.2-Alt5-18. Annual Emissions from OGV Main Engine - Alternative 5 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-19. Annual Emissions from OGV Main Engine - Alternative 5 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-20. Annual Emissions from OGV Main Engine - Alternative 5 Precautionary Area
Table E1.2-Alt5-21. Annual Emissions from OGV Main Engine - Alternative 5 Harbor Transit - Inbound
Table E1.2-Alt5-22. Annual Emissions from OGV Main Engine - Alternative 5 Harbor Transit - Outbound

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt5-23. Annual Emissions from OGV Main Engine - Alternative 5 - Turning
Table E1.2-Alt5-24. Annual Emissions from OGV Main Engine - Alternative 5 - Docking
Table E1.2-Alt5-25. Max Daily Emissions from OGV Main Engine - Alternative 5 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-26. Max Daily Emissions from OGV Main Engine - Alternative 5 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-27. Max Daily Emissions from OGV Main Engine - Alternative 5 Precautionary Area
Table E1.2-Alt5-28. Max Daily Emissions from OGV Main Engine - Alternative 5 Harbor Transit - Inbound
Table E1.2-Alt5-29. Max Daily Emissions from OGV Main Engine - Alternative 5 Harbor Transit - Outbound
Table E1.2-Alt5-30. Max Daily Emissions from OGV Main Engine - Alternative 5 - Turning
Table E1.2-Alt5-31. Max Daily Emissions from OGV Main Engine - Alternative 5 - Docking
Table E1.2-Alt5-32. Annual Emissions from OGV Auxiliary Engines - Alternative 5 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-33. Annual Emissions from OGV Auxiliary Engines - Alternative 5 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-34. Annual Emissions from OGV Auxiliary Engines - Alternative 5 Precautionary Area
Table E1.2-Alt5-35. Annual Emissions from OGV Auxiliary Engines - Alternative 5 Harbor Transit - Inbound
Table E1.2-Alt5-36. Annual Emissions from OGV Auxiliary Engines - Alternative 5 Harbor Transit - Outbound
Table E1.2-Alt5-37. Annual Emissions from OGV Auxiliary Engines - Alternative 5 - Turning
Table E1.2-Alt5-38. Annual Emissions from OGV Auxiliary Engines - Alternative 5 - Docking
Table E1.2-Alt5-39. Annual Emissions from OGV Auxiliary Engines - Alternative 5 - Hoteling
Table E1.2-Alt5-40. Annual Emissions from OGV Auxiliary Engines - Alternative 5 - Anchoring
Table E1.2-Alt5-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 Precautionary Area
Table E1.2-Alt5-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 Harbor Transit - Inbound
Table E1.2-Alt5-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 Harbor Transit - Outbound
Table E1.2-Alt5-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 - Turning
Table E1.2-Alt5-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 - Docking
Table E1.2-Alt5-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 - Hoteling
Table E1.2-Alt5-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 - Anchoring
Table E1.2-Alt5-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 Precautionary Area
Table E1.2-Alt5-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 Harbor Transit - Inbound
Table E1.2-Alt5-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 Harbor Transit - Outbound
Table E1.2-Alt5-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 - Turning
Table E1.2-Alt5-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 - Docking
Table E1.2-Alt5-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 - Hoteling

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt5-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 - Anchoring
Table E1.2-Alt5-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 Precautionary Area
Table E1.2-Alt5-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 Harbor Transit - Inbound
Table E1.2-Alt5-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 Harbor Transit - Outbound
Table E1.2-Alt5-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 - Turning
Table E1.2-Alt5-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 - Docking
Table E1.2-Alt5-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 - Hoteling
Table E1.2-Alt5-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 - Anchoring
Table E1.2-Alt5-67b. LNG Truck Mitigation Rates - Mitigated Project
Table E1.2-Alt5-68. Annual Emissions from Tugboat Main Engine - Alternative 5
Table E1.2-Alt5-69. Max Daily Emissions from Tugboat Main Engine - Alternative 5
Table E1.2-Alt5-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 5
Table E1.2-Alt5-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 5
Table E1.2-Alt5-72. Summary of Annual Marine Vessel Emissions without Mitigation Alternative 5
Table E1.2-Alt5-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation Alternative 5
Table E1.2-Alt5-74. AMP Compliance Rates - Alternative 5 with Mitigation
Table E1.2-Alt5-75. Vessel Speed Reduction Program (VSRP) Compliance Rates Alternative 5 with Mitigation
Table E1.2-Alt5-76. OGV Main Engine Slide Valve Compliance Rates Alternative 5 with Mitigation
Table E1.2-Alt5-78. OGV Main Engine Fuel Usage - Alternative 5 with Mitigation
Table E1.2-Alt5-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit Alternative 5 with Mitigation
Table E1.2-Alt5-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling - Alternative 5 with Mitigation
Table E1.2-Alt5-81. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-82. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-83. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation Precautionary Area
Table E1.2-Alt5-84. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt5-85. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt5-86. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation - Turning
Table E1.2-Alt5-87. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation - Docking
Table E1.2-Alt5-88. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-89. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-90. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation Precautionary Area
Table E1.2-Alt5-91. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation Harbor Transit - Inbound

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt5-92. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt5-93. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation - Turning
Table E1.2-Alt5-94. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation - Docking
Table E1.2-Alt5-95. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-96. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-97. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Precautionary Area
Table E1.2-Alt5-98. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt5-99. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt5-100. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Turning
Table E1.2-Alt5-101. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Docking
Table E1.2-Alt5-102. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Hoteling
Table E1.2-Alt5-103. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Anchoring
Table E1.2-Alt5-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Precautionary Area
Table E1.2-Alt5-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt5-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt5-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Turning
Table E1.2-Alt5-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Docking
Table E1.2-Alt5-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Hoteling
Table E1.2-Alt5-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Anchoring
Table E1.2-Alt5-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Precautionary Area
Table E1.2-Alt5-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt5-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt5-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Turning
Table E1.2-Alt5-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Docking

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt5-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Hoteling
Table E1.2-Alt5-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Anchoring
Table E1.2-Alt5-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt5-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt5-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Precautionary Area
Table E1.2-Alt5-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt5-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt5-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Turning
Table E1.2-Alt5-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Docking
Table E1.2-Alt5-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Hoteling
Table E1.2-Alt5-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Anchoring
Table E1.2-Alt5-131. Annual Emissions from Tugboat Main Engine - Alternative 5 with Mitigation
Table E1.2-Alt5-132. Max Daily Emissions from Tugboat Main Engine - Alternative 5
Table E1.2-Alt5-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 5 with Mitigation
Table E1.2-Alt5-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 5
Table E1.2-Alt5-135. Annual Emissions from AMP Electricity Consumption - Alternative 5 with Mitigation
Table E1.2-Alt5-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 5 with Mitigation
Table E1.2-Alt5-137. Summary of Annual Marine Vessel Emissions with Mitigation Alternative 5 with Mitigation
Table E1.2-Alt5-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation Alternative 5 with Mitigation
Table E1.2-Alt5-143. Truck Trips and Mileage for the Berth 97-109 Terminal Alternative 5
Table E1.2-Alt5-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Alternative 5
Table E1.2-Alt5-147. Annual Truck Emissions for the Berths 97-109 Terminal Alternative 5
Table E1.2-Alt5-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation
Table E1.2-Alt5-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation
Table E1.2-Alt5-150. Annual Truck Emissions for the Berths 97-109 Terminal Alternative 5 with Mitigation
Table E1.2-Alt5-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation
Table E1.2-Alt5-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation
Table E1.2-Alt5-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 5
Table E1.2-Alt5-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 5
Table E1.2-Alt5-155. Train Trips Associated with the Alternative 5
Table E1.2-Alt5-162. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2005

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt5-163. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2010
Table E1.2-Alt5-164. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2015
Table E1.2-Alt5-165. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2030
Table E1.2-Alt5-166. Annual Train and Associated Cargo Handling Equipment Emission Alternative 5 - Year 2045
Table E1.2-Alt5-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2005
Table E1.2-Alt5-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2010
Table E1.2-Alt5-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2015
Table E1.2-Alt5-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2030
Table E1.2-Alt5-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 - Year 2045
Table E1.2-Alt5-172. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2005
Table E1.2-Alt5-173. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2010
Table E1.2-Alt5-174. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2015
Table E1.2-Alt5-175. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2030
Table E1.2-Alt5-176. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2045
Table E1.2-Alt5-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2005
Table E1.2-Alt5-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2010
Table E1.2-Alt5-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2015
Table E1.2-Alt5-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2030
Table E1.2-Alt5-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation - Year 2045
Table E1.2-Alt5-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5
Table E1.2-Alt5-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 5
Table E1.2-Alt5-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation
Table E1.2-Alt5-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions Alternative 5 with Mitigation
Table E1.2-Alt5-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 5
Table E1.2-Alt5-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 5
Table E1.2-Alt5-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 5
Table E1.2-Alt5-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 5
Table E1.2-Alt5-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 5
Table E1.2-Alt5-191. Emissions from RTG Electricity Consumption - Mitigated Alternative 5
Table E1.2-Alt5-192. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt5-193. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation

Table E1.2-Alt5-194. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation

Table E1.2-Alt5-195. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation

Table E1.2-Alt5-196. Peak Daily Operational Emissions Without Mitigation - Alternative 5

Table E1.2-Alt5-197. Average Daily Operational Emissions Without Mitigation - Alternative 5

Table E1.2-Alt5-198. Peak Daily Operational Emissions With Mitigation - Alternative 5

Table E1.2-Alt5-199. Average Daily Operational Emissions With Mitigation - Alternative 5

Table E1.2-Alt6-1. Annual Ship Visit Data - Alternative 6

Table E1.2-Alt6-2. Peak Day Ship Visit Data - Alternative 6

Table E1.2-Alt6-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP) Alternative 6

Table E1.2-Alt6-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit - Alternative 6

Table E1.2-Alt6-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit - Alternative 6

Table E1.2-Alt6-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit - Alternative 6

Table E1.2-Alt6-18. Annual Emissions from OGV Main Engine - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt6-19. Annual Emissions from OGV Main Engine - Alternative 6

Fairway: 20-Mile to Precautionary Area

Table E1.2-Alt6-20. Annual Emissions from OGV Main Engine - Alternative 6

Precautionary Area

Table E1.2-Alt6-21. Annual Emissions from OGV Main Engine - Alternative 6

Harbor Transit - Inbound

Table E1.2-Alt6-22. Annual Emissions from OGV Main Engine - Alternative 6

Harbor Transit - Outbound

Table E1.2-Alt6-23. Annual Emissions from OGV Main Engine - Alternative 6 - Turning

Table E1.2-Alt6-24. Annual Emissions from OGV Main Engine - Alternative 6 - Docking

Table E1.2-Alt6-25. Max Daily Emissions from OGV Main Engine - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt6-26. Max Daily Emissions from OGV Main Engine - Alternative 6

Fairway: 20-Mile to Precautionary Area

Table E1.2-Alt6-27. Max Daily Emissions from OGV Main Engine - Alternative 6

Precautionary Area

Table E1.2-Alt6-28. Max Daily Emissions from OGV Main Engine - Alternative 6

Harbor Transit - Inbound

Table E1.2-Alt6-29. Max Daily Emissions from OGV Main Engine - Alternative 6

Harbor Transit - Outbound

Table E1.2-Alt6-30. Max Daily Emissions from OGV Main Engine - Alternative 6 - Turning

Table E1.2-Alt6-31. Max Daily Emissions from OGV Main Engine - Alternative 6 - Docking

Table E1.2-Alt6-32. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

Table E1.2-Alt6-33. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Fairway: 20-Mile to Precautionary Area

Table E1.2-Alt6-34. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Precautionary Area

Table E1.2-Alt6-35. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Harbor Transit - Inbound

Table E1.2-Alt6-36. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Harbor Transit - Outbound

Table E1.2-Alt6-37. Annual Emissions from OGV Auxiliary Engines - Alternative 6 - Turning

Table E1.2-Alt6-38. Annual Emissions from OGV Auxiliary Engines - Alternative 6 - Docking

Table E1.2-Alt6-39. Annual Emissions from OGV Auxiliary Engines - Alternative 6 - Hoteling

Table E1.2-Alt6-40. Annual Emissions from OGV Auxiliary Engines - Alternative 6 - Anchoring

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt6-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 Precautionary Area
Table E1.2-Alt6-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 Harbor Transit - Inbound
Table E1.2-Alt6-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 Harbor Transit - Outbound
Table E1.2-Alt6-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 - Turning
Table E1.2-Alt6-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 - Docking
Table E1.2-Alt6-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 - Hoteling
Table E1.2-Alt6-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 - Anchoring
Table E1.2-Alt6-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 Precautionary Area
Table E1.2-Alt6-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 Harbor Transit - Inbound
Table E1.2-Alt6-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 Harbor Transit - Outbound
Table E1.2-Alt6-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 - Turning
Table E1.2-Alt6-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 - Docking
Table E1.2-Alt6-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 - Hoteling
Table E1.2-Alt6-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 - Anchoring
Table E1.2-Alt6-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 Precautionary Area
Table E1.2-Alt6-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 Harbor Transit - Inbound
Table E1.2-Alt6-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 Harbor Transit - Outbound
Table E1.2-Alt6-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 - Turning
Table E1.2-Alt6-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 - Docking
Table E1.2-Alt6-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 - Hoteling
Table E1.2-Alt6-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 - Anchoring
Table E1.2-Alt6-67b. LNG Truck Mitigation Rates - Mitigated Project
Table E1.2-Alt6-68. Annual Emissions from Tugboat Main Engine - Alternative 6
Table E1.2-Alt6-69. Max Daily Emissions from Tugboat Main Engine - Alternative 6
Table E1.2-Alt6-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 6
Table E1.2-Alt6-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 6
Table E1.2-Alt6-72. Summary of Annual Marine Vessel Emissions without Mitigation Alternative 6
Table E1.2-Alt6-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation Alternative 6
Table E1.2-Alt6-74. AMP Compliance Rates - Alternative 6 with Mitigation
Table E1.2-Alt6-75. Vessel Speed Reduction Program (VSRP) Compliance Rates Alternative 6 with Mitigation
Table E1.2-Alt6-76. OGV Main Engine Slide Valve Compliance Rates Alternative 6 with Mitigation

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt6-78. OGV Main Engine Fuel Usage - Alternative 6 with Mitigation
Table E1.2-Alt6-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit Alternative 6 with Mitigation
Table E1.2-Alt6-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling - Alternative 6 with Mitigation
Table E1.2-Alt6-81. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-82. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-83. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation Precautionary Area
Table E1.2-Alt6-84. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt6-85. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt6-86. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation - Turning
Table E1.2-Alt6-87. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation - Docking
Table E1.2-Alt6-88. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-89. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-90. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Precautionary Area
Table E1.2-Alt6-91. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt6-92. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt6-93. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Turning
Table E1.2-Alt6-94. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Docking
Table E1.2-Alt6-95. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-96. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-97. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Precautionary Area
Table E1.2-Alt6-98. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt6-99. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt6-100. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Turning
Table E1.2-Alt6-101. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Docking
Table E1.2-Alt6-102. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Hoteling
Table E1.2-Alt6-103. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Anchoring
Table E1.2-Alt6-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Precautionary Area

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt6-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt6-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt6-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Turning
Table E1.2-Alt6-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Docking
Table E1.2-Alt6-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Hoteling
Table E1.2-Alt6-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Anchoring
Table E1.2-Alt6-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Precautionary Area
Table E1.2-Alt6-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt6-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt6-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Turning
Table E1.2-Alt6-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Docking
Table E1.2-Alt6-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Hoteling
Table E1.2-Alt6-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Anchoring
Table E1.2-Alt6-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Fairway: AQMD Overwater Boundary to 20-Mile
Table E1.2-Alt6-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Fairway: 20-Mile to Precautionary Area
Table E1.2-Alt6-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Precautionary Area
Table E1.2-Alt6-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Harbor Transit - Inbound
Table E1.2-Alt6-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Harbor Transit - Outbound
Table E1.2-Alt6-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Turning
Table E1.2-Alt6-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Docking
Table E1.2-Alt6-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Hoteling
Table E1.2-Alt6-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Anchoring
Table E1.2-Alt6-131. Annual Emissions from Tugboat Main Engine - Alternative 6 with Mitigation
Table E1.2-Alt6-132. Max Daily Emissions from Tugboat Main Engine - Alternative 6
Table E1.2-Alt6-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 6 with Mitigation
Table E1.2-Alt6-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 6
Table E1.2-Alt6-135. Annual Emissions from AMP Electricity Consumption - Alternative 6 with Mitigation
Table E1.2-Alt6-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 6 with Mitigation

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt6-137. Summary of Annual Marine Vessel Emissions with Mitigation Alternative 6 with Mitigation
Table E1.2-Alt6-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation Alternative 6 with Mitigation
Table E1.2-Alt6-143. Truck Trips and Mileage for the Berth 97-109 Terminal - Alternative 6
Table E1.2-Alt6-144. On-Road Truck Operational Data for the Berths 97-109 Terminal - Alternative 6
Table E1.2-Alt6-147. Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 6
Table E1.2-Alt6-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 6 without Mitigation
Table E1.2-Alt6-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 6 without Mitigation
Table E1.2-Alt6-150. Annual Truck Emissions for the Berths 97-109 Terminal Alternative 6 with Mitigation
Table E1.2-Alt6-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 6 with Mitigation
Table E1.2-Alt6-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 6 with Mitigation
Table E1.2-Alt6-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 6
Table E1.2-Alt6-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 6
Table E1.2-Alt6-155. Train Trips Associated with the Alternative 6
Table E1.2-Alt6-162. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2005
Table E1.2-Alt6-163. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2010
Table E1.2-Alt6-164. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2015
Table E1.2-Alt6-165. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2030
Table E1.2-Alt6-166. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2045
Table E1.2-Alt6-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2005
Table E1.2-Alt6-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2010
Table E1.2-Alt6-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2015
Table E1.2-Alt6-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2030
Table E1.2-Alt6-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 6 - Year 2045
Table E1.2-Alt6-172. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 with Mitigation - Year 2005
Table E1.2-Alt6-173. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 with Mitigation - Year 2010
Table E1.2-Alt6-174. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 with Mitigation - Year 2015
Table E1.2-Alt6-175. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 with Mitigation - Year 2030
Table E1.2-Alt6-176. Annual Train and Associated Cargo Handling Equipment Emissions Alternative 6 with Mitigation - Year 2045
Table E1.2-Alt6-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions Alternative 6 with Mitigation - Year 2005

Table of Contents – Appendix E1.2 Operational Emission Calculations

Table E1.2-Alt6-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2010

Table E1.2-Alt6-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2015

Table E1.2-Alt6-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2030

Table E1.2-Alt6-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2045

Table E1.2-Alt6-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 6

Table E1.2-Alt6-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6

Table E1.2-Alt6-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation

Table E1.2-Alt6-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation

Table E1.2-Alt6-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 6

Table E1.2-Alt6-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 6

Table E1.2-Alt6-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 6

Table E1.2-Alt6-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 6

Table E1.2-Alt6-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 6

Table E1.2-Alt6-191. Summary of Annual CHE Emissions for the Berths 97-109 Terminal -
Alternative 6 without Mitigation

Table E1.2-Alt6-192. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal -
Alternative 6 without Mitigation

Table E1.2-Alt6-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal -
Alternative 6 with Mitigation

Table E1.2-Alt6-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal -
Alternative 6 with Mitigation

Table E1.2-Alt6-195. Peak Daily Operational Emissions Without Mitigation - Alternative 6

Table E1.2-Alt6-196. Average Daily Operational Emissions Without Mitigation - Alternative 6

Table E1.2-Alt6-197. Peak Daily Operational Emissions With Mitigation - Alternative 6

Table E1.2-Alt6-198. Average Daily Operational Emissions With Mitigation - Alternative 6

Operational Emission Calculations - Alternative 7

Table E1.2-1. Annual Berth 97-109 TEU Throughput for CEQA Baseline

Terminal	Baseline 2001
Berths 97-109 Terminal (China Shipping)	45,135

Table E1.2-2. Annual Berth 97-109 TEU Throughput by Project Alternative

Scenario	Study Year									
	2004	2005	2006	2010	2015	2025	2030 / 2045			
Proposed Project	200,000	403,200	510,000	605,200	1,164,400	1,533,600	1,551,000			
Alt. 1 - No Project	n/a	403,200	n/a	417,600	432,000	457,100	457,100			
Alt. 2 - No Federal Action	n/a	403,200	n/a	498,400	631,800	632,500	632,500			
Alt. 3 - No Berth 102 Wharf	200,000	403,200	510,000	525,100	724,200	936,000	936,000			
Alt. 4 - No Berth 100 South	200,000	403,200	510,000	605,200	1,066,000	1,392,000	1,392,000			
Alt. 5 - Phase I Construction Only	200,000	403,200	510,000	446,400	496,800	630,000	630,000			
Alt. 6 - Omni Terminal - Container TEUs	n/a	145,000	n/a	212,735	392,867	506,467	506,467			
Alt. 6 - Omni Terminal - Auto TEUs	n/a	9,120	n/a	11,273	17,987	17,987	17,987			
Alt. 6 - Omni Terminal - Break Bulk Tons	n/a	913,166	n/a	1,393,250	2,743,777	4,180,151	5,159,570			
Alt. 7 - Non Shipping Alternative	n/a	n/a	n/a	n/a	n/a	n/a	n/a			

Source: POLA, 2007.

n/a = Throughput projections were not made for the Alt. 1, Alt. 2, or the Omni Alternative for 2004 and 2006.

Table E.1.2.3. Ship Loading and Unloading Rates

Year	Ship Work Rate (hr/day)	Gross Dock Crane Productivity (lifts/hour)	Mean Cranes per Ship
2004	16.0	30.0	3.3
2005	16.0	30.0	3.3
2006	16.5	30.6	3.4
2010	18.5	33.0	3.7
2015	19.3	34.0	3.8
2025	21.0	36.0	4.0
2030	21.0	36.0	4.0

Source: JWD, 2004. Values for 2006 and 2015 are interpolated.

Values for 2004 were assumed to be equal to 2005.

Values for 2030 were assumed to be equal to 2025.

Table E1.2.4 - Ship Visit Data - Berths 97-109 Terminal

Ship Fleet	No. of Ship Calls						Annual TEU						Average Lifts per Ship Call						Hoisting Time (hr)					
	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6		Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6		Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6		Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6	
Project Year 2004																								
Containerships 9,000 - 11,000 TEU																								
Containerships 8,000 - 9,000 TEU																								
Containerships 5,000 - 6,000 TEU	14.0	14.0	14.0	14.0	18.3		103,356	103,356	103,356	127,302	127,302		3,991	3,991	3,991	3,991	3,767		63.5	63.5	63.5	63.5	60.1	
Containerships 3,000 - 5,000 TEU	18.0	18.0	18.0	18.0	2.5		96,644	96,644	96,644	96,644	12,840		2,902	2,902	2,902	2,902	2,740		47.0	47.0	47.0	47.0	44.5	
General Cargo Vessels					46.8																			49.2
Total	32.0	32.0	32.0	32.0	67.6		200,000	200,000	200,000	140,142	140,142													
Project Year 2005																								
Containerships 9,000 - 11,000 TEU																								
Containerships 8,000 - 9,000 TEU																								
Containerships 5,000 - 6,000 TEU	42.0	42.0	42.0	42.0	21.0		343,687	343,687	343,687	131,372	131,372		4,423	4,423	4,423	4,423	3,382		70.0	70.0	70.0	70.0	54.2	
Containerships 3,000 - 5,000 TEU	10.0	10.0	10.0	10.0	5.0		59,513	59,513	59,513	22,748	22,748		3,217	3,217	3,217	3,217	2,459		51.7	51.7	51.7	51.7	40.3	
General Cargo Vessels					52.0																			49.2
Total	52.0	52.0	52.0	52.0	78.0		403,200	403,200	403,200	154,120	154,120													
Project Year 2006																								
Containerships 9,000 - 11,000 TEU																								
Containerships 8,000 - 9,000 TEU																								
Containerships 5,000 - 6,000 TEU	30.0	30.0	30.0	30.0	23.7		211,965	211,965	211,965	136,798	136,798		3,819	3,819	3,819	3,819	3,116		56.7	56.7	56.7	56.7	46.8	
Containerships 3,000 - 5,000 TEU	58.0	58.0	58.0	58.0	7.5		298,035	298,035	298,035	91,300	91,300		2,778	2,778	2,778	2,778	2,266		42.1	42.1	42.1	42.1	34.9	
General Cargo Vessels					57.2																			49.2
Total	88.0	88.0	88.0	88.0	88.4		510,000	510,000	510,000	168,098	168,098													
Project Year 2010																								
Containerships 9,000 - 11,000 TEU																								
Containerships 8,000 - 9,000 TEU	10.4	7.8	10.4	7.8			96,153	83,427	96,153	70,923	70,923		4,998	5,782	4,998	4,915		56.1	64.4	56.1	56.1	55.2		
Containerships 5,000 - 6,000 TEU	62.4	46.8	62.4	46.8	34.7		373,301	323,893	373,301	275,350	275,350		3,234	3,741	3,234	3,180	2,561		37.4	42.7	37.4	36.8	30.2	
Containerships 3,000 - 5,000 TEU	31.2	23.4	31.2	23.4	17.3		135,746	117,779	135,746	100,127	100,127		2,352	2,721	2,352	2,313	1,863		31.9	31.9	28.0	27.6	22.8	
General Cargo Vessels					78.0																			49.2
Total	104.0	78.0	104.0	78.0	130.0		605,200	525,100	605,200	446,400	446,400													
Project Year 2015																								
Containerships 9,000 - 11,000 TEU																								
Containerships 8,000 - 9,000 TEU	36.4	20.8	31.2	15.6			341,290	212,266	312,448	145,614	145,614		5,068	5,516	5,413	5,046		51.7	56.0	55.0	55.0	51.5		
Containerships 5,000 - 6,000 TEU	109.2	62.4	93.6	46.8	58.5		662,503	412,045	606,517	282,662	282,662		3,279	3,569	3,503	3,265	3,056		37.3	37.3	36.7	34.4	32.4	
Containerships 3,000 - 5,000 TEU	36.4	20.8	31.2	15.6	19.5		160,807	99,890	147,034	88,524	88,524		2,385	2,596	2,547	2,374	2,222		25.9	27.9	27.5	25.8	24.4	
General Cargo Vessels					156.0																			49.2
Total	182.0	104.0	156.0	78.0	234.0		1,164,400	724,200	1,066,000	496,800	496,800													
Project Year 2025																								
Containerships 9,000 - 11,000 TEU	18.7	10.4	16.6	8.3			191,700	117,000	174,000	78,750	78,750		5,535	6,081	5,652	5,116		46.9	51.3	47.9	43.6			
Containerships 8,000 - 9,000 TEU	58.5	32.5	52.0	26.0			509,203	310,781	462,188	209,180	209,180		4,705	5,169	4,804	4,349		40.3	44.0	41.1	37.5			
Containerships 5,000 - 6,000 TEU	124.0	68.9	110.2	55.1	61.7		698,507	426,319	634,013	286,945	286,945		3,044	3,345	3,109	2,814	3,854		27.2	29.5	27.7	25.3	33.6	
Containerships 3,000 - 5,000 TEU	32.8	18.2	29.1	14.6	16.3		134,190	81,900	121,800	55,125	55,125		2,214	2,432	2,261	2,047	2,803		20.6	22.3	20.9	19.2	25.2	
General Cargo Vessels					234.0																			49.2
Total	234.0	130.0	208.0	104.0	312.0		1,533,600	936,000	1,392,000	630,000	630,000													
Project Year 2030 / 2045																								
Containerships 9,000 - 11,000 TEU	18.7	10.4	16.6	8.3			193,875	117,000	174,000	78,750	78,750		5,598	6,081	5,652	5,116		47.4	51.3	47.9	43.6			
Containerships 8,000 - 9,000 TEU	58.5	32.5	52.0	26.0			514,980	310,781	462,188	209,180	209,180		4,758	5,169	4,804	4,349		40.8	44.0	41.1	37.5			
Containerships 5,000 - 6,000 TEU	124.0	68.9	110.2	55.1	61.7		706,432	426,319	634,013	286,945	286,945		3,078	3,345	3,109	2,814	3,854		27.4	29.5	27.7	25.3	33.6	
Containerships 3,000 - 5,000 TEU	32.8	18.2	29.1	14.6	16.3		135,713	81,900	121,800	55,125	55,125		2,239	2,432	2,261	2,047	2,803		20.8	22.3	20.9	19.2	25.2	
General Cargo Vessels					286.0																			49.2
Total	234.0	130.0	208.0	104.0	364.0		1,551,000	936,000	1,392,000	630,000	630,000													

(1) Hoisting times for container ships are calculated based on the lifts per call, ship work rate, crane productivity, and mean cranes per ship. A 3-hour tie-up and un-lie time is included in the estimate (JWD, 2004).

(2) 2004-2006 ship visits are actuals for all alternatives except for Alt. 6, for which is theoretical.

(3) Assumes 1.85 TEU per container.

(4) The CEQA Baseline, NEPA Baseline, Alt.1, and Alt. 2 would have no associated ship calls because the Berth 97-109 terminal would be used as Yang Ming Terminal overflow for those scenarios, and all ships would dock at the Yang Ming Terminal.

(5) Hoisting times for general cargo vessels are provided in Table 2.21 in the 2005 EIS.

(6) For Alt. 6 (Omni Terminal), container TEUs and automobile TEUs are both accounted for with the container TEUs. Auto TEUs are assumed to contribute to the hoisting time at the same rate per TEU as the container TEUs. Break bulk cargo is accounted for with the general cargo vessels.

Table E1.2-5. Peak Day Ship Loading and Unloading Rates

Year	Maximum Cranes Available					Peak Day Container TEUs Moved					Peak Day Percent of Annual TEUs Moved					
	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Proposed Project	Alt. 3	Alt. 4	Alt. 5
	2004	4	4	4	4	3,552	3,552	3,552	3,552	3,552	1.78%	1.78%	1.78%	1.78%	1.78%	1.78%
2005	4	4	4	4	3,552	3,552	3,552	3,552	3,552	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%
2006	4	4	4	4	3,736	3,736	3,736	3,736	3,736	0.73%	0.73%	0.73%	0.73%	0.73%	0.73%	0.73%
2010	9	4	9	9	10,165	4,518	10,165	4,518	10,165	1.68%	0.86%	1.68%	1.01%	1.68%	1.01%	1.01%
2015	10	5	9	9	12,161	6,080	10,945	4,864	12,161	1.04%	0.84%	1.03%	0.98%	1.04%	0.90%	0.89%
2025	10	5	9	9	13,986	6,993	12,587	5,594	13,986	0.91%	0.75%	0.90%	0.89%	0.91%	0.75%	0.89%
2030	10	5	9	9	13,986	6,993	12,587	5,594	13,986	0.90%	0.75%	0.90%	0.89%	0.90%	0.75%	0.89%
2045	10	5	9	9	13,986	6,993	12,587	5,594	13,986	0.90%	0.75%	0.90%	0.89%	0.90%	0.75%	0.89%
Average of Project Milestone Years (assume for CEQA BL, Alts. 1, 2, 6):																
0.93%																

Table E1.2-6. Peak Daily Ship Activity

Alternative	2005	2010	2015	2030 / 2045
Proposed Project	1200' wharf, 4 cranes 5-6K TEU ship arrives & hotels 24 hrs	2124' wharf, 9 cranes 5-6K TEU ship arrives & hotels 24 hrs 5-6K TEU ship hotels 24 hrs & departs	2500' wharf, 10 cranes 8-9K TEU ship arrives & hotels 24 hrs 5-6K TEU ship hotels 24 hrs & departs	2500' wharf, 10 cranes 10K TEU ship arrives & hotels 24 hrs 5-6K TEU hotels 24 hrs & departs
Alt. 3	1200' wharf, 4 cranes 5-6K TEU ship arrives & hotels 24 hrs	1200' wharf, 4 cranes 8-9K TEU ship arrives & hotels 24 hrs	1576' wharf, 5 cranes 8-9K TEU ship arrives & hotels 24 hrs	1576' wharf, 5 cranes 10K TEU ship arrives & hotels 24 hrs
Alt. 4	1200' wharf, 4 cranes 5-6K TEU ship arrives & hotels 24 hrs	2124' wharf, 9 cranes 5-6K TEU ship arrives & hotels 24 hrs 5-6K TEU ship hotels 24 hrs & departs	2124' wharf, 9 cranes 5-6K TEU ship arrives & hotels 24 hrs 5-6K TEU ship hotels 24 hrs & departs	2124' wharf, 9 cranes 5-6K TEU ship arrives & hotels 24 hrs 5-6K TEU ship hotels 24 hrs & departs
Alt. 5	1200' wharf, 4 cranes 5-6K TEU ship arrives & hotels 24 hrs	1200' wharf, 4 cranes 8-9K TEU ship arrives & hotels 24 hrs	1200' wharf, 4 cranes 8-9K TEU ship arrives & hotels 24 hrs	1200' wharf, 4 cranes 10K TEU ship arrives & hotels 24 hrs
Alt. 6	1200' wharf, 4 cranes 5-6K TEU ship arrives & hotels 24 hrs	2124' wharf, 5 cranes 3-5K TEU ship arrives & hotels 24 hrs 3-5K TEU ship hotels 24 hrs & departs	2500' wharf, 5 cranes 3-5K TEU ship arrives & hotels 24 hrs 3-5K TEU ship hotels 24 hrs & departs	2500' wharf, 5 cranes 3-5K TEU ship arrives & hotels 24 hrs 3-5K TEU ship hotels 24 hrs & departs

Source: POLA Engineering Dept., 2007.

Table E1.2-7. Peak Daily Truck and Auto Trips

Description		Autos		Total Trucks		Trucks to/from Off-Dock Railyards Only		Peak Day Container TEUs Moved by Truck		Peak Day Percent of Annual TEUs Moved by Truck	
Year 2005	Project	360		1,529		510		1,188		0.29%	
	Alternative 3	360		1,529		510		1,188		0.29%	
	Alternative 4	360		1,529		510		1,188		0.29%	
	Alternative 5	360		1,529		510		1,188		0.29%	
	Alternative 6	129		1,057		338		n/a		n/a	
	Alternative 7	15,256		0		0		n/a		n/a	
Year 2015	Project	1,038		4,364		1,415		3,398		0.29%	
	Alternative 3	646		2,522		655		1,985		0.27%	
	Alternative 4	951		3,941		1,233		3,075		0.29%	
	Alternative 5	443		1,632		335		1,297		0.26%	
	Alternative 6	350		2,918		916		n/a		n/a	
	Alternative 7	24,003		0		0		n/a		n/a	
Year 2030 / 2045	Project	1,262		5,055		1,807		4,319		0.28%	
	Alternative 3	761		2,833		823		2,452		0.26%	
	Alternative 4	1,132		4,472		1,542		3,827		0.27%	
	Alternative 5	512		1,796		420		1,572		0.25%	
	Alternative 6	412		3,982		998		n/a		n/a	
	Alternative 7	24,003		0		0		n/a		n/a	

Source: Ileris, 9/13/07 (autos) and 11/2/07 (trucks). Data represent weekday trips during the peak month of activity.

Table E1.2.8. Peak Daily-to-Annual Conversion Factors for Truck and Auto Trips

Project Study Year	Weekend Allocation (1)	Peak Month Factor (1)	Peak Daily-to-Annual Conversion Factor for Trucks (2)	Peak Daily-to-Annual Conversion Factor for Autos (3)
Year 2005	15%	0.091	273	298
Year 2015	15%	0.091	273	298
Year 2030	15%	0.083	298	298

Notes: (1) From MMA. Daily emissions represent an average weekday during the peak month. 15% of weekly truck trips occur on the weekend. The conversion factor represents the equivalent number of days in a year.

(2) The conversion factor for trucks accounts for the weekend allocation factor and the peak month factor.

(3) The conversion factor for autos accounts for the weekend allocation factor only (assumes number of employees is constant for all months).

(4) Conversion factors are further adjusted to account for 10 holidays per year.

Table E1.2-9. Annual Truck and Auto Trips

Description		Autos	Total Trucks	Trucks to/from Off-Dock Railyards Only
Year 2005	Project	107,268	417,702	139,325
	Alternative 3	107,268	417,702	139,325
	Alternative 4	107,268	417,702	139,325
	Alternative 5	107,268	417,702	139,325
	Alternative 6	38,576	288,758	92,337
	Alternative 7	4,551,172	0	0
Year 2015	Project	309,778	1,192,185	386,558
	Alternative 3	192,667	688,976	178,937
	Alternative 4	283,600	1,076,627	336,839
	Alternative 5	132,169	445,840	91,517
	Alternative 6	104,519	797,157	250,239
	Alternative 7	7,160,505	0	0
Year 2030 / 2045	Project	376,355	1,508,004	539,063
	Alternative 3	227,123	845,139	245,517
	Alternative 4	337,773	1,334,084	460,008
	Alternative 5	152,871	535,782	125,294
	Alternative 6	122,896	1,187,908	297,723
	Alternative 7	7,160,505	0	0

Note: Annual trips were calculated from the peak-month daily trips using the conversion factors in Table ____.

Table E1.2-10. Truck Trip Distances

Destination	One-Way Distance (mi)
B97-109 Terminal to Off-Dock Railyards - 2005	14.8
B97-109 Terminal to Off-Dock Railyards - 2015	29.9
B97-109 Terminal to Off-Dock Railyards - 2030 / 2045	31.0
B97-109 Terminal to edge of SCAB (2)	81.6
Average local trip within the SCAB (non-railyard endpoint)	20

(1) Source: Ileris, 11/6/07.

(2) From Ileris, 3/13/07. Assumes 58% of trucks travel north (94 miles), 24% of trucks travel south (54 miles), and 18% of trucks travel east (78 miles).

Table E1-2-11. Cargo Ground Transport Modes for the Berth 97-109 Terminal

Alternative	TEUs hauled through B121-131 ICTF	TEUs hauled through Off-Dock Railyards	TEUs hauled by Truck only (No Rail)	Annual TEUs Hauled Through B121-131 ICTF	TEUs Hauled by Truck (2)	TEUs Hauled by Train (2)	TEUs hauled outside the SCAB (1)	TEUs hauled outside the SCAB by Truck (4)	Annual Truck Trips To/From Off-Dock Rail	Annual Truck Trips Outside SCAB	Annual Local Truck Trips within SCAB	Total Annual Truck VMT (miles/year)	Average Truck Trip Distance (miles/trip) (3)
Year 2005	Proposed Project	19.5%	19.1%	61.4%	78,624	81%	39%	50%	139,325	59,153	219,224	11,271,936	27.0
	Alt. 3 (No B102 Wharf)	19.5%	19.1%	61.4%	78,624	81%	39%	50%	139,325	59,153	219,224	11,271,936	27.0
	Alt. 4 (No B100 South Extension)	19.5%	19.1%	61.4%	78,624	81%	39%	50%	139,325	59,153	219,224	11,271,936	27.0
	Alt. 5 (Phase I Construction Only)	19.5%	19.1%	61.4%	78,624	81%	39%	50%	139,325	59,153	219,224	11,271,936	27.0
	Alt. 6 (Omni Terminal) (6)	0.0%	35.6%	64.4%	-	100%	36%	50%	92,337	78,051	118,369	10,101,102	35.0
Year 2015	Proposed Project	20.3%	18.3%	61.4%	236,158	80%	39%	50%	386,558	170,762	634,864	38,185,491	32.0
	Alt. 3 (No B102 Wharf)	25.1%	13.5%	61.4%	182,014	75%	39%	50%	178,937	104,606	405,433	21,992,180	31.9
	Alt. 4 (No B100 South Extension)	21.2%	17.4%	61.4%	225,951	79%	39%	50%	336,839	155,801	583,988	34,460,818	32.0
	Alt. 5 (Phase I Construction Only)	28.7%	9.9%	61.4%	142,467	71%	39%	50%	91,517	71,406	282,916	14,219,716	31.9
	Alt. 6 (Omni Terminal) (6)	0.0%	35.6%	64.4%	-	100%	36%	50%	250,239	218,853	328,066	31,896,575	40.0
Year 2030 / 2045	Proposed Project	16.9%	19.6%	63.5%	262,578	83%	37%	50%	539,063	244,532	724,409	51,147,107	33.9
	Alt. 3 (No B102 Wharf)	21.8%	14.7%	63.5%	204,497	78%	37%	50%	245,517	145,471	454,151	28,560,953	33.8
	Alt. 4 (No B100 South Extension)	18.0%	18.6%	63.4%	250,223	82%	37%	50%	460,008	218,338	655,738	45,186,141	33.9
	Alt. 5 (Phase I Construction Only)	25.5%	11.0%	63.5%	160,901	74%	37%	50%	125,294	96,854	313,634	18,057,718	33.7
	Alt. 6 (Omni Terminal) (6)	0.0%	33.6%	66.4%	-	100%	34%	50%	297,723	394,987	495,198	51,354,795	43.2

(1) Source: POLA, 9/7/2007.

(2) TEUs hauled by truck + TEUs hauled by train add to greater than 100 percent because some TEUs are hauled by both truck and train.

(3) Average trip length is calculated based on the percentage of trips to the various destinations, but is required to be no less than 25.6 miles per trip, which is the total average trip length based on the last O/D surveys (from Gary Hamrick/Iters, 11/5/07).

(4) All train trips are assumed to travel outside the SCAB. Therefore, TEUs transported outside the SCAB by truck equal TEUs transported outside the SCAB (50%) minus TEUs transported by train.

(5) The CEQA Baseline, NEPA Baseline, Alt. 1, and Alt. 2 would have no truck trips because the Berth 97-109 terminal would be used as Yang Ming Terminal overflow for those scenarios.

(6) For Alt. 6 (Omni Terminal), all autocarrier and break bulk cargo is assumed to be transported exclusively via truck (POLA, 10/5/07), 1/2 out of the SCAB and 1/2 within the SCAB. Container TEUs are apportioned to the railway and nonrailyard destinations as indicated in this table.

Table E1.2-12. Train Capacity for the Berth 97-109 Terminal Project

<i>Description</i>	<i>No. of Containers</i>	<i>No. of TEUs</i>
Inbound Train	150	278
Outbound Train	225	416
Total (Round Trip)	375	694

Source: POLA Engineering Dept.

Table E1.2-13. Train Trips Generated by the Berths 97-109 Terminal

Railyard Destination	Annual TEU Distribution to Railyards (TEU/year)						Annual Train Round Trips				
	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6	
Year 2005											
To/From Berths 121-131 ICTF	78,624	78,624	78,624	78,624	-	113	113	113	113	-	
To/From Off-Dock Railyards	77,011	77,011	77,011	77,011	51,620	111	111	111	111	74	
Total - 2005	155,635	155,635	155,635	155,635	51,620	224	224	224	224	74	
Year 2015											
To/From Berths 121-131 ICTF	236,158	182,014	225,951	142,467	-	340	262	326	205	-	
To/From Off-Dock Railyards	213,085	97,767	185,484	49,183	139,861	307	141	267	71	202	
Total - 2015	449,243	279,781	411,435	191,650	139,861	648	403	593	276	202	
Year 2030 / 2045											
To/From Berths 121-131 ICTF	262,578	204,497	250,223	160,901	-	378	295	361	232	-	
To/From Off-Dock Railyards	303,996	137,592	258,912	69,300	170,173	438	198	373	100	245	
Total - 2030 / 2045	566,574	342,089	509,135	230,201	170,173	817	493	734	332	245	

Source for TEU distribution: Iteris, 11/2/07.

Notes:

- (1) For Alt. 6 (Omni Terminal), break bulk and auto TEUs are assumed not to be transported by rail. Only container TEUs would be transported by rail (POLA, 10/5/07).
- (2) CEQA Baseline, NEPA Baseline, Alt. 1, and Alt. 2 would have no train trips because the B97-109 terminal would be used as Yang Ming Terminal overflow for those scenarios.
- (3) Alt. 6 would not use on-dock rail.
- (4) TEUs moved to/from off-dock railyards were provided by Iteris (11/2/07).

Table E1.2-14. Peak Day Train Trips Generated by the Berths 97-109 Terminal

Railyard Destination	Peak Daily Train Round Trips						Peak Day Container TEUs Moved by Rail					Peak Day Percent of Annual TEUs Moved by Rail					
	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Proposed Project	Alt. 3	Alt. 4	Alt. 5	Proposed Project	Alt. 3	Alt. 4	Alt. 5
		Alt. 3	Alt. 4	Alt. 5	Alt. 6		Alt. 3	Alt. 4	Alt. 5		Alt. 3	Alt. 4	Alt. 5		Alt. 3	Alt. 4	Alt. 5
Year 2005																	
To/from Berths 121-131 ICTF	1	1	1	1	-	694	694	694	694	694	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%
To/from Carson ICTF	1	1	1	1	1	694	694	694	694	694	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%
Total - 2005	2	2	2	2	1	1,388	1,388	1,388	1,388	1,388	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%
Year 2015																	
To/from Berths 121-131 ICTF	1	1	1	1	-	694	694	694	694	694	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%
To/from Carson ICTF	1	1	1	1	1	694	694	694	694	694	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%
Total - 2015	2	2	2	2	1	1,388	1,388	1,388	1,388	1,388	0.12%	0.12%	0.12%	0.12%	0.12%	0.12%	0.12%
Year 2030 / 2045																	
To/from Berths 121-131 ICTF	2	1	2	1	-	1,388	694	1,388	694	1,388	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%
To/from Carson ICTF	2	1	2	1	1	1,388	694	1,388	694	1,388	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%
Total - 2030 / 2045	4	2	4	2	1	2,775	1,388	2,775	2,775	1,388	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%

Peak day train trips are estimated by dividing the annual round trips by 350 work days per year and rounding up to nearest whole number.

Table E1.2-15. Estimated Berths 97-109 CHE Usage Rates per TEU

Equipment / Horsepower	Container Terminal Usage Rate (hp-hr/TEU)	Breakbulk Terminal Usage Rate (hp-hr/ship call)
Forklift >120-175	0.56	47,554
Forklift >175-250	0.10	25,984
Forklift >25-50	0.18	11,689
RTG >175-250	7.71	2,811
Side pick >120-175	1.06	-
Top pick >175-250	17.28	2,439
Yard tractor >120-175	59.41	16,573
Other Equipment	0.41	426,686

Notes: (1) The container terminal usage rate is derived from actual 2005 CHE usage data at the Berths 97-109 terminal (Source: Starcrest).

(2) The breakbulk terminal usage rate is derived from actual 2005 CHE usage data at the four breakbulk terminals at the POLA (Source: Starcrest).

Table E1.2-16. Estimated Berths 97-109 CHE Usage - CEQA Baseline (2001)

Equipment / Horsepower	Annual 2001 Usage (hp-hr/yr)
<i>Baseline (2001)</i>	
Forklift >120-175	25,063
Forklift >175-250	4,659
Forklift >25-50	8,302
RTG >175-250	347,942
Side pick >120-175	47,626
Top pick >175-250	779,926
Yard tractor >120-175	2,681,382
Other Equipment	18,574

Notes: (1) Equipment usage is derived from actual 2001 CHE usage data at the West Basin Container Terminal (source: Starcrest).

Table E1.2-17. Estimated Berths 97-109 Terminal Equipment Usage - Project Alternatives

Equipment / Horsepower	Annual CHE Usage (hp-hr/yr)						
	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Project Year 2004							
Forklift >120-175	111,060	n/a	n/a	111,060	111,060	111,060	n/a
Forklift >175-250	20,646	n/a	n/a	20,646	20,646	20,646	n/a
Forklift >25-50	36,787	n/a	n/a	36,787	36,787	36,787	n/a
RTG >175-250	1,541,783	n/a	n/a	1,541,783	1,541,783	1,541,783	n/a
Side pick >120-175	211,036	n/a	n/a	211,036	211,036	211,036	n/a
Top pick >175-250	3,455,968	n/a	n/a	3,455,968	3,455,968	3,455,968	n/a
Yard tractor >120-175	11,881,609	n/a	n/a	11,881,609	11,881,609	11,881,609	n/a
Other Equipment	82,306	n/a	n/a	82,306	82,306	82,306	n/a
Project Year 2005							
Forklift >120-175	223,897	223,897	223,897	223,897	223,897	223,897	2,553,306
Forklift >175-250	41,623	41,623	41,623	41,623	41,623	41,623	1,366,114
Forklift >25-50	74,163	74,163	74,163	74,163	74,163	74,163	634,474
RTG >175-250	3,108,235	3,108,235	3,108,235	3,108,235	3,108,235	3,108,235	1,263,977
Side pick >120-175	425,449	425,449	425,449	425,449	425,449	425,449	153,001
Top pick >175-250	6,967,232	6,967,232	6,967,232	6,967,232	6,967,232	6,967,232	2,632,422
Yard tractor >120-175	23,953,325	23,953,325	23,953,325	23,953,325	23,953,325	23,953,325	9,475,942
Other Equipment	165,929	165,929	165,929	165,929	165,929	165,929	22,247,338
Project Year 2006							
Forklift >120-175	283,203	n/a	n/a	283,203	283,203	283,203	n/a
Forklift >175-250	52,648	n/a	n/a	52,648	52,648	52,648	n/a
Forklift >25-50	93,807	n/a	n/a	93,807	93,807	93,807	n/a
RTG >175-250	3,931,547	n/a	n/a	3,931,547	3,931,547	3,931,547	n/a
Side pick >120-175	538,142	n/a	n/a	538,142	538,142	538,142	n/a
Top pick >175-250	8,812,719	n/a	n/a	8,812,719	8,812,719	8,812,719	n/a
Yard tractor >120-175	30,298,104	n/a	n/a	30,298,104	30,298,104	30,298,104	n/a
Other Equipment	209,881	n/a	n/a	209,881	209,881	209,881	n/a
Project Year 2010							
Forklift >120-175	336,068	231,893	276,762	291,588	336,068	247,886	3,827,313
Forklift >175-250	62,475	43,109	51,450	54,206	62,475	46,082	2,048,680
Forklift >25-50	111,318	76,811	91,673	96,585	111,318	82,109	950,835
RTG >175-250	4,665,436	3,219,243	3,842,124	4,047,952	4,665,436	3,441,260	1,859,231
Side pick >120-175	638,595	440,643	525,902	554,075	638,595	471,032	224,473
Top pick >175-250	10,457,760	7,216,062	8,612,273	9,073,645	10,457,760	7,713,721	3,866,289
Yard tractor >120-175	35,953,750	24,808,801	29,608,971	31,195,166	35,953,750	26,519,752	13,930,817
Other Equipment	249,058	171,855	205,107	216,095	249,058	183,707	33,369,046
Project Year 2015							
Forklift >120-175	646,591	239,890	350,839	402,148	591,950	275,873	7,636,522
Forklift >175-250	120,202	44,596	65,221	74,760	110,044	51,285	4,093,994
Forklift >25-50	214,174	79,460	116,210	133,206	196,075	91,379	1,895,672
RTG >175-250	8,976,262	3,330,252	4,870,493	5,582,797	8,217,704	3,829,789	3,467,129
Side pick >120-175	1,228,652	455,838	666,663	764,161	1,124,822	524,213	414,545
Top pick >175-250	20,120,647	7,464,892	10,917,404	12,514,061	18,420,311	8,584,625	7,169,207
Yard tractor >120-175	69,174,730	25,664,277	37,534,004	43,023,308	63,328,979	29,513,918	25,924,766
Other Equipment	479,186	177,781	260,005	298,030	438,691	204,448	66,724,675
Project Year 2025							
Forklift >120-175	851,608	253,828	351,227	519,761	772,978	349,839	11,408,786
Forklift >175-250	158,315	47,187	65,293	96,624	143,697	65,035	6,132,439
Forklift >25-50	282,083	84,077	116,339	172,164	256,038	115,879	2,828,272
RTG >175-250	11,822,393	3,523,745	4,875,889	7,215,545	10,730,811	4,856,617	4,562,139
Side pick >120-175	1,618,224	482,323	667,401	987,648	1,468,811	664,763	534,413
Top pick >175-250	26,500,365	7,898,616	10,929,500	16,173,932	24,053,539	10,886,300	9,322,464
Yard tractor >120-175	91,108,182	27,155,419	37,575,590	55,605,932	82,696,002	37,427,070	33,966,182
Other Equipment	631,123	188,111	260,293	385,192	572,850	259,264	100,052,924
Project Year 2030 / 2045							
Forklift >120-175	861,270	253,828	351,227	519,761	772,978	349,839	13,881,573
Forklift >175-250	160,111	47,187	65,293	96,624	143,697	65,035	7,483,585
Forklift >25-50	285,284	84,077	116,339	172,164	256,038	115,879	3,436,076
RTG >175-250	11,956,529	3,523,745	4,875,889	7,215,545	10,730,811	4,856,617	4,708,323
Side pick >120-175	1,636,584	482,323	667,401	987,648	1,468,811	664,763	534,413
Top pick >175-250	26,801,034	7,898,616	10,929,500	16,173,932	24,053,539	10,886,300	9,449,309
Yard tractor >120-175	92,141,882	27,155,419	37,575,590	55,605,932	82,696,002	37,427,070	34,827,957
Other Equipment	638,284	188,111	260,293	385,192	572,850	259,264	122,240,591

Note: (1) Usage rates for Alt. 6 (Omni Terminal) include contributions from container TEUs and breakbulk cargo.

(2) CHE usage for the NEPA Baseline is assumed equal to Alternative 2 (No Federal Action).

n/a = TEU projections were not made for Alt. 1, Alt. 2, or Alt. 6 (Omni Alternative) for years 2004 and 2006.

Table E1.2-PP-1. Annual Ship Visit Data - Proposed Project

<i>Project Scenario/Ship Type</i>	<i>Annual Ship Visits</i>	<i>Avg Hoteling per Ship (hr)</i>
Project Year 2005		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	42	70.0
Containerships 3,000 - 5,000 TEU	10	51.7
General Cargo Vessels	-	-
Total	52	
Project Year 2010		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	10	56.1
Containerships 5,000 - 6,000 TEU	62	37.4
Containerships 3,000 - 5,000 TEU	31	28.0
General Cargo Vessels	-	-
Total	104	
Project Year 2015		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	36	51.7
Containerships 5,000 - 6,000 TEU	109	34.5
Containerships 3,000 - 5,000 TEU	36	25.9
General Cargo Vessels	-	-
Total	182	
Project Year 2030 / 2045		
Containerships 9,000 - 11,000 TEU	19	47.4
Containerships 8,000 - 9,000 TEU	59	40.8
Containerships 5,000 - 6,000 TEU	124	27.4
Containerships 3,000 - 5,000 TEU	33	20.8
General Cargo Vessels	-	-
Total	234	

Table E1.2-PP-2. Peak Day Ship Visit Data - Proposed Project

Project Scenario/Ship Type	Peak Day Arrivals	Peak Day Departures	Peak Day Hoteling (hr)	
			Without Mitigation	With Mitigation
Project Year 2005				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1		20.4	20.4
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	20.4
Project Year 2010				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1	1	41.1	37.9
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	1	41.1	37.9
Project Year 2015				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU	1		20.4	18.8
Containerships 5,000 - 6,000 TEU		1	20.7	19.1
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	1	41.1	37.9
Project Year 2030 / 2045				
Containerships 9,000 - 11,000 TEU	1		20.4	18.8
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU		1	20.7	19.1
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	1	41.1	37.9

Notes: (1) Hoteling time equals 24 hours minus vessel transit time within the SCAB. Because the Vessel Speed Reduction (VSR) program increases transit time, the hoteling times are shorter when VSR is implemented as mitigation. For the Mitigated Project, VSR is assumed for 2010, 2015, 2030, and 2045. VSR is not assumed for the unmitigated project and for the 2005 mitigated project.

Table E1.2-PP-3. OGV Main Engine Usage per One-Way Transit

Vessel Type	Propulsion Max Hp	Speed (Kts)	Load Factor	Distance (nm/trip)	Duration (hr/trip)	Energy Consumed (kW-hr/trip)
Fairway: AQMD Overwater Boundary to 20-Mile, Without VSR (1)						
Containerships 9,000 - 11,000 TEU	91,748	23.5	0.83	17.1	0.73	41,380
Containerships 8,000 - 9,000 TEU	85,654	23.5	0.83	17.1	0.73	38,632
Containerships 5,000 - 6,000 TEU	62,432	23.5	0.83	17.1	0.73	28,158
Containerships 3,000 - 5,000 TEU	44,762	21.6	0.83	17.1	0.79	21,944
General Cargo Vessels	10,993	15.0	0.83	17.1	1.14	7,747
Fairway: AQMD Overwater Boundary to 20-Mile, With VSR						
Containerships 9,000 - 11,000 TEU	91,748	12.0	0.11	17.1	1.43	10,786
Containerships 8,000 - 9,000 TEU	85,654	12.0	0.11	17.1	1.43	10,070
Containerships 5,000 - 6,000 TEU	62,432	12.0	0.11	17.1	1.43	7,340
Containerships 3,000 - 5,000 TEU	44,762	12.0	0.14	17.1	1.43	6,758
General Cargo Vessels	10,993	12.0	0.42	17.1	1.43	4,930
Fairway: 20-Mile to Precautionary Area, Without VSR						
Containerships 9,000 - 11,000 TEU	91,748	23.5	0.83	22.4	0.95	54,206
Containerships 8,000 - 9,000 TEU	85,654	23.5	0.83	22.4	0.95	50,605
Containerships 5,000 - 6,000 TEU	62,432	23.5	0.83	22.4	0.95	36,885
Containerships 3,000 - 5,000 TEU	44,762	21.6	0.83	22.4	1.04	28,745
General Cargo Vessels	10,993	15.0	0.83	22.4	1.49	10,148
Fairway: 20-Mile to Precautionary Area, With VSR						
Containerships 9,000 - 11,000 TEU	91,748	12.0	0.11	22.4	1.87	14,129
Containerships 8,000 - 9,000 TEU	85,654	12.0	0.11	22.4	1.87	13,191
Containerships 5,000 - 6,000 TEU	62,432	12.0	0.11	22.4	1.87	9,615
Containerships 3,000 - 5,000 TEU	44,762	12.0	0.14	22.4	1.87	8,853
General Cargo Vessels	10,993	12.0	0.42	22.4	1.87	6,458
Precautionary Area						
Containerships 9,000 - 11,000 TEU	91,748	11.0	0.09	10.4	0.95	5,512
Containerships 8,000 - 9,000 TEU	85,654	11.0	0.09	10.4	0.95	5,146
Containerships 5,000 - 6,000 TEU	62,432	11.0	0.09	10.4	0.95	3,751
Containerships 3,000 - 5,000 TEU	44,762	11.0	0.11	10.4	0.95	3,454
General Cargo Vessels	10,993	9.0	0.18	10.4	1.16	1,687
Harbor Transit Inbound						
Containerships 9,000 - 11,000 TEU	91,748	7.0	0.02	3.5	0.50	751
Containerships 8,000 - 9,000 TEU	85,654	7.0	0.02	3.5	0.50	701
Containerships 5,000 - 6,000 TEU	62,432	7.0	0.02	3.5	0.50	511
Containerships 3,000 - 5,000 TEU	44,762	7.0	0.03	3.5	0.50	471
General Cargo Vessels	10,993	5.0	0.03	3.5	0.70	175
Harbor Transit Outbound						
Containerships 9,000 - 11,000 TEU	91,748	8.0	0.03	3.5	0.44	981
Containerships 8,000 - 9,000 TEU	85,654	8.0	0.03	3.5	0.44	916
Containerships 5,000 - 6,000 TEU	62,432	8.0	0.03	3.5	0.44	668
Containerships 3,000 - 5,000 TEU	44,762	8.0	0.04	3.5	0.44	615
General Cargo Vessels	10,993	8.0	0.13	3.5	0.44	448
Turning						
Containerships 9,000 - 11,000 TEU	91,748	n/a	0.02	n/a	0.23	319
Containerships 8,000 - 9,000 TEU	85,654	n/a	0.02	n/a	0.23	298
Containerships 5,000 - 6,000 TEU	62,432	n/a	0.02	n/a	0.23	217
Containerships 3,000 - 5,000 TEU	44,762	n/a	0.02	n/a	0.23	156
General Cargo Vessels	10,993	n/a	0.02	n/a	0.23	38
Docking						
Containerships 9,000 - 11,000 TEU	91,748	n/a	0.02	n/a	0.25	342
Containerships 8,000 - 9,000 TEU	85,654	n/a	0.02	n/a	0.25	319
Containerships 5,000 - 6,000 TEU	62,432	n/a	0.02	n/a	0.25	233
Containerships 3,000 - 5,000 TEU	44,762	n/a	0.02	n/a	0.25	167
General Cargo Vessels	10,993	n/a	0.02	n/a	0.25	41

Source: POLA 2005 Emission Inventory Report.

(1) VSR = vessel speed reduction (speed reduced to 12 knots).

Table E1.2-PP-4. OGV Auxiliary Generator Usage per One-Way Transit

Vessel Type	Auxiliary kW per Vessel (1)	Load Factor (2)	Hours/ Transit	kW-Hrs/ Transit
Fairway: AQMD Overwater Boundary to 20-Mile, Without VSR				
Containerships 9,000 - 11,000 TEU	13,501	0.13	0.73	1,277
Containerships 8,000 - 9,000 TEU	13,501	0.13	0.73	1,277
Containerships 5,000 - 6,000 TEU	11,360	0.13	0.73	1,074
Containerships 3,000 - 5,000 TEU	6,526	0.13	0.79	671
General Cargo Vessels	1,776	0.17	1.14	343
Fairway: AQMD Overwater Boundary to 20-Mile, With VSR				
Containerships 9,000 - 11,000 TEU	13,501	0.13	1.43	2,501
Containerships 8,000 - 9,000 TEU	13,501	0.13	1.43	2,501
Containerships 5,000 - 6,000 TEU	11,360	0.13	1.43	2,104
Containerships 3,000 - 5,000 TEU	6,526	0.13	1.43	1,209
General Cargo Vessels	1,776	0.17	1.43	430
Fairway: 20-Mile to Precautionary Area, Without VSR				
Containerships 9,000 - 11,000 TEU	13,501	0.13	0.95	1,673
Containerships 8,000 - 9,000 TEU	13,501	0.13	0.95	1,673
Containerships 5,000 - 6,000 TEU	11,360	0.13	0.95	1,407
Containerships 3,000 - 5,000 TEU	6,526	0.13	1.04	879
General Cargo Vessels	1,776	0.17	1.49	450
Fairway: 20-Mile to Precautionary Area, With VSR				
Containerships 9,000 - 11,000 TEU	13,501	0.13	1.87	3,276
Containerships 8,000 - 9,000 TEU	13,501	0.13	1.87	3,276
Containerships 5,000 - 6,000 TEU	11,360	0.13	1.87	2,757
Containerships 3,000 - 5,000 TEU	6,526	0.13	1.87	1,584
General Cargo Vessels	1,776	0.17	1.87	564
Precautionary Area				
Containerships 9,000 - 11,000 TEU	13,501	0.13	0.95	1,659
Containerships 8,000 - 9,000 TEU	13,501	0.13	0.95	1,659
Containerships 5,000 - 6,000 TEU	11,360	0.13	0.95	1,396
Containerships 3,000 - 5,000 TEU	6,526	0.13	0.95	802
General Cargo Vessels	1,776	0.17	1.16	349
Harbor Transit Inbound				
Containerships 9,000 - 11,000 TEU	13,501	0.50	0.50	3,375
Containerships 8,000 - 9,000 TEU	13,501	0.50	0.50	3,375
Containerships 5,000 - 6,000 TEU	11,360	0.49	0.50	2,783
Containerships 3,000 - 5,000 TEU	6,526	0.47	0.50	1,517
General Cargo Vessels	1,776	0.45	0.70	559
Harbor Transit Outbound				
Containerships 9,000 - 11,000 TEU	13,501	0.50	0.44	2,953
Containerships 8,000 - 9,000 TEU	13,501	0.50	0.44	2,953
Containerships 5,000 - 6,000 TEU	11,360	0.49	0.44	2,435
Containerships 3,000 - 5,000 TEU	6,526	0.47	0.44	1,328
General Cargo Vessels	1,776	0.45	0.44	350
Turning				
Containerships 9,000 - 11,000 TEU	13,501	0.50	0.23	1,575
Containerships 8,000 - 9,000 TEU	13,501	0.50	0.23	1,575
Containerships 5,000 - 6,000 TEU	11,360	0.49	0.23	1,299
Containerships 3,000 - 5,000 TEU	6,526	0.47	0.23	708
General Cargo Vessels	1,776	0.45	0.23	186
Docking				
Containerships 9,000 - 11,000 TEU	13,501	0.50	0.25	1,688
Containerships 8,000 - 9,000 TEU	13,501	0.50	0.25	1,688
Containerships 5,000 - 6,000 TEU	11,360	0.49	0.25	1,392
Containerships 3,000 - 5,000 TEU	6,526	0.47	0.25	759
General Cargo Vessels	1,776	0.45	0.25	200

Source: POLA 2005 Emission Inventory Report.

Table E1.2-PP-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP)

Proposed Project

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel</i>	<i>Load Factor (1)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	70.0	127,267
Containerships 3,000 - 5,000 TEU	6,526	0.20	51.7	67,533
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	56.1	113,608
Containerships 5,000 - 6,000 TEU	11,360	0.16	37.4	67,902
Containerships 3,000 - 5,000 TEU	6,526	0.20	28.0	36,529
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	51.7	104,692
Containerships 5,000 - 6,000 TEU	11,360	0.16	34.5	62,724
Containerships 3,000 - 5,000 TEU	6,526	0.20	25.9	33,825
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	47.4	96,052
Containerships 8,000 - 9,000 TEU	13,501	0.15	40.8	82,556
Containerships 5,000 - 6,000 TEU	11,360	0.16	27.4	49,868
Containerships 3,000 - 5,000 TEU	6,526	0.20	20.8	27,111
General Cargo Vessels	1,776	0.22	-	-

(1) Source: POLA 2005 Emission Inventory Report.

Table E1.2-PP-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit

Proposed Project

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel (1)</i>	<i>Load Factor (2)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	4.1	8,303
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-

Note: Average anchoring time was derived from actual anchoring data for China

Shipping ship visits for 2004, 2005, and 2006, provided by Starcrest and POLA.

Table E1.2-PP-7. OGV Auxiliary Boiler Usage per One-Way Transit

Vessel Type	Fuel Use (tonne/hr) (1)	Hours/ Transit	Fuel Use/ Transit (tonne)
Fairway: AQMD Overwater Boundary to 20-Mile, Without VSR (2)			
Containerships 9,000 - 11,000 TEU	-	0.73	-
Containerships 8,000 - 9,000 TEU	-	0.73	-
Containerships 5,000 - 6,000 TEU	-	0.73	-
Containerships 3,000 - 5,000 TEU	-	0.79	-
General Cargo Vessels	-	1.14	-
Fairway: AQMD Overwater Boundary to 20-Mile, With VSR (2)			
Containerships 9,000 - 11,000 TEU	-	1.43	-
Containerships 8,000 - 9,000 TEU	-	1.43	-
Containerships 5,000 - 6,000 TEU	-	1.43	-
Containerships 3,000 - 5,000 TEU	-	1.43	-
General Cargo Vessels	-	1.43	-
Fairway: 20-Mile to Precautionary Area, Without VSR (2)			
Containerships 9,000 - 11,000 TEU	-	0.95	-
Containerships 8,000 - 9,000 TEU	-	0.95	-
Containerships 5,000 - 6,000 TEU	-	0.95	-
Containerships 3,000 - 5,000 TEU	-	1.04	-
General Cargo Vessels	-	1.49	-
Fairway: 20-Mile to Precautionary Area, With VSR (2)			
Containerships 9,000 - 11,000 TEU	-	1.87	-
Containerships 8,000 - 9,000 TEU	-	1.87	-
Containerships 5,000 - 6,000 TEU	-	1.87	-
Containerships 3,000 - 5,000 TEU	-	1.87	-
General Cargo Vessels	-	1.87	-
Precautionary Area			
Containerships 9,000 - 11,000 TEU	0.1543	0.95	0.146
Containerships 8,000 - 9,000 TEU	0.1543	0.95	0.146
Containerships 5,000 - 6,000 TEU	0.1543	0.95	0.146
Containerships 3,000 - 5,000 TEU	0.1543	0.95	0.146
General Cargo Vessels	0.0323	1.16	0.037
Harbor Transit Inbound			
Containerships 9,000 - 11,000 TEU	0.1543	0.50	0.077
Containerships 8,000 - 9,000 TEU	0.1543	0.50	0.077
Containerships 5,000 - 6,000 TEU	0.1543	0.50	0.077
Containerships 3,000 - 5,000 TEU	0.1543	0.50	0.077
General Cargo Vessels	0.0323	0.70	0.023
Harbor Transit Outbound			
Containerships 9,000 - 11,000 TEU	0.1543	0.44	0.068
Containerships 8,000 - 9,000 TEU	0.1543	0.44	0.068
Containerships 5,000 - 6,000 TEU	0.1543	0.44	0.068
Containerships 3,000 - 5,000 TEU	0.1543	0.44	0.068
General Cargo Vessels	0.0323	0.44	0.014
Turning			
Containerships 9,000 - 11,000 TEU	0.1543	0.23	0.036
Containerships 8,000 - 9,000 TEU	0.1543	0.23	0.036
Containerships 5,000 - 6,000 TEU	0.1543	0.23	0.036
Containerships 3,000 - 5,000 TEU	0.1543	0.23	0.036
General Cargo Vessels	0.0323	0.23	0.008
Docking			
Containerships 9,000 - 11,000 TEU	0.1543	0.25	0.039
Containerships 8,000 - 9,000 TEU	0.1543	0.25	0.039
Containerships 5,000 - 6,000 TEU	0.1543	0.25	0.039
Containerships 3,000 - 5,000 TEU	0.1543	0.25	0.039
General Cargo Vessels	0.0323	0.25	0.008

(1) Tonnes = metric tons = 1,000 kg.

(2) The boiler is assumed not to be operated in the Fairway (Starcrest, 2007).

Table E1.2-PP-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit

Proposed Project

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	70.0	10.806
Containerships 3,000 - 5,000 TEU	0.1543	51.7	7.985
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	56.1	8.658
Containerships 5,000 - 6,000 TEU	0.1543	37.4	5.765
Containerships 3,000 - 5,000 TEU	0.1543	28.0	4.319
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	51.7	7.978
Containerships 5,000 - 6,000 TEU	0.1543	34.5	5.326
Containerships 3,000 - 5,000 TEU	0.1543	25.9	4.000
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	47.4	7.320
Containerships 8,000 - 9,000 TEU	0.1543	40.8	6.291
Containerships 5,000 - 6,000 TEU	0.1543	27.4	4.234
Containerships 3,000 - 5,000 TEU	0.1543	20.8	3.206
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-PP-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit

Proposed Project

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	4.1	0.633
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-PP-10. Tugboat Main Engine Usage during Assists

<i>Vessel Type</i>	<i>Tugboat Max Hp (1)</i>	<i>Load Factor (1)</i>	<i>Hours/ Assist (2)</i>	<i>Tugboats per Assist</i>	<i>kW-Hrs/ Assist</i>
Containerships 9,000 - 11,000 TEU	4,543	0.31	1.13	2	2,367
Containerships 8,000 - 9,000 TEU	4,543	0.31	1.13	2	2,367
Containerships 5,000 - 6,000 TEU	4,543	0.31	1.13	2	2,367
Containerships 3,000 - 5,000 TEU	4,543	0.31	1.13	2	2,367
General Cargo Vessels	4,543	0.31	1.39	2	2,914

(1) Source: POLA 2005 Emission Inventory Report.

(2) Time spent operating per vessel trip. Equal to vessel "Harbor" transit times 1.3 to account for tug movement and assist time.

Table E1.2-PP-11. Tugboat Auxiliary Generator Usage during Assists

<i>Vessel Type</i>	<i>Aux. Engine Hp (1)</i>	<i>Load Factor (1)</i>	<i>Hours/ Assist</i>	<i>Tugboats per Assist</i>	<i>kW-Hrs/ Assist</i>
Containerships 9,000 - 11,000 TEU	258	0.43	1.13	2	186
Containerships 8,000 - 9,000 TEU	258	0.43	1.13	2	186
Containerships 5,000 - 6,000 TEU	258	0.43	1.13	2	186
Containerships 3,000 - 5,000 TEU	258	0.43	1.13	2	186
General Cargo Vessels	258	0.43	1.39	2	229

(1) Source: POLA 2005 Emission Inventory Report.

Table E1.2-PP-12. Emission Factors for Commercial Marine Vessels

Engine Type	Assumed Fuel Type	Description	VOC	CO	NOx	SOx	PM10	PM2.5	Notes
Main Propulsion Engine (g/kW-hr)									
OGV Main Engines	Residual Oil (4.5% S)	Worst case fuel	0.60	1.40	18.10	17.55	1.99	1.59	(1)
	Residual Oil (2.7% S)	Current in-use average	0.60	1.40	18.10	10.53	1.50	1.20	(2)
	MDO (0.5% S)	Low sulfur fuel	0.60	1.40	16.29	1.85	0.59	0.47	(2)
	MGO (0.2% S)	Low sulfur fuel	0.60	1.40	16.29	0.74	0.54	0.43	(2)
	MGO (0.1% S)	Low sulfur fuel	0.60	1.40	16.29	0.37	0.53	0.42	(2)
Tugboat Main Engines (Medium Speed Diesel)	MGO (0.19% S)	2001	0.37	1.87	12.80	0.81	0.49	0.45	(3)
	MGO (0.19% S)	2005	0.37	1.87	12.18	0.81	0.49	0.45	(3)
	CARB (500 ppm S)	2006	0.27	1.87	11.32	0.21	0.37	0.34	(3,4)
	CARB (15 ppm S)	2007	0.27	1.87	11.32	0.01	0.35	0.32	(3,4)
	CARB (15 ppm S)	2015	0.27	1.87	10.04	0.01	0.35	0.32	(3,4)
	CARB (15 ppm S)	2030	0.27	1.87	7.47	0.01	0.33	0.31	(3,4)
Auxiliary Engine (g/kW-hr)									
OGV Auxiliary Engines	Residual Oil (4.5% S)	Worst case fuel	0.40	1.10	14.70	20.43	2.07	1.66	(1)
	Residual Oil (2.7% S)	Current in-use average	0.40	1.10	14.70	12.26	1.50	1.20	(2)
	MDO (0.5% S)	Low sulfur fuel	0.40	1.10	13.90	2.17	0.30	0.24	(2)
	MGO (0.2% S)	Low sulfur fuel	0.40	1.10	13.90	0.87	0.28	0.22	(2)
	MGO (0.1% S)	Low sulfur fuel	0.40	1.10	13.90	0.43	0.27	0.22	(2)
Tugboat Auxiliary Engines (High Speed Diesel)	MGO (0.19% S)	2001	0.27	1.67	10.06	0.84	0.46	0.45	(3)
	MGO (0.19% S)	2005	0.27	1.67	9.82	0.84	0.46	0.44	(3)
	CARB (500 ppm S)	2006	0.19	1.67	9.14	0.22	0.34	0.33	(3,4)
	CARB (15 ppm S)	2007	0.19	1.67	9.14	0.01	0.33	0.32	(3,4)
	CARB (15 ppm S)	2015	0.19	1.67	8.91	0.01	0.33	0.32	(3,4)
	CARB (15 ppm S)	2030	0.19	1.67	6.80	0.01	0.28	0.27	(3,4)
Auxiliary Boiler (kg/tonne fuel)									
Auxiliary Boilers	Residual Oil (4.5% S)	Worst case fuel	0.33	0.66	6.89	90.00	3.62	2.90	(1)
	Residual Oil (2.7% S)	Current in-use average	0.33	0.66	6.89	54.00	2.62	2.10	(2)
	MDO (0.5% S)	Low sulfur fuel	0.33	0.66	6.20	10.00	1.02	0.82	(2)
	MGO (0.2% S)	Low sulfur fuel	0.33	0.66	6.20	4.00	0.94	0.76	(2)
	MGO (0.1% S)	Low sulfur fuel	0.33	0.66	6.20	2.00	0.92	0.73	(2)

(1) The 4.5% sulfur content represents the current worldwide cap. The PM emission factors were adjusted upward from the 2.7% S emission factor using the EPA's direct sulfate PM content method (EPA, December 3, 2004).

(2) Source: POLA 2005 Emission Inventory Report.

(3) Composite EFs are based on the distribution of engine sizes and model years in the POLA tugboat fleet. The distribution for year 2005 was based on a survey by Starcrest. The distribution of engine model years for other study years was estimated based on CARB default marine engine lifetimes.

(4) Fuel sulfur content regulated by CCR Title 13, Division 3, Chapter 5, Article 2, Section 2281.

Table E1.2-PP-13. Emission Factors for AMP Electricity Consumption

<i>Emission Source</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Electricity Consumption Emissions (lb/MW-hr)	0.01	0.20	1.15	0.12	0.04	0.04

Source: SCAQMD CEQA Air Quality Handbook, Tbl. A9-11-B.

Table E1.2-PP-14. Fuel Correction Factors for Ship Main Engines, Auxiliary Engines, Boilers

<i>Fuel Type</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
HFO (1.5% S)	1.00	1.00	1.00	n/a	0.82	0.82
MDO (1.5% S)	1.00	1.00	0.90	n/a	0.47	0.47
MGO (0.5% S)	1.00	1.00	0.90	n/a	0.39	0.39
MGO (0.2% S)	1.00	1.00	0.90	n/a	0.36	0.36
MGO (0.1% S)	1.00	1.00	0.90	n/a	0.35	0.35

Source: 2005 EI Table 2.15. The factors for MGO (0.2% S) were interpolated from the 0.5% S and 0.1% S factors.

Table E1.2-PP-15. Fuel Correction Factors for Tugboat Main & Auxiliary Engines

<i>Fuel Type</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
CARB On-Road Diesel	0.72	1.00	0.93	n/a	0.75	0.75
ULSD	0.72	1.00	0.93	n/a	0.72	0.72

Source: 2005 EI Table 3.8.

Table E1.2-PP-16. Low-Load EF Regression Factors for OGV Main Propulsion Engines

<i>Variable</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Exponent	1.5	1	1.5	0	1.5	1.5
Intercept	0.39	0.15	10.45	0	0.25	0.25
Coefficient	0.0667	0.8378	0.1255	1	0.0059	0.0059
Ref. EF @ 20% Load	1.136	4.339	11.853	1.000	0.316	0.316

Source: 2005 EI Table 2.8. Factor = Coefficient x Load Factor^{Exponent} + Intercept. Factors are normalized by dividing by the factor @ 20% load.

**Table E1.2-PP-17. Vessel Speed Reduction Program (VSRP)
Historical Compliance Rates for China Shipping Line (Unmitigated)**

<i>Year</i>	<i>Compliance Rate</i>
Year 2005+	68.0%

Source: POLA staff (K. Maggay, 9/10/07).

Note: (1) This is the historical average compliance rate for China Shipping for calendar year 2005, from 20 nm to the PA. This rate is assumed to remain constant beyond 2005.

Table E1.2-PP-18. Annual Emissions from OGV Main Engine - Proposed Project

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.53	1.24	16.03	9.33	1.33	1.06
Containerships 5,000 - 6,000 TEU	2.32	5.42	70.11	40.79	5.81	4.65
Containerships 3,000 - 5,000 TEU	0.91	2.11	27.32	15.89	2.26	1.81
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.8	8.8	113.5	66.0	9.4	7.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.86	4.34	56.11	32.64	4.65	3.72
Containerships 5,000 - 6,000 TEU	4.07	9.49	122.70	71.38	10.17	8.13
Containerships 3,000 - 5,000 TEU	1.06	2.47	31.87	18.54	2.64	2.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.0	16.3	210.7	122.6	17.5	14.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.02	2.39	30.91	17.98	2.56	2.05
Containerships 8,000 - 9,000 TEU	2.99	6.98	90.18	52.46	7.47	5.98
Containerships 5,000 - 6,000 TEU	4.62	10.78	139.35	81.07	11.55	9.24
Containerships 3,000 - 5,000 TEU	0.95	2.22	28.69	16.69	2.38	1.90
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.6	22.4	289.1	168.2	24.0	19.2

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-PP-19. Annual Emissions from OGV Main Engine - Proposed Project

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.46	1.03	11.07	6.08	0.96	0.77
Containerships 5,000 - 6,000 TEU	2.02	4.52	48.43	26.57	4.19	3.35
Containerships 3,000 - 5,000 TEU	0.74	1.69	19.54	11.02	1.66	1.33
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.2	7.2	79.0	43.7	6.8	5.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.62	3.61	38.76	21.26	3.35	2.68
Containerships 5,000 - 6,000 TEU	3.54	7.90	84.75	46.50	7.33	5.86
Containerships 3,000 - 5,000 TEU	0.86	1.98	22.80	12.86	1.93	1.55
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.0	13.5	146.3	80.6	12.6	10.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.89	1.99	21.35	11.71	1.85	1.48
Containerships 8,000 - 9,000 TEU	2.60	5.81	62.29	34.17	5.39	4.31
Containerships 5,000 - 6,000 TEU	4.02	8.97	96.25	52.81	8.32	6.66
Containerships 3,000 - 5,000 TEU	0.77	1.78	20.52	11.57	1.74	1.39
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	18.6	200.4	110.3	17.3	13.8

Assumes VSRP compliance at the 2005 level.

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-PP-20. Annual Emissions from OGV Main Engine - Proposed Project

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.38	2.79	1.24	0.27	0.22
Containerships 5,000 - 6,000 TEU	0.84	1.66	12.21	5.43	1.19	0.95
Containerships 3,000 - 5,000 TEU	0.28	0.60	5.05	2.50	0.47	0.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	2.6	20.1	9.2	1.9	1.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.67	1.33	9.77	4.35	0.96	0.76
Containerships 5,000 - 6,000 TEU	1.47	2.91	21.37	9.51	2.09	1.67
Containerships 3,000 - 5,000 TEU	0.33	0.70	5.89	2.92	0.54	0.43
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	4.9	37.0	16.8	3.6	2.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.37	0.73	5.38	2.40	0.53	0.42
Containerships 8,000 - 9,000 TEU	1.08	2.14	15.71	6.99	1.54	1.23
Containerships 5,000 - 6,000 TEU	1.66	3.30	24.27	10.80	2.37	1.90
Containerships 3,000 - 5,000 TEU	0.29	0.63	5.30	2.63	0.49	0.39
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.4	6.8	50.7	22.8	4.9	3.9

Assumes main engines use residual fuel with 2.7% sulfur content.

**Table E1.2-PP-21. Annual Emissions from OGV Main Engine - Proposed Project
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.60	0.08	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.39	0.43	2.63	0.37	0.34	0.28
Containerships 3,000 - 5,000 TEU	0.12	0.16	0.91	0.17	0.12	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	4.1	0.6	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.31	0.35	2.11	0.30	0.28	0.22
Containerships 5,000 - 6,000 TEU	0.68	0.76	4.61	0.65	0.60	0.48
Containerships 3,000 - 5,000 TEU	0.14	0.18	1.07	0.20	0.13	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	1.3	7.8	1.1	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.17	0.19	1.16	0.16	0.15	0.12
Containerships 8,000 - 9,000 TEU	0.50	0.56	3.39	0.48	0.44	0.35
Containerships 5,000 - 6,000 TEU	0.77	0.86	5.23	0.74	0.68	0.55
Containerships 3,000 - 5,000 TEU	0.13	0.16	0.96	0.18	0.12	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	1.8	10.7	1.6	1.4	1.1

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-PP-22. Annual Emissions from OGV Main Engine - Proposed Project

Harbor Transit - Outbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.09	0.51	0.11	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.28	0.38	2.22	0.48	0.27	0.22
Containerships 3,000 - 5,000 TEU	0.09	0.14	0.81	0.22	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.6	3.5	0.8	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.23	0.30	1.77	0.39	0.22	0.17
Containerships 5,000 - 6,000 TEU	0.49	0.67	3.88	0.85	0.47	0.38
Containerships 3,000 - 5,000 TEU	0.11	0.16	0.94	0.26	0.11	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.8	1.1	6.6	1.5	0.8	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.12	0.17	0.98	0.21	0.12	0.10
Containerships 8,000 - 9,000 TEU	0.36	0.49	2.85	0.62	0.35	0.28
Containerships 5,000 - 6,000 TEU	0.56	0.76	4.41	0.96	0.54	0.43
Containerships 3,000 - 5,000 TEU	0.10	0.14	0.85	0.23	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	1.6	9.1	2.0	1.1	0.9

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-PP-23. Annual Emissions from OGV Main Engine - Proposed Project

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.05	0.29	0.04	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.19	0.20	1.25	0.16	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.45	0.06	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.0	0.2	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.15	0.16	1.00	0.13	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.33	0.35	2.19	0.28	0.29	0.23
Containerships 3,000 - 5,000 TEU	0.08	0.08	0.52	0.07	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.6	3.7	0.5	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.09	0.55	0.07	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.24	0.26	1.61	0.20	0.21	0.17
Containerships 5,000 - 6,000 TEU	0.38	0.40	2.49	0.31	0.33	0.26
Containerships 3,000 - 5,000 TEU	0.07	0.08	0.47	0.06	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.8	0.8	5.1	0.6	0.7	0.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-PP-24. Annual Emissions from OGV Main Engine - Proposed Project

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.61	0.08	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.41	0.43	2.68	0.34	0.36	0.28
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.96	0.12	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	4.3	0.5	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.32	0.35	2.15	0.27	0.28	0.23
Containerships 5,000 - 6,000 TEU	0.71	0.76	4.69	0.59	0.62	0.50
Containerships 3,000 - 5,000 TEU	0.17	0.18	1.12	0.14	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	1.3	8.0	1.0	1.1	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.18	0.19	1.18	0.15	0.16	0.13
Containerships 8,000 - 9,000 TEU	0.52	0.56	3.45	0.43	0.46	0.37
Containerships 5,000 - 6,000 TEU	0.81	0.86	5.33	0.67	0.71	0.56
Containerships 3,000 - 5,000 TEU	0.15	0.16	1.01	0.13	0.13	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.7	1.8	11.0	1.4	1.5	1.2

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-PP-25. Max Daily Emissions from OGV Main Engine - Proposed Project

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	88.3	206.1	2,665.1	2,584.1	293.2	234.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	54.7	127.7	1,651.2	1,601.0	181.7	145.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	92.0	214.6	2,774.8	2,690.5	305.3	244.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-PP-26. Max Daily Emissions from OGV Main Engine - Proposed Project

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	97.6	227.7	2,943.7	2,854.2	323.9	259.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	97.6	227.7	2,943.7	2,854.2	323.9	259.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	115.7	270.0	3,491.1	3,385.0	384.1	307.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	71.7	167.3	2,163.0	2,097.2	238.0	190.4
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	120.5	281.1	3,634.8	3,524.3	399.9	319.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-PP-27. Max Daily Emissions from OGV Main Engine - Proposed Project

Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	391.4	290.3	50.8	40.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	391.4	290.3	50.8	40.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	31.8	63.2	464.2	344.2	60.2	48.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	19.7	39.2	287.6	213.3	37.3	29.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.2	65.8	483.3	358.4	62.7	50.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-PP-28. Max Daily Emissions from OGV Main Engine - Proposed Project
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	18.3	20.5	124.0	29.1	21.5	17.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.3	20.5	124.0	29.1	21.5	17.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-PP-29. Max Daily Emissions from OGV Main Engine - Proposed Project
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-30. Max Daily Emissions from OGV Main Engine - Proposed Project

Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	8.9	9.6	58.9	12.4	10.4	8.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	58.9	12.4	10.4	8.3

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes turning occurs during arrivals only.

Table E1.2-PP-31. Max Daily Emissions from OGV Main Engine - Proposed Project

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	86.0	18.0	15.1	12.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	86.0	18.0	15.1	12.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	15.4	16.5	101.9	21.4	17.9	14.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	9.6	10.2	63.2	13.2	11.1	8.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	16.1	17.2	106.1	22.3	18.7	14.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-32. Annual Emissions from OGV Auxiliary Engines - Proposed Project

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.43	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.17	1.81	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.68	0.57	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.3	2.7	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.51	1.26	0.15	0.12
Containerships 5,000 - 6,000 TEU	0.10	0.28	3.80	3.17	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.79	0.66	0.08	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.1	5.1	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.06	0.77	0.65	0.08	0.06
Containerships 8,000 - 9,000 TEU	0.07	0.18	2.42	2.02	0.25	0.20
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.32	3.60	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.71	0.59	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	8.2	6.9	0.8	0.7

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-PP-33. Annual Emissions from OGV Auxiliary Engines - Proposed Project

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.93	0.78	0.10	0.08
Containerships 5,000 - 6,000 TEU	0.13	0.35	4.70	3.92	0.48	0.38
Containerships 3,000 - 5,000 TEU	0.04	0.10	1.37	1.15	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	7.0	5.8	0.7	0.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.24	3.26	2.72	0.33	0.27
Containerships 5,000 - 6,000 TEU	0.22	0.62	8.23	6.86	0.84	0.67
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.60	1.34	0.16	0.13
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.0	13.1	10.9	1.3	1.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.05	0.13	1.68	1.40	0.17	0.14
Containerships 8,000 - 9,000 TEU	0.14	0.39	5.24	4.37	0.53	0.43
Containerships 5,000 - 6,000 TEU	0.25	0.70	9.34	7.79	0.95	0.76
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.44	1.20	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	1.3	17.7	14.8	1.8	1.4

Assumes VSRP compliance at the 2005 level.

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-PP-34. Annual Emissions from OGV Auxiliary Engines - Proposed Project

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.55	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.78	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.80	0.51	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.7	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.15	1.93	1.24	0.15	0.12
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.86	3.14	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.03	0.07	0.93	0.60	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.7	5.0	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	0.99	0.64	0.08	0.06
Containerships 8,000 - 9,000 TEU	0.09	0.24	3.10	2.00	0.25	0.20
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.52	3.56	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.84	0.54	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.4	6.7	0.8	0.7

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-PP-35. Annual Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.56	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.77	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.49	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.6	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.15	1.96	1.26	0.16	0.12
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.85	3.13	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.88	0.57	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.7	5.0	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	1.01	0.65	0.08	0.06
Containerships 8,000 - 9,000 TEU	0.09	0.24	3.15	2.03	0.25	0.20
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.50	3.55	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.79	0.51	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.5	6.7	0.8	0.7

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-36. Annual Emissions from OGV Auxiliary Engines - Proposed Project Harbor Transit - Outbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.04	0.49	0.32	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.42	1.56	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.66	0.43	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	2.3	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.71	1.11	0.14	0.11
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.24	2.74	0.34	0.27
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.77	0.50	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.7	4.3	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.88	0.57	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.76	1.78	0.22	0.18
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.82	3.11	0.38	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.69	0.45	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	9.1	5.9	0.7	0.6

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-37. Annual Emissions from OGV Auxiliary Engines - Proposed Project Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.29	0.83	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.23	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.9	1.2	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.91	0.59	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.06	0.17	2.26	1.46	0.18	0.14
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.41	0.27	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	2.3	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.04	0.47	0.30	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.47	0.95	0.12	0.09
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.57	1.66	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.37	0.24	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.9	3.1	0.4	0.3

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-38. Annual Emissions from OGV Auxiliary Engines - Proposed Project

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.56	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.77	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.49	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.6	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.15	1.96	1.26	0.16	0.12
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.85	3.13	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.88	0.57	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.7	5.0	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	1.01	0.65	0.08	0.06
Containerships 8,000 - 9,000 TEU	0.09	0.24	3.15	2.03	0.25	0.20
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.50	3.55	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.79	0.51	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.5	6.7	0.8	0.7

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-39. Annual Emissions from OGV Auxiliary Engines - Proposed Project

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.36	6.48	85.25	54.99	6.79	5.43
Containerships 3,000 - 5,000 TEU	0.30	0.82	10.77	6.95	0.86	0.69
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.3	96.0	61.9	7.6	6.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.52	1.43	18.84	12.15	1.50	1.20
Containerships 5,000 - 6,000 TEU	1.87	5.14	67.57	43.59	5.38	4.30
Containerships 3,000 - 5,000 TEU	0.50	1.38	18.18	11.72	1.45	1.16
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	8.0	104.6	67.5	8.3	6.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.68	4.62	60.77	39.20	4.84	3.87
Containerships 5,000 - 6,000 TEU	3.02	8.31	109.23	70.46	8.70	6.96
Containerships 3,000 - 5,000 TEU	0.54	1.49	19.64	12.67	1.56	1.25
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.2	14.4	189.6	122.3	15.1	12.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.79	2.18	28.68	18.50	2.28	1.83
Containerships 8,000 - 9,000 TEU	2.13	5.86	77.02	49.68	6.13	4.91
Containerships 5,000 - 6,000 TEU	2.73	7.50	98.63	63.62	7.85	6.28
Containerships 3,000 - 5,000 TEU	0.39	1.08	14.16	9.14	1.13	0.90
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.0	16.6	218.5	140.9	17.4	13.9

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-40. Annual Emissions from OGV Auxiliary Engines - Proposed Project

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.38	0.89	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.21	0.56	7.42	4.78	0.59	0.47
Containerships 3,000 - 5,000 TEU	0.07	0.20	2.66	1.72	0.21	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.5	7.4	0.9	0.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.37	4.82	3.11	0.38	0.31
Containerships 5,000 - 6,000 TEU	0.36	0.99	12.98	8.37	1.03	0.83
Containerships 3,000 - 5,000 TEU	0.09	0.24	3.11	2.00	0.25	0.20
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.6	20.9	13.5	1.7	1.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.07	0.19	2.48	1.60	0.20	0.16
Containerships 8,000 - 9,000 TEU	0.21	0.59	7.75	5.00	0.62	0.49
Containerships 5,000 - 6,000 TEU	0.41	1.12	14.74	9.51	1.17	0.94
Containerships 3,000 - 5,000 TEU	0.08	0.21	2.80	1.80	0.22	0.18
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.8	2.1	27.8	17.9	2.2	1.8

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-41. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.9	5.2	69.6	96.8	9.8	7.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	5.2	69.6	96.8	9.8	7.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.7	76.2	105.9	10.7	8.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.7	76.2	105.9	10.7	8.6

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-PP-42. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	91.2	126.8	12.9	10.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	91.2	126.8	12.9	10.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.5	99.8	138.7	14.1	11.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.5	99.8	138.7	14.1	11.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

**Table E1.2-PP-43. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	90.5	125.8	12.8	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	90.5	125.8	12.8	10.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.4	99.0	137.6	14.0	11.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.4	99.0	137.6	14.0	11.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-PP-44. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-PP-45. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-46. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-PP-47. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.5	99.8	138.7	14.1	11.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.5	99.8	138.7	14.1	11.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-48. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 5,000 - 6,000 TEU	33.2	91.2	1,218.5	1,693.5	171.8	137.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	69.6	191.3	2,556.7	3,553.4	360.4	288.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	33.2	91.2	1,218.5	1,693.5	171.8	137.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	69.6	191.3	2,556.7	3,553.4	360.4	288.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur and no AMP.

Table E1.2-PP-49. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-PP-50. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-PP-51. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-PP-52. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.004	0.009	0.090	0.557	0.029	0.023
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.022	0.133	0.007	0.006
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.022	0.138	0.007	0.006
Containerships 5,000 - 6,000 TEU	0.007	0.013	0.134	0.828	0.043	0.035
Containerships 3,000 - 5,000 TEU	0.003	0.007	0.067	0.414	0.022	0.017
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.4	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.004	0.008	0.078	0.483	0.025	0.020
Containerships 5,000 - 6,000 TEU	0.012	0.023	0.235	1.449	0.076	0.061
Containerships 3,000 - 5,000 TEU	0.004	0.008	0.078	0.483	0.025	0.020
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	2.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.002	0.004	0.040	0.248	0.013	0.010
Containerships 8,000 - 9,000 TEU	0.006	0.012	0.126	0.776	0.041	0.033
Containerships 5,000 - 6,000 TEU	0.013	0.026	0.267	1.645	0.086	0.069
Containerships 3,000 - 5,000 TEU	0.003	0.007	0.070	0.435	0.023	0.018
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	3.1	0.2	0.1

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-PP-53. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.006	0.036	0.002	0.002
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.219	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.021	0.128	0.007	0.005
Containerships 5,000 - 6,000 TEU	0.003	0.006	0.062	0.383	0.020	0.016
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.021	0.128	0.007	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.6	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.001	0.001	0.011	0.066	0.003	0.003
Containerships 8,000 - 9,000 TEU	0.002	0.003	0.033	0.205	0.011	0.009
Containerships 5,000 - 6,000 TEU	0.003	0.007	0.071	0.435	0.023	0.018
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.019	0.115	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.8	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-PP-54. Annual Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.021	0.129	0.007	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.005	0.031	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.005	0.032	0.002	0.001
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.031	0.192	0.010	0.008
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.016	0.096	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.018	0.112	0.006	0.005
Containerships 5,000 - 6,000 TEU	0.003	0.005	0.054	0.335	0.018	0.014
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.112	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.6	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.009	0.057	0.003	0.002
Containerships 8,000 - 9,000 TEU	0.001	0.003	0.029	0.180	0.009	0.008
Containerships 5,000 - 6,000 TEU	0.003	0.006	0.062	0.381	0.020	0.016
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.016	0.101	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-55. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.011	0.069	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.003	0.016	0.001	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.003	0.017	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.017	0.102	0.005	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.010	0.060	0.003	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.029	0.179	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.010	0.060	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.005	0.031	0.002	0.001
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.016	0.096	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.033	0.203	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.054	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-56. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.006	0.036	0.002	0.002
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.219	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.021	0.128	0.007	0.005
Containerships 5,000 - 6,000 TEU	0.003	0.006	0.062	0.383	0.020	0.016
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.021	0.128	0.007	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.6	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.001	0.001	0.011	0.066	0.003	0.003
Containerships 8,000 - 9,000 TEU	0.002	0.003	0.033	0.205	0.011	0.009
Containerships 5,000 - 6,000 TEU	0.003	0.007	0.071	0.435	0.023	0.018
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.019	0.115	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.8	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-57. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.164	0.328	3.345	20.632	1.080	0.864
Containerships 3,000 - 5,000 TEU	0.029	0.058	0.588	3.630	0.190	0.152
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.033	0.065	0.664	4.093	0.214	0.171
Containerships 5,000 - 6,000 TEU	0.130	0.260	2.651	16.354	0.856	0.685
Containerships 3,000 - 5,000 TEU	0.049	0.097	0.993	6.126	0.321	0.257
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.3	26.6	1.4	1.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.105	0.210	2.140	13.201	0.691	0.553
Containerships 5,000 - 6,000 TEU	0.210	0.420	4.286	26.438	1.384	1.107
Containerships 3,000 - 5,000 TEU	0.053	0.105	1.073	6.618	0.346	0.277
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.7	7.5	46.3	2.4	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.050	0.099	1.010	6.229	0.326	0.261
Containerships 8,000 - 9,000 TEU	0.133	0.266	2.712	16.731	0.876	0.701
Containerships 5,000 - 6,000 TEU	0.190	0.380	3.870	23.872	1.250	1.000
Containerships 3,000 - 5,000 TEU	0.038	0.076	0.774	4.774	0.250	0.200
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.8	8.4	51.6	2.7	2.2

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-PP-58. Annual Emissions from OGV Auxiliary Boilers - Proposed Project

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.010	0.019	0.196	1.208	0.063	0.051
Containerships 3,000 - 5,000 TEU	0.002	0.005	0.047	0.288	0.015	0.012
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.002	0.005	0.048	0.299	0.016	0.013
Containerships 5,000 - 6,000 TEU	0.014	0.029	0.291	1.795	0.094	0.075
Containerships 3,000 - 5,000 TEU	0.007	0.014	0.145	0.897	0.047	0.038
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	3.0	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.008	0.017	0.170	1.047	0.055	0.044
Containerships 5,000 - 6,000 TEU	0.025	0.050	0.509	3.141	0.164	0.132
Containerships 3,000 - 5,000 TEU	0.008	0.017	0.170	1.047	0.055	0.044
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.8	5.2	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.004	0.009	0.087	0.538	0.028	0.023
Containerships 8,000 - 9,000 TEU	0.013	0.027	0.273	1.683	0.088	0.070
Containerships 5,000 - 6,000 TEU	0.028	0.057	0.578	3.567	0.187	0.149
Containerships 3,000 - 5,000 TEU	0.007	0.015	0.153	0.942	0.049	0.039
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	6.7	0.4	0.3

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-PP-59. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Fairway: AQMD Overwater Boundary to 20-Mile**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-PP-60. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-PP-61. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-PP-62. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-PP-63. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-64. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-PP-65. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-66. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.6	9.2	96.2	1,257.8	50.6	40.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	9.2	96.2	1,257.8	50.6	40.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 5,000 - 6,000 TEU	2.3	4.6	48.5	633.4	25.5	20.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	9.2	96.2	1,257.8	50.6	40.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.6	48.5	633.4	25.5	20.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	9.2	96.2	1,257.8	50.6	40.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-PP-67a. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-PP-67b. LNG Truck Mitigation Rates
Mitigated Project**

<i>Year</i>	<i>% Trucks</i>
Year 2005	0.0%
Year 2006	0.0%
Year 2007	0.0%
Year 2008	0.0%
Year 2009	0.0%
Year 2010	0.0%
Year 2011	0.0%
Year 2012	50.0%
Year 2013	50.0%
Year 2014	70.0%
Year 2015	70.0%
Year 2016	70.0%
Year 2017	70.0%
Year 2018	100.0%
Year 2019	100.0%
Year 2020	100.0%
Year 2021	100.0%
Year 2022	100.0%
Year 2023	100.0%
Year 2024	100.0%
Year 2025	100.0%
Year 2026	100.0%
Year 2027	100.0%
Year 2028	100.0%
Year 2029	100.0%
Year 2030+	100.0%

Table E1.2-PP-68. Annual Emissions from Tugboat Main Engine - Proposed Project

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.10	0.51	3.30	0.22	0.13	0.12
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.10	0.61	0.00	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.09	0.61	3.69	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	0.04	0.31	1.84	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.15	1.02	6.15	0.00	0.19	0.18
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.36	1.91	0.00	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.15	1.07	5.72	0.00	0.20	0.18
Containerships 3,000 - 5,000 TEU	0.05	0.36	1.91	0.00	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.26	1.78	9.53	0.01	0.33	0.31
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.18	0.73	0.00	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.08	0.57	2.28	0.00	0.10	0.09
Containerships 5,000 - 6,000 TEU	0.17	1.21	4.84	0.00	0.22	0.20
Containerships 3,000 - 5,000 TEU	0.05	0.32	1.28	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.33	2.29	9.12	0.01	0.41	0.38

Table E1.2-PP-69. Max Daily Emissions from Tugboat Main Engine - Proposed Project

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	118.20	0.07	3.67	3.37
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	118.2	0.1	3.7	3.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	104.8	0.1	3.7	3.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	78.0	0.1	3.5	3.2

Table E1.2-PP-70. Annual Emissions from Tugboat Auxiliary Engines - Proposed Project

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.04	0.21	0.02	0.01	0.01
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.23	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.12	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.07	0.39	0.00	0.01	0.01
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.03	0.13	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.08	0.40	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.03	0.13	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.13	0.67	0.00	0.02	0.02
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.04	0.16	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.09	0.35	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.16	0.65	0.00	0.03	0.03

Table E1.2-PP-71. Max Daily Emissions from Tugboat Auxiliary Engines - Proposed Project

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	7.51	0.01	0.27	0.26
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.5	0.0	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.3	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	5.6	0.0	0.2	0.2

Table E1.2-PP-72. Summary of Annual Marine Vessel Emissions without Mitigation

Proposed Project

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	2.8	7.7	99.9	86.2	8.9	7.1
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	8.6	20.2	235.8	162.8	20.8	16.6
Project Year 2010						
Ships - AQMD to 20 mile	3.9	9.0	116.7	68.7	9.7	7.8
Ships - 20 mile to PA	3.4	7.8	86.0	49.5	7.5	6.0
Ships - PA	1.4	3.0	24.4	13.2	2.3	1.9
Ships - Harbor Transit	1.3	1.9	15.4	7.1	1.6	1.3
Ships - Turning & Docking	1.1	1.5	12.3	5.2	1.3	1.1
Ships - Anchoring	0.3	0.9	11.9	10.4	1.1	0.9
Ships - Hoteling	3.1	8.4	108.9	94.0	9.7	7.8
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.1	6.5	0.0	0.2	0.2
Total	14.7	33.5	382.3	248.1	33.5	26.8
Project Year 2015						
Ships - AQMD to 20 mile	7.1	16.8	216.8	127.7	18.1	14.5
Ships - 20 mile to PA	6.4	14.5	159.4	91.5	13.9	11.2
Ships - PA	2.7	5.6	45.1	24.2	4.3	3.5
Ships - Harbor Transit	2.4	3.5	29.0	13.1	3.0	2.4
Ships - Turning & Docking	2.1	2.8	23.1	9.7	2.5	2.0
Ships - Anchoring	0.6	1.7	21.8	18.7	1.9	1.6
Ships - Hoteling	5.6	15.2	197.1	168.6	17.5	14.0
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.3	1.9	10.2	0.0	0.4	0.3
Total	27.2	61.8	702.5	453.5	61.7	49.4
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	9.8	23.0	297.3	175.1	24.8	19.8
Ships - 20 mile to PA	8.8	19.9	218.1	125.0	19.1	15.3
Ships - PA	3.7	7.6	61.6	32.7	5.9	4.7
Ships - Harbor Transit	3.3	4.9	39.7	17.8	4.1	3.3
Ships - Turning & Docking	2.9	3.8	31.6	13.1	3.4	2.7
Ships - Anchoring	0.8	2.2	28.9	24.6	2.6	2.1
Ships - Hoteling	6.5	17.4	226.9	192.5	20.1	16.1
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.3	2.4	9.8	0.0	0.4	0.4
Total	36.0	81.2	913.9	580.8	80.5	64.4

Table E1.2-PP-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation

Proposed Project

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	76	179	2,317	2,276	257	206
Ships - 20 mile to PA	100	235	3,035	2,981	337	269
Ships - PA	30	60	486	474	66	53
Ships - Harbor Transit	26	39	327	309	51	41
Ships - Turning & Docking	23	30	260	233	42	33
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	70	190	2,516	4,621	392	313
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	126	0	4	4
Total	328	755	9,066	10,893	1,148	919
Project Year 2015						
Ships - AQMD to 20 mile	90	212	2,741	2,690	304	243
Ships - 20 mile to PA	118	278	3,591	3,524	398	319
Ships - PA	35	71	568	540	77	61
Ships - Harbor Transit	31	46	377	343	59	47
Ships - Turning & Docking	28	37	310	265	50	40
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	74	200	2,653	4,811	411	329
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	112	0	4	4
Total	380	864	10,352	12,173	1,303	1,043
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	94	220	2,851	2,796	316	253
Ships - 20 mile to PA	123	289	3,735	3,663	414	331
Ships - PA	36	74	587	554	79	63
Ships - Harbor Transit	33	47	386	345	61	49
Ships - Turning & Docking	29	38	318	267	51	41
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	74	200	2,653	4,811	411	329
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	84	0	4	3
Total	392	889	10,612	12,437	1,336	1,069

Table E1.2-PP-74. AMP Compliance Rates

Proposed Project with Mitigation

Project Year	Compliance Rate
Project Year 2005	60%
Project Year 2006	70%
Project Year 2008	70%
Project Year 2009	70%
Project Year 2010	90%
Project Year 2011	100%
Project Year 2012	100%
Project Year 2015	100%
Project Year 2020	100%
Project Year 2030+	100%

Source: Stipulated Judgment & Expanded AMP.

Table E1.2-PP-75. Vessel Speed Reduction Program (VSRP) Compliance Rates

Proposed Project with Mitigation

Year	Compliance Rate
Year 2005 (1)	68.0%
Year 2009+ (2)	100.0%

Notes: (1) This is the historical average compliance rate for CS for 2005 from 20 nm to the PA.

VSR was not observed beyond 20 nm. Source: POLA staff (K. Maggay, 2007).

(2) The VSR mitigation measure starting in 2009 applies from 40 nm to the PA.

Table E1.2-PP-76. OGV Main Engine Slide Valve Compliance Rates

Proposed Project with Mitigation

<i>Year</i>	<i>Compliance Rate</i>
Year 2005	0.0%
Year 2009	25.0%
Year 2010	50.0%
Year 2012	75.0%
Year 2014	100.0%
Year 2015+	100.0%

Table E1.2-PP-77. Emission Reduction Factors for OGV Main Engine Slide Valves

<i>Emission Source</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Fairway, Precautionary Area			30%		25%	25%
Harbor Transit, Turning, Docking			30%		25%	25%

Source: POLA 2005 Emission Inventory Report, Section 2.5.12 (pg. 81).

Table E1.2-PP-78. OGV Main Engine Fuel Usage

Proposed Project with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-PP-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit

Proposed Project with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-PP-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling Proposed Project with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	71%	29%		
Project Year 2007	71%	29%		
Project Year 2009	50%	20%	30%	
Project Year 2010	36%	15%	50%	
Project Year 2011	36%	15%	50%	
Project Year 2012	36%	15%	50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-PP-81. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.27	0.58	3.95	1.30	0.27	0.21
Containerships 5,000 - 6,000 TEU	1.18	2.52	17.26	5.69	1.17	0.94
Containerships 3,000 - 5,000 TEU	0.40	0.91	7.33	2.62	0.47	0.38
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.8	4.0	28.5	9.6	1.9	1.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.94	2.01	10.78	0.60	0.43	0.34
Containerships 5,000 - 6,000 TEU	2.06	4.40	23.56	1.31	0.93	0.74
Containerships 3,000 - 5,000 TEU	0.47	1.06	6.68	0.40	0.25	0.20
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.5	7.5	41.0	2.3	1.6	1.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.52	1.11	5.94	0.33	0.23	0.19
Containerships 8,000 - 9,000 TEU	1.51	3.24	17.32	0.96	0.68	0.55
Containerships 5,000 - 6,000 TEU	2.34	5.00	26.76	1.49	1.06	0.84
Containerships 3,000 - 5,000 TEU	0.42	0.95	6.01	0.36	0.23	0.18
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.8	10.3	56.0	3.1	2.2	1.8

Mitigation measures include VSR, slide valves, low sulfur fuel.

**Table E1.2-PP-82. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.35	0.75	5.17	1.70	0.35	0.28
Containerships 5,000 - 6,000 TEU	1.54	3.30	22.61	7.45	1.53	1.23
Containerships 3,000 - 5,000 TEU	0.53	1.19	9.61	3.43	0.62	0.50
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.4	5.2	37.4	12.6	2.5	2.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.23	2.64	14.12	0.78	0.56	0.45
Containerships 5,000 - 6,000 TEU	2.69	5.77	30.87	1.71	1.22	0.97
Containerships 3,000 - 5,000 TEU	0.61	1.39	8.74	0.53	0.33	0.26
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.5	9.8	53.7	3.0	2.1	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.68	1.45	7.78	0.43	0.31	0.25
Containerships 8,000 - 9,000 TEU	1.98	4.24	22.69	1.26	0.89	0.72
Containerships 5,000 - 6,000 TEU	3.06	6.55	35.06	1.95	1.38	1.11
Containerships 3,000 - 5,000 TEU	0.55	1.25	7.87	0.47	0.30	0.24
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.3	13.5	73.4	4.1	2.9	2.3

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-PP-83. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.38	2.25	0.66	0.16	0.13
Containerships 5,000 - 6,000 TEU	0.84	1.66	9.86	2.91	0.71	0.57
Containerships 3,000 - 5,000 TEU	0.28	0.60	4.08	1.34	0.28	0.22
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	2.6	16.2	4.9	1.1	0.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.67	1.33	6.16	0.31	0.26	0.21
Containerships 5,000 - 6,000 TEU	1.47	2.91	13.46	0.67	0.56	0.45
Containerships 3,000 - 5,000 TEU	0.33	0.70	3.71	0.21	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	4.9	23.3	1.2	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.37	0.73	3.39	0.17	0.14	0.11
Containerships 8,000 - 9,000 TEU	1.08	2.14	9.90	0.49	0.41	0.33
Containerships 5,000 - 6,000 TEU	1.66	3.30	15.29	0.76	0.64	0.51
Containerships 3,000 - 5,000 TEU	0.29	0.63	3.34	0.18	0.13	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.4	6.8	31.9	1.6	1.3	1.1

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-PP-84. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.49	0.05	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.39	0.43	2.13	0.20	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.12	0.16	0.74	0.09	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	3.4	0.3	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.31	0.35	1.33	0.02	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.68	0.76	2.90	0.05	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.14	0.18	0.67	0.01	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	1.3	4.9	0.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.17	0.19	0.73	0.01	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.50	0.56	2.13	0.03	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.77	0.86	3.30	0.05	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.13	0.16	0.60	0.01	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	1.8	6.8	0.1	0.4	0.3

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-PP-85. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.09	0.41	0.06	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.28	0.38	1.79	0.26	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.09	0.14	0.65	0.12	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.6	2.9	0.4	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.23	0.30	1.12	0.03	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.49	0.67	2.44	0.06	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.11	0.16	0.59	0.02	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.8	1.1	4.2	0.1	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.12	0.17	0.62	0.01	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.36	0.49	1.80	0.04	0.09	0.08
Containerships 5,000 - 6,000 TEU	0.56	0.76	2.78	0.07	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.10	0.14	0.53	0.02	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	1.6	5.7	0.1	0.3	0.2

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-PP-86. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.05	0.23	0.02	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.19	0.20	1.01	0.08	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.36	0.03	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	1.6	0.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.15	0.16	0.63	0.01	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.33	0.35	1.38	0.02	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.08	0.08	0.33	0.00	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.6	2.3	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.09	0.35	0.00	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.24	0.26	1.01	0.01	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.38	0.40	1.57	0.02	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.07	0.08	0.30	0.00	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.8	0.8	3.2	0.0	0.2	0.1

Mitigation measures include slide valves and low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-PP-87. Annual Emissions from OGV Main Engine - Proposed Project with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.50	0.04	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.41	0.43	2.17	0.18	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.78	0.06	0.08	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	3.4	0.3	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.32	0.35	1.35	0.02	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.71	0.76	2.96	0.04	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.17	0.18	0.71	0.01	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	1.3	5.0	0.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.18	0.19	0.74	0.01	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.52	0.56	2.17	0.03	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.81	0.86	3.36	0.05	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.64	0.01	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.7	1.8	6.9	0.1	0.4	0.3

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-PP-88. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.7	80.7	685.1	568.0	83.7	67.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.7	80.7	685.1	568.0	83.7	67.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	25.8	55.3	296.1	16.4	11.7	9.3
Containerships 5,000 - 6,000 TEU	18.8	40.3	215.8	12.0	8.5	6.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	44.7	95.7	511.8	28.4	20.2	16.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	27.7	59.3	317.1	17.6	12.5	10.0
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	18.8	40.3	215.8	12.0	8.5	6.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	46.5	99.6	532.9	29.6	21.0	16.8

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-PP-89. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	49.4	105.7	897.4	744.0	109.7	87.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	49.4	105.7	897.4	744.0	109.7	87.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.9	72.5	387.8	21.5	15.3	12.2
Containerships 5,000 - 6,000 TEU	24.7	52.8	282.7	15.7	11.2	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	58.5	125.3	670.5	37.2	26.4	21.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	36.3	77.6	415.4	23.1	16.4	13.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	24.7	52.8	282.7	15.7	11.2	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	60.9	130.5	698.1	38.7	27.5	22.0

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-PP-90. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	391.4	290.3	50.8	40.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	391.4	290.3	50.8	40.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	169.1	8.4	7.1	5.7
Containerships 5,000 - 6,000 TEU	13.4	26.6	123.3	6.1	5.2	4.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	31.8	63.2	292.4	14.5	12.3	9.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	19.7	39.2	181.2	9.0	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	123.3	6.1	5.2	4.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.2	65.8	304.5	15.1	12.8	10.2

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-PP-91. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	72.9	1.1	4.1	3.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	72.9	1.1	4.1	3.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	18.3	20.5	78.1	1.2	4.4	3.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.3	20.5	78.1	1.2	4.4	3.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-PP-92. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	44.8	1.1	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	44.8	1.1	2.3	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	44.8	1.1	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	44.8	1.1	2.3	1.9

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-PP-93. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	34.7	0.5	2.0	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	34.7	0.5	2.0	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	8.9	9.6	37.1	0.5	2.1	1.7
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	37.1	0.5	2.1	1.7

- Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.
(3) Assumes turning occurs during arrivals only.

Table E1.2-PP-94. Max Daily Emissions from OGV Main Engine - Proposed Project with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	86.0	18.0	15.1	12.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	86.0	18.0	15.1	12.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	37.1	0.5	2.1	1.7
Containerships 5,000 - 6,000 TEU	6.5	7.0	27.1	0.4	1.5	1.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	15.4	16.5	64.2	0.9	3.6	2.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	9.6	10.2	39.8	0.6	2.3	1.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	27.1	0.4	1.5	1.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	16.1	17.2	66.9	0.9	3.8	3.0

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-PP-95. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.82	0.38	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.14	1.90	0.26	0.21
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.19	0.55	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.1	2.8	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.22	2.79	0.17	0.06	0.04
Containerships 5,000 - 6,000 TEU	0.20	0.56	7.04	0.44	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.35	0.08	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.2	0.7	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.11	1.43	0.09	0.03	0.02
Containerships 8,000 - 9,000 TEU	0.13	0.35	4.48	0.28	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.23	0.63	8.00	0.50	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.03	0.10	1.21	0.08	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.2	15.1	0.9	0.3	0.2

Mitigation measures include VSR and low sulfur fuel.

**Table E1.2-PP-96. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.07	0.49	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.42	2.49	0.34	0.27
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.56	0.71	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	8.1	3.7	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.11	0.29	3.65	0.23	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.27	0.73	9.22	0.58	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.05	0.14	1.77	0.11	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.2	14.6	0.9	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.05	0.15	1.88	0.12	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.17	0.46	5.87	0.37	0.12	0.09
Containerships 5,000 - 6,000 TEU	0.30	0.83	10.48	0.65	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.05	0.13	1.59	0.10	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.6	19.8	1.2	0.4	0.3

Mitigation measures include VSR and low sulfur fuel.

Table E1.2-PP-97. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.54	0.19	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.72	0.98	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.78	0.28	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.0	1.5	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.15	1.85	0.12	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.67	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.03	0.07	0.89	0.06	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.4	0.5	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	0.95	0.06	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.09	0.24	2.97	0.19	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.31	0.33	0.11	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.81	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.0	0.6	0.2	0.2

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-98. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.55	0.20	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.72	0.98	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.74	0.27	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.0	1.4	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.15	1.88	0.12	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.66	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.85	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.4	0.5	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	0.97	0.06	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.09	0.24	3.03	0.19	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.29	0.33	0.11	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.76	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.0	0.6	0.2	0.2

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-99. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.04	0.48	0.17	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.38	0.85	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.65	0.23	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.5	1.3	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.65	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.07	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.74	0.05	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.5	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.85	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.65	0.17	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.63	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.67	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	8.8	0.5	0.2	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-PP-100. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.26	0.09	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.27	0.46	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.12	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.9	0.7	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.88	0.05	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.06	0.17	2.17	0.14	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.39	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.4	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.04	0.45	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.41	0.09	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.47	0.15	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.36	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.7	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-PP-101. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.55	0.20	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.72	0.98	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.74	0.27	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.0	1.4	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.15	1.88	0.12	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.66	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.85	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.4	0.5	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	0.97	0.06	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.09	0.24	3.03	0.19	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.29	0.33	0.11	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.76	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.0	0.6	0.2	0.2

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-102. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Hoteling**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.94	2.59	34.10	21.99	2.72	2.17
Containerships 3,000 - 5,000 TEU	0.12	0.33	4.31	2.78	0.34	0.27
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	2.9	38.4	24.8	3.1	2.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.14	1.85	0.66	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.19	0.51	6.62	2.38	0.33	0.27
Containerships 3,000 - 5,000 TEU	0.05	0.14	1.78	0.64	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.3	3.7	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Mitigation measures include AMP and low sulfur fuel (for non-AMP ships).

Table E1.2-PP-103. Annual Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.35	0.49	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.21	0.56	7.27	2.61	0.37	0.29
Containerships 3,000 - 5,000 TEU	0.07	0.20	2.61	0.94	0.13	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.2	4.0	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.37	4.63	0.29	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.36	0.99	12.47	0.78	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.09	0.24	2.98	0.19	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.6	20.1	1.3	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.07	0.19	2.38	0.15	0.05	0.04
Containerships 8,000 - 9,000 TEU	0.21	0.59	7.44	0.46	0.15	0.12
Containerships 5,000 - 6,000 TEU	0.41	1.12	14.16	0.88	0.28	0.23
Containerships 3,000 - 5,000 TEU	0.08	0.21	2.69	0.17	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.8	2.1	26.7	1.7	0.5	0.4

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-104. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	3.7	10.2	136.4	189.6	19.2	15.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.7	10.2	136.4	189.6	19.2	15.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.2	6.1	76.6	4.8	1.5	1.2
Containerships 5,000 - 6,000 TEU	1.9	5.1	64.5	4.0	1.3	1.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.1	11.2	141.1	8.8	2.8	2.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.2	6.1	76.6	4.8	1.5	1.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.9	5.1	64.5	4.0	1.3	1.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.1	11.2	141.1	8.8	2.8	2.2

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-PP-105. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.9	13.4	178.7	248.3	25.2	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.9	13.4	178.7	248.3	25.2	20.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.9	7.9	100.4	6.3	2.0	1.6
Containerships 5,000 - 6,000 TEU	2.4	6.7	84.5	5.3	1.7	1.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.3	14.6	184.9	11.5	3.7	2.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.9	7.9	100.4	6.3	2.0	1.6
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.4	6.7	84.5	5.3	1.7	1.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.3	14.6	184.9	11.5	3.7	2.9

Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR,
and aux engines use 4.5% S residual fuel.

(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth,
and aux engines use 4.5% S residual fuel.

(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the
berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-PP-106. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	90.5	125.8	12.8	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	90.5	125.8	12.8	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	50.9	3.2	1.0	0.8
Containerships 5,000 - 6,000 TEU	1.2	3.4	42.8	2.7	0.9	0.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.4	93.6	5.8	1.9	1.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.0	50.9	3.2	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	42.8	2.7	0.9	0.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.4	93.6	5.8	1.9	1.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-PP-107. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	103.4	6.5	2.1	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	103.4	6.5	2.1	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	3.0	8.2	103.4	6.5	2.1	1.6
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	103.4	6.5	2.1	1.6

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-PP-108. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	74.6	4.7	1.5	1.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	74.6	4.7	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	74.6	4.7	1.5	1.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	74.6	4.7	1.5	1.2

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-PP-109. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	48.3	3.0	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	48.3	3.0	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.4	3.8	48.3	3.0	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	48.3	3.0	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-PP-110. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	51.7	3.2	1.0	0.8
Containerships 5,000 - 6,000 TEU	1.2	3.4	42.6	2.7	0.8	0.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.5	94.4	5.9	1.9	1.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	51.7	3.2	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	42.6	2.7	0.8	0.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.5	94.4	5.9	1.9	1.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-PP-111. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation
Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	60.7	166.9	2,229.8	3,099.0	314.3	251.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	60.7	166.9	2,229.8	3,099.0	314.3	251.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.
and they do not use AMP.

(2) For 2015 and 2030, all ships are assumed to use AMP.

Table E1.2-PP-112. Max Daily Emissions from OGV Auxiliary Engines - Proposed Project with Mitigation

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-PP-113. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-PP-114. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-PP-115. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.09	0.56	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.08	0.01	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.13	0.45	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.23	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.8	0.1	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.07	0.05	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.22	0.14	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.05	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	0.2	0.1	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.04	0.02	0.01	0.00
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.12	0.08	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.25	0.16	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-116. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Harbor Transit - inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.12	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.07	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-117. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.03	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.11	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.05	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.05	0.03	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-PP-118. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-PP-119. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.12	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.07	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-120. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Hoteling**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	0.33	3.34	20.63	1.08	0.86
Containerships 3,000 - 5,000 TEU	0.03	0.06	0.59	3.63	0.19	0.15
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.64	2.25	0.15	0.12
Containerships 5,000 - 6,000 TEU	0.13	0.26	2.55	8.97	0.62	0.49
Containerships 3,000 - 5,000 TEU	0.05	0.10	0.96	3.36	0.23	0.18
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.2	14.6	1.0	0.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.10	0.21	1.98	1.28	0.30	0.24
Containerships 5,000 - 6,000 TEU	0.21	0.42	3.97	2.56	0.61	0.48
Containerships 3,000 - 5,000 TEU	0.05	0.11	0.99	0.64	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.7	7.0	4.5	1.1	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.05	0.10	0.94	0.60	0.14	0.11
Containerships 8,000 - 9,000 TEU	0.13	0.27	2.51	1.62	0.38	0.31
Containerships 5,000 - 6,000 TEU	0.19	0.38	3.59	2.32	0.55	0.44
Containerships 3,000 - 5,000 TEU	0.04	0.08	0.72	0.46	0.11	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.8	7.8	5.0	1.2	0.9

Boilers are assumed to operate during hoteling regardless of whether the ship uses AMP.

Mitigation measures include low sulfur fuel.

Table E1.2-PP-121. Annual Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.20	1.21	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.05	0.29	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.05	0.16	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.28	0.98	0.07	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.14	0.49	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	1.6	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.16	0.10	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.02	0.05	0.47	0.30	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.16	0.10	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.8	0.5	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.08	0.05	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.25	0.16	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.03	0.06	0.54	0.35	0.08	0.07
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.14	0.09	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.0	0.7	0.2	0.1

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-PP-122. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-PP-123. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-PP-124. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.0	2.6	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.0	2.6	0.6	0.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-PP-125. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-PP-126. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.9	0.6	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.9	0.6	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-PP-127. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-PP-128. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-PP-129. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.2	8.4	88.7	1,159.2	46.7	37.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	88.7	1,159.2	46.7	37.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.1	4.2	39.6	25.6	6.0	4.8
Containerships 5,000 - 6,000 TEU	2.1	4.3	40.2	26.0	6.1	4.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	79.8	51.5	12.2	9.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.1	4.2	39.6	25.6	6.0	4.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	4.3	40.2	26.0	6.1	4.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	79.8	51.5	12.2	9.7

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-PP-130. Max Daily Emissions from OGV Auxiliary Boilers - Proposed Project with Mitigation

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-PP-131. Annual Emissions from Tugboat Main Engine - Proposed Project with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.5	3.3	0.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.10	0.61	0.00	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.09	0.61	3.69	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	0.04	0.31	1.84	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	1.0	6.1	0.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.36	1.91	0.00	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.15	1.07	5.72	0.00	0.20	0.18
Containerships 3,000 - 5,000 TEU	0.05	0.36	1.91	0.00	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	1.8	9.5	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.18	0.73	0.00	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.08	0.57	2.28	0.00	0.10	0.09
Containerships 5,000 - 6,000 TEU	0.17	1.21	4.84	0.00	0.22	0.20
Containerships 3,000 - 5,000 TEU	0.05	0.32	1.28	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	2.3	9.1	0.0	0.4	0.4

Table E1.2-PP-132. Max Daily Emissions from Tugboat Main Engine - Proposed Project

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	118.20	0.07	3.67	3.37
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	118.2	0.1	3.7	3.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	104.8	0.1	3.7	3.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	78.0	0.1	3.5	3.2

Table E1.2-PP-133. Annual Emissions from Tugboat Auxiliary Engines - Proposed Project with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.0	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.23	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.12	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.4	0.0	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.03	0.13	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.08	0.40	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.03	0.13	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.7	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.04	0.16	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.09	0.35	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.2	0.7	0.0	0.0	0.0

Table E1.2-PP-134. Max Daily Emissions from Tugboat Auxiliary Engines - Proposed Project

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	7.51	0.01	0.27	0.26
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.5	0.0	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.3	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	5.6	0.0	0.2	0.2

Table E1.2-PP-135. Annual Emissions from AMP Electricity Consumption - Proposed Project with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.8	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.2	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.36	2.08	0.22	0.07	0.07
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	0.1	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.4	2.2	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.6	0.1	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.03	0.59	3.39	0.35	0.12	0.12
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.4	2.2	0.2	0.1	0.1
Containerships 5,000 - 6,000 TEU	0.0	0.7	3.9	0.4	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.7	0.1	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.06	1.19	6.84	0.71	0.24	0.24
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.2	1.0	0.1	0.0	0.0
Containerships 8,000 - 9,000 TEU	0.0	0.5	2.8	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	0.0	0.6	3.6	0.4	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	0.1	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.07	1.37	7.88	0.82	0.27	0.27

Note: These emissions represent regional power plant emissions associated with AMP generation.

Table E1.2-PP-136. Max Daily Emissions from AMP Electricity Consumption - Proposed Project with Mitigation

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.4	7.6	43.7	4.6	1.5	1.5
Containerships 5,000 - 6,000 TEU	0.3	6.9	39.9	4.2	1.4	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	14.5	83.6	8.7	2.9	2.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.4	7.6	43.7	4.6	1.5	1.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.3	6.9	39.9	4.2	1.4	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	14.5	83.6	8.7	2.9	2.9

Notes: (1) These emissions represent regional power plant emissions associated with AMP generation.

(2) Peak day conditions do not use AMP during 2005 and 2010.

Table E1.2-PP-137. Summary of Annual Marine Vessel Emissions with Mitigation

Proposed Project with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						<i>PM</i>
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	1.3	3.3	42.3	49.0	4.3	3.5
AMP - Hoteling	0.0	0.4	2.1	0.2	0.1	0.1
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	7.1	16.2	180.2	125.9	16.3	13.0
Project Year 2010						
Ships - AQMD to 20 mile	2.0	4.5	34.7	12.4	2.3	1.8
Ships - 20 mile to PA	2.6	5.9	45.4	16.3	3.0	2.4
Ships - PA	1.4	3.0	20.5	7.1	1.4	1.1
Ships - Harbor Transit	1.3	1.9	13.8	3.8	1.0	0.8
Ships - Turning & Docking	1.1	1.5	11.0	2.8	0.8	0.6
Ships - Anchoring	0.3	0.9	11.7	5.7	0.7	0.5
Ships - Hoteling	0.5	1.2	14.4	18.3	1.5	1.2
AMP - Hoteling	0.0	0.6	3.4	0.4	0.1	0.1
Tugboats	0.2	1.1	6.5	0.0	0.2	0.2
Total	9.5	20.5	161.4	66.8	11.0	8.9
Project Year 2015						
Ships - AQMD to 20 mile	3.8	8.4	52.2	3.0	1.8	1.5
Ships - 20 mile to PA	5.0	11.0	68.4	3.9	2.4	1.9
Ships - PA	2.7	5.6	31.1	1.9	1.2	0.9
Ships - Harbor Transit	2.4	3.5	23.1	1.2	0.8	0.6
Ships - Turning & Docking	2.1	2.8	18.3	0.9	0.7	0.5
Ships - Anchoring	0.6	1.7	20.9	1.8	0.5	0.4
Ships - Hoteling	0.4	0.7	7.0	4.5	1.1	0.8
AMP - Hoteling	0.1	1.2	6.8	0.7	0.2	0.2
Tugboats	0.3	1.9	10.2	0.0	0.4	0.3
Total	17.2	36.7	238.0	17.8	9.0	7.3
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	5.2	11.5	71.2	4.1	2.5	2.0
Ships - 20 mile to PA	6.8	15.1	93.2	5.3	3.3	2.6
Ships - PA	3.7	7.6	42.4	2.5	1.6	1.3
Ships - Harbor Transit	3.3	4.9	31.6	1.6	1.1	0.9
Ships - Turning & Docking	2.9	3.8	25.0	1.2	0.9	0.7
Ships - Anchoring	0.8	2.2	27.7	2.3	0.7	0.5
Ships - Hoteling	0.4	0.8	7.8	5.0	1.2	0.9
AMP - Hoteling	0.1	1.4	7.9	0.8	0.3	0.3
Tugboats	0.3	2.4	9.8	0.0	0.4	0.4
Total	23.6	49.7	316.5	22.9	11.9	9.7

AMP Hoteling emissions include the emissions generated by regional power plants to generate the electricity consumed by the ships while hoteling.

Table E1.2-PP-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation

Proposed Project with Mitigation

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	41	91	821	758	103	82
Ships - 20 mile to PA	54	119	1,076	992	135	108
Ships - PA	30	60	486	474	66	53
Ships - Harbor Transit	26	39	327	309	51	41
Ships - Turning & Docking	23	30	260	233	42	33
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	65	175	2,318	4,258	361	289
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	126	0	4	4
Total	242	536	5,415	7,024	761	610
Project Year 2015						
Ships - AQMD to 20 mile	49	107	653	37	23	18
Ships - 20 mile to PA	64	140	855	49	30	24
Ships - PA	35	71	390	23	15	12
Ships - Harbor Transit	31	46	298	15	10	8
Ships - Turning & Docking	28	37	243	11	9	7
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	4	8	80	52	12	10
AMP - Hoteling	1	15	84	9	3	3
Tugboats	3	21	112	0	4	4
Total	215	444	2,715	195	106	86
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	51	111	674	38	24	19
Ships - 20 mile to PA	66	145	883	50	31	25
Ships - PA	36	74	402	24	15	12
Ships - Harbor Transit	33	47	303	15	11	8
Ships - Turning & Docking	29	38	248	11	9	7
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	4	8	80	52	12	10
AMP - Hoteling	1	15	84	9	3	3
Tugboats	3	21	84	0	4	3
Total	223	459	2,757	199	109	88

**Table E1.2-PP-143. Truck Trips and Mileage for the Berth 97-109 Terminal
Proposed Project**

<i>Study Year</i>	<i>Annual Trips</i>	<i>Annual VMT Off-Terminal</i>	<i>Peak Day Factor</i>
2005	417,702	11,271,936	0.00366
2010	804,943	24,728,714	0.00366
2015	1,192,185	38,185,491	0.00366
2030	1,508,004	51,147,107	0.00335
2045	1,508,004	51,147,107	0.00335

Source: Iteris 2007.

Year 2010 values are interpolated.

Table E1.2-PP-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Proposed Project

<i>Activity/Project Scenario</i>	<i>Idling Time/ Trip (Hrs) (2)</i>	<i>Miles/ Trip (1)</i>	<i>Idling Hrs/ Year</i>	<i>Miles/ Year</i>
<i>On-Terminal</i>				
Year 2005	0.17	0.75	69,617	313,276
Year 2010	0.17	0.75	134,157	603,707
Year 2015	0.17	0.75	198,697	894,138
Year 2030	0.17	0.75	251,334	1,131,003
Year 2045	0.17	0.75	251,334	1,131,003
<i>Off-Terminal</i>				
Year 2005	0.25	--	104,425	11,271,936
Year 2010	0.25	--	201,236	24,728,714
Year 2015	0.25	--	298,046	38,185,491
Year 2030	0.25	--	377,001	51,147,107
Year 2045	0.25	--	377,001	51,147,107

Notes: (1) On-terminal mileage/trip based upon terminal-specific data provided by Starcrest (2007). Round trip distance of 1.5 miles is divided by 2 to produce the mileage per one-way trip.

(2) Terminal-specific on-terminal idling time of 20 minutes per round trip is provided by Starcrest (2007). Idling time is divided by 2 to produce the average idling time per one-way trip.

The off-terminal idling time assumes 30 minutes of idling time per round trip (0.25 hr per one-way trip).

Table E1.2-PP-145. On-Road Truck Emission Factors - POLA Truck Fleet Without Mitigation

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)									
		VOC	CO	NOx	SOx	PM10 Tire	PM2.5 Tire	PM10 Brake	PM2.5 Brake	PM10 Exh.	PM2.5 Exh.
Project Year 2005											
On-road Diesel Truck - Idle (g/hr)	0	15.16	49.68	94.12	0.51	-	-	-	-	2.67	2.45
On-road Diesel Truck Transport	5	15.22	36.25	49.81	0.30	0.04	0.01	0.03	0.01	4.03	3.71
On-road Diesel Truck Transport	10	8.76	26.67	33.96	0.25	0.04	0.01	0.03	0.01	2.75	2.53
On-road Diesel Truck Transport	15	4.44	19.92	24.52	0.20	0.04	0.01	0.03	0.01	1.81	1.66
On-road Diesel Truck Transport	20	2.42	15.33	21.39	0.17	0.04	0.01	0.03	0.01	1.27	1.17
On-road Diesel Truck Transport	25	1.93	12.61	20.81	0.16	0.04	0.01	0.03	0.01	1.06	0.98
On-road Diesel Truck Transport	30	1.55	10.52	20.39	0.15	0.04	0.01	0.03	0.01	0.90	0.83
On-road Diesel Truck Transport	35	1.28	8.93	20.12	0.14	0.04	0.01	0.03	0.01	0.79	0.73
On-road Diesel Truck Transport	40	1.11	7.77	20.00	0.14	0.04	0.01	0.03	0.01	0.72	0.67
On-road Diesel Truck Transport	45	1.03	7.00	20.04	0.13	0.04	0.01	0.03	0.01	0.70	0.65
On-road Diesel Truck Transport	50	1.04	6.62	20.23	0.13	0.04	0.01	0.03	0.01	0.73	0.67
On-road Diesel Truck Transport	55	1.14	6.62	20.57	0.13	0.04	0.01	0.03	0.01	0.79	0.73
On-road Diesel Trucks - Composite Off-Terminal		2.29	11.62	22.03	0.16	0.04	0.01	0.03	0.01	1.12	1.03
LNG Trucks - Driving		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LNG Trucks - Idling (g/hr)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Project Year 2010											
On-road Diesel Truck - Idle (g/hr)	0	11.97	46.32	105.77	0.06	-	-	-	-	1.72	1.58
On-road Diesel Truck Transport	5	12.25	27.49	38.93	0.04	0.04	0.01	0.03	0.01	2.55	2.34
On-road Diesel Truck Transport	10	6.91	19.55	26.95	0.03	0.04	0.01	0.03	0.01	1.73	1.59
On-road Diesel Truck Transport	15	3.42	14.04	19.59	0.02	0.04	0.01	0.03	0.01	1.13	1.04
On-road Diesel Truck Transport	20	1.88	10.66	16.82	0.02	0.04	0.01	0.03	0.01	0.79	0.73
On-road Diesel Truck Transport	25	1.50	8.75	16.12	0.02	0.04	0.01	0.03	0.01	0.66	0.61
On-road Diesel Truck Transport	30	1.20	7.37	15.57	0.02	0.04	0.01	0.03	0.01	0.57	0.52
On-road Diesel Truck Transport	35	0.99	6.34	15.17	0.02	0.04	0.01	0.03	0.01	0.51	0.47
On-road Diesel Truck Transport	40	0.85	5.60	14.92	0.02	0.04	0.01	0.03	0.01	0.48	0.44
On-road Diesel Truck Transport	45	0.79	5.13	14.82	0.02	0.04	0.01	0.03	0.01	0.48	0.44
On-road Diesel Truck Transport	50	0.79	4.94	14.87	0.02	0.04	0.01	0.03	0.01	0.52	0.47
On-road Diesel Truck Transport	55	0.86	5.02	15.06	0.02	0.04	0.01	0.03	0.01	0.58	0.54
On-road Diesel Trucks - Composite Off-Terminal		1.85	8.71	16.89	0.02	0.04	0.01	0.03	0.01	0.74	0.68
LNG Trucks - Driving		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LNG Trucks - Idling (g/hr)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Project Year 2015											
On-road Diesel Truck - Idle (g/hr)	0	9.65	43.63	114.61	0.06	-	-	-	-	0.98	0.90
On-road Diesel Truck Transport	5	7.24	15.96	21.77	0.04	0.04	0.01	0.03	0.01	1.12	1.03
On-road Diesel Truck Transport	10	4.03	10.83	15.41	0.03	0.04	0.01	0.03	0.01	0.77	0.71
On-road Diesel Truck Transport	15	1.97	7.38	11.35	0.02	0.04	0.01	0.03	0.01	0.52	0.48
On-road Diesel Truck Transport	20	1.10	5.43	9.60	0.02	0.04	0.01	0.03	0.01	0.37	0.34
On-road Diesel Truck Transport	25	0.90	4.59	9.03	0.02	0.04	0.01	0.03	0.01	0.32	0.29
On-road Diesel Truck Transport	30	0.74	3.97	8.58	0.02	0.04	0.01	0.03	0.01	0.28	0.26
On-road Diesel Truck Transport	35	0.61	3.52	8.23	0.02	0.04	0.01	0.03	0.01	0.26	0.24
On-road Diesel Truck Transport	40	0.53	3.22	7.98	0.02	0.04	0.01	0.03	0.01	0.26	0.24
On-road Diesel Truck Transport	45	0.48	3.05	7.84	0.02	0.04	0.01	0.03	0.01	0.27	0.25
On-road Diesel Truck Transport	50	0.47	3.01	7.80	0.02	0.04	0.01	0.03	0.01	0.30	0.28
On-road Diesel Truck Transport	55	0.49	3.11	7.87	0.02	0.04	0.01	0.03	0.01	0.34	0.32
On-road Diesel Trucks - Composite Off-Terminal		1.09	4.77	9.32	0.02	0.04	0.01	0.03	0.01	0.37	0.34
LNG Trucks - Driving		0.37	1.08	2.74	-	0.04	0.01	0.03	0.01	0.07	0.07
LNG Trucks - Idling (g/hr)		3.24	9.85	33.68	-	-	-	-	-	0.19	0.19
Project Year 2030											
On-road Diesel Truck - Idle (g/hr)	0	7.68	41.16	121.92	0.06	-	-	-	-	0.17	0.15
On-road Diesel Truck Transport	5	2.60	6.34	7.64	0.04	0.04	0.01	0.03	0.01	0.11	0.10
On-road Diesel Truck Transport	10	1.42	3.90	5.73	0.03	0.04	0.01	0.03	0.01	0.10	0.09
On-road Diesel Truck Transport	15	0.69	2.37	4.37	0.03	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	20	0.41	1.68	3.58	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	25	0.35	1.51	3.23	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	30	0.30	1.41	2.94	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	35	0.26	1.35	2.70	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	40	0.23	1.33	2.52	0.02	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	45	0.21	1.34	2.40	0.02	0.04	0.01	0.03	0.01	0.10	0.09
On-road Diesel Truck Transport	50	0.19	1.39	2.33	0.02	0.04	0.01	0.03	0.01	0.11	0.10
On-road Diesel Truck Transport	55	0.17	1.48	2.32	0.02	0.04	0.01	0.03	0.01	0.12	0.11
On-road Diesel Trucks - Composite Off-Terminal		0.42	1.74	3.30	0.02	0.04	0.01	0.03	0.01	0.09	0.08
LNG Trucks - Driving		0.56	1.66	4.71	-	0.04	0.01	0.03	0.01	0.12	0.12
LNG Trucks - Idling (g/hr)		4.95	15.13	57.92	-	-	-	-	-	0.32	0.32
Project Year 2045											
On-road Diesel Truck - Idle (g/hr)	0	7.58	41.03	122.28	0.06	-	-	-	-	0.12	0.11
On-road Diesel Truck Transport	5	2.40	5.87	7.06	0.04	0.04	0.01	0.03	0.01	0.09	0.09
On-road Diesel Truck Transport	10	1.31	3.60	5.30	0.03	0.04	0.01	0.03	0.01	0.08	0.08
On-road Diesel Truck Transport	15	0.63	2.17	4.05	0.03	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	20	0.37	1.53	3.31	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	25	0.32	1.39	2.98	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	30	0.28	1.30	2.71	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	35	0.25	1.25	2.49	0.02	0.04	0.01	0.03	0.01	0.07	0.07
On-road Diesel Truck Transport	40	0.22	1.23	2.31	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	45	0.19	1.25	2.20	0.02	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	50	0.17	1.30	2.13	0.02	0.04	0.01	0.03	0.01	0.10	0.09
On-road Diesel Truck Transport	55	0.16	1.38	2.12	0.02	0.04	0.01	0.03	0.01	0.11	0.10
On-road Diesel Trucks - Composite Off-Terminal		0.39	1.61	3.04	0.02	0.04	0.01	0.03	0.01	0.08	0.07
LNG Trucks - Driving		0.56	1.66	4.71	-	0.04	0.01	0.03	0.01	0.12	0.12
LNG Trucks - Idling (g/hr)		4.95	15.13	57.92	-	-	-	-	-	0.32	0.32

Source: EMFAC2007. Based on truck fleet age distribution from year 2005 POLA truck fleet. Heavy heavy-duty diesel category.

(1) Composite off-terminal emission factors are based on the following assumptions:

2005: Based on 10% of distance travelled at 10 miles per hour (mph), 50% at 25 mph, and 40% at 55 mph.

2010 & 2015: Based on 10% at 10 miles per hour (mph), 60% at 25 mph, and 30% at 55 mph.

2030 & 2045: Based on 10% at 10 miles per hour (mph), 70% at 25 mph, and 20% at 55 mph.

(2) LNG emission factors provided by Starcrest, 2/18/08.

(3) LNG idling emissions were estimated using the ratio of composite driving to idling emission factors for diesel trucks.

(4) Year 2045 uses 2040 emission factors, which is the latest year that EMFAC2007 calculates.

Table E1.2-PP-146. On-Road Truck Emission Factors - Mitigated POLA Truck Fleet

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)									
		VOC	CO	NOx	SOx	PM10 Tire	PM2.5 Tire	PM10 Brake	PM2.5 Brake	PM10 Exh.	PM2.5 Exh.
Project Year 2005											
On-road Diesel Truck - Idle (g/hr)	0	15.16	49.68	94.12	0.51	-	-	-	-	2.67	2.45
On-road Diesel Truck Transport	5	15.22	36.25	49.81	0.30	0.04	0.01	0.03	0.01	4.03	3.71
On-road Diesel Truck Transport	10	8.76	26.67	33.96	0.25	0.04	0.01	0.03	0.01	2.75	2.53
On-road Diesel Truck Transport	15	4.44	19.92	24.52	0.20	0.04	0.01	0.03	0.01	1.81	1.66
On-road Diesel Truck Transport	20	2.42	15.33	21.99	0.17	0.04	0.01	0.03	0.01	1.27	1.17
On-road Diesel Truck Transport	25	1.93	12.61	20.81	0.16	0.04	0.01	0.03	0.01	1.06	0.98
On-road Diesel Truck Transport	30	1.55	10.52	20.39	0.15	0.04	0.01	0.03	0.01	0.90	0.83
On-road Diesel Truck Transport	35	1.28	8.93	20.12	0.14	0.04	0.01	0.03	0.01	0.79	0.73
On-road Diesel Truck Transport	40	1.11	7.77	20.00	0.14	0.04	0.01	0.03	0.01	0.72	0.67
On-road Diesel Truck Transport	45	1.03	7.00	20.04	0.13	0.04	0.01	0.03	0.01	0.70	0.65
On-road Diesel Truck Transport	50	1.04	6.62	20.23	0.13	0.04	0.01	0.03	0.01	0.73	0.67
On-road Diesel Truck Transport	55	1.14	6.62	20.57	0.13	0.04	0.01	0.03	0.01	0.79	0.73
On-road Diesel Trucks - Composite Off-Terminal		2.29	11.62	22.03	0.16	0.04	0.01	0.03	0.01	1.12	1.03
LNG Trucks - Driving		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LNG Trucks - Idling (g/hr)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Project Year 2010											
On-road Diesel Truck - Idle (g/hr)	0	9.16	42.83	115.84	0.06	-	-	-	-	0.70	0.64
On-road Diesel Truck Transport	5	6.72	15.24	24.58	0.04	0.04	0.01	0.03	0.01	1.14	1.05
On-road Diesel Truck Transport	10	3.76	10.51	17.47	0.03	0.04	0.01	0.03	0.01	0.78	0.72
On-road Diesel Truck Transport	15	1.85	7.30	12.90	0.02	0.04	0.01	0.03	0.01	0.52	0.48
On-road Diesel Truck Transport	20	1.03	5.43	10.90	0.02	0.04	0.01	0.03	0.01	0.37	0.34
On-road Diesel Truck Transport	25	0.84	4.57	10.23	0.02	0.04	0.01	0.03	0.01	0.31	0.29
On-road Diesel Truck Transport	30	0.69	3.93	9.69	0.02	0.04	0.01	0.03	0.01	0.27	0.25
On-road Diesel Truck Transport	35	0.57	3.45	9.27	0.02	0.04	0.01	0.03	0.01	0.25	0.23
On-road Diesel Truck Transport	40	0.50	3.13	8.97	0.02	0.04	0.01	0.03	0.01	0.24	0.22
On-road Diesel Truck Transport	45	0.45	2.94	8.80	0.02	0.04	0.01	0.03	0.01	0.24	0.22
On-road Diesel Truck Transport	50	0.44	2.88	8.74	0.02	0.04	0.01	0.03	0.01	0.26	0.24
On-road Diesel Truck Transport	55	0.47	2.96	8.81	0.02	0.04	0.01	0.03	0.01	0.30	0.27
On-road Diesel Trucks - Composite Off-Terminal		1.02	4.68	10.53	0.02	0.04	0.01	0.03	0.01	0.36	0.33
LNG Trucks - Driving		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LNG Trucks - Idling (g/hr)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Project Year 2015											
On-road Diesel Truck - Idle (g/hr)	0	7.57	41.00	122.23	0.06	-	-	-	-	0.11	0.10
On-road Diesel Truck Transport	5	2.65	6.22	8.97	0.04	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	10	1.45	3.80	6.74	0.03	0.04	0.01	0.03	0.01	0.07	0.07
On-road Diesel Truck Transport	15	0.89	2.27	5.14	0.03	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	20	0.41	1.60	4.20	0.02	0.04	0.01	0.03	0.01	0.06	0.06
On-road Diesel Truck Transport	25	0.36	1.46	3.78	0.02	0.04	0.01	0.03	0.01	0.06	0.06
On-road Diesel Truck Transport	30	0.31	1.37	3.43	0.02	0.04	0.01	0.03	0.01	0.06	0.06
On-road Diesel Truck Transport	35	0.27	1.32	3.14	0.02	0.04	0.01	0.03	0.01	0.06	0.06
On-road Diesel Truck Transport	40	0.24	1.31	2.93	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	45	0.21	1.33	2.78	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	50	0.19	1.38	2.69	0.02	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	55	0.18	1.47	2.68	0.02	0.04	0.01	0.03	0.01	0.10	0.09
On-road Diesel Trucks - Composite Off-Terminal		0.41	1.70	3.75	0.02	0.04	0.01	0.03	0.01	0.07	0.07
LNG Trucks - Driving		0.37	1.08	2.74	-	0.04	0.01	0.03	0.01	0.07	0.07
LNG Trucks - Idling (g/hr)		3.24	9.85	33.68	-	-	-	-	-	0.19	0.19
Project Year 2030											
On-road Diesel Truck - Idle (g/hr)	0	7.58	41.03	122.34	0.06	-	-	-	-	0.11	0.10
On-road Diesel Truck Transport	5	2.47	5.95	7.32	0.04	0.04	0.01	0.03	0.01	0.09	0.09
On-road Diesel Truck Transport	10	1.35	3.64	5.50	0.03	0.04	0.01	0.03	0.01	0.08	0.08
On-road Diesel Truck Transport	15	0.65	2.18	4.20	0.03	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	20	0.38	1.54	3.43	0.02	0.04	0.01	0.03	0.01	0.07	0.07
On-road Diesel Truck Transport	25	0.33	1.40	3.09	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	30	0.29	1.31	2.80	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	35	0.25	1.26	2.57	0.02	0.04	0.01	0.03	0.01	0.07	0.07
On-road Diesel Truck Transport	40	0.22	1.25	2.39	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	45	0.20	1.27	2.27	0.02	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	50	0.18	1.32	2.20	0.02	0.04	0.01	0.03	0.01	0.10	0.09
On-road Diesel Truck Transport	55	0.17	1.40	2.19	0.02	0.04	0.01	0.03	0.01	0.12	0.11
On-road Diesel Trucks - Composite Off-Terminal		0.40	1.62	3.15	0.02	0.04	0.01	0.03	0.01	0.08	0.07
LNG Trucks - Driving		0.56	1.66	4.71	-	0.04	0.01	0.03	0.01	0.12	0.12
LNG Trucks - Idling (g/hr)		4.95	15.13	57.92	-	-	-	-	-	0.32	0.32
Project Year 2045											
On-road Diesel Truck - Idle (g/hr)	0	7.58	41.03	122.32	0.06	-	-	-	-	0.11	0.10
On-road Diesel Truck Transport	5	2.39	5.82	7.04	0.04	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	10	1.31	3.57	5.29	0.03	0.04	0.01	0.03	0.01	0.08	0.08
On-road Diesel Truck Transport	15	0.63	2.14	4.04	0.03	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	20	0.37	1.51	3.30	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	25	0.32	1.37	2.98	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	30	0.28	1.28	2.70	0.02	0.04	0.01	0.03	0.01	0.07	0.06
On-road Diesel Truck Transport	35	0.24	1.24	2.48	0.02	0.04	0.01	0.03	0.01	0.07	0.07
On-road Diesel Truck Transport	40	0.22	1.22	2.31	0.02	0.04	0.01	0.03	0.01	0.08	0.07
On-road Diesel Truck Transport	45	0.19	1.24	2.19	0.02	0.04	0.01	0.03	0.01	0.09	0.08
On-road Diesel Truck Transport	50	0.17	1.29	2.12	0.02	0.04	0.01	0.03	0.01	0.10	0.09
On-road Diesel Truck Transport	55	0.16	1.37	2.11	0.02	0.04	0.01	0.03	0.01	0.11	0.10
On-road Diesel Trucks - Composite Off-Terminal		0.39	1.59	3.03	0.02	0.04	0.01	0.03	0.01	0.08	0.07
LNG Trucks - Driving		0.56	1.66	4.71	-	0.04	0.01	0.03	0.01	0.12	0.12
LNG Trucks - Idling (g/hr)		4.95	15.13	57.92	-	-	-	-	-	0.32	0.32

Note: Mitigated diesel emission factors assume that diesel trucks shall meet the U.S. EPA 2007 emission standards in the following percentages:

- 50 percent in 2009
- 70 percent in 2010
- 90 percent in 2011
- 100 percent in 2012

Table E1.2-PP-147. Annual Truck Emissions for the Berths 97-109 Terminal

Proposed Project

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	1.77	6.85	15.64	0.01	0.25	0.23
Year 2010 - Driving	4.60	13.01	17.93	0.02	6.61	1.99
Subtotal	6.37	19.86	33.57	0.03	6.86	2.22
<i>Project Year 2015</i>						
Year 2015 - Idling	2.11	9.56	25.10	0.01	0.21	0.20
Year 2015 - Driving	3.97	10.68	15.18	0.03	8.85	2.08
Subtotal	6.08	20.23	40.28	0.04	9.06	2.27
<i>Project Year 2030</i>						
Year 2030 - Idling	2.13	11.40	33.78	0.02	0.05	0.04
Year 2030 - Driving	1.77	4.87	7.14	0.04	10.35	1.85
Subtotal	3.90	16.27	40.92	0.05	10.40	1.90
<i>Project Year 2045</i>						
Year 2045 - Idling	2.10	11.37	33.88	0.02	0.03	0.03
Year 2045 - Driving	1.64	4.49	6.61	0.04	10.33	1.84
Subtotal	3.74	15.85	40.49	0.05	10.37	1.87
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	2.66	10.27	23.46	0.01	0.38	0.35
Year 2010 - Driving	50.35	237.41	460.30	0.52	31.80	20.89
Subtotal	53.01	247.68	483.76	0.53	32.18	21.25
<i>Project Year 2015</i>						
Year 2015 - Idling	3.17	14.34	37.65	0.02	0.32	0.29
Year 2015 - Driving	45.82	200.94	392.35	0.81	33.44	17.86
Subtotal	48.99	215.28	430.00	0.83	33.76	18.15
<i>Project Year 2030</i>						
Year 2030 - Idling	3.19	17.11	50.66	0.03	0.07	0.06
Year 2030 - Driving	23.79	98.29	185.95	1.10	28.76	9.12
Subtotal	26.98	115.40	236.61	1.13	28.83	9.19
<i>Project Year 2045</i>						
Year 2045 - Idling	3.15	17.05	50.82	0.03	0.05	0.04
Year 2045 - Driving	21.99	90.53	171.56	1.10	28.24	8.66
Subtotal	25.14	107.59	222.38	1.13	28.29	8.70

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-PP-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	59.4	267.5	517.3	0.6	39.0	23.5
Year 2015	55.1	235.5	470.3	0.9	42.8	20.4
Year 2030	30.9	131.7	277.5	1.2	39.2	11.1
Year 2045	28.9	123.4	262.9	1.2	38.7	10.6

Table E1.2-E1.2-PP-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	252	1,194	2,222	16	172	115
Year 2010	435	1,959	3,787	4	286	172
Year 2015	403	1,724	3,443	6	313	150
Year 2030	207	883	1,861	8	263	74
Year 2045	194	828	1,762	8	259	71

**Table E1.2-PP-150. Annual Truck Emissions for the Berths 97-109 Terminal
Proposed Project with Mitigation**

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	1.36	6.33	17.13	0.01	0.10	0.09
Year 2010 - Driving	2.50	6.99	11.62	0.02	5.98	1.41
Subtotal	3.86	13.32	28.75	0.03	6.08	1.50
<i>Project Year 2015</i>						
Year 2015 - Idling	1.00	4.20	13.19	0.00	0.04	0.04
Year 2015 - Driving	0.68	1.87	3.88	0.01	8.16	1.45
Subtotal	1.67	6.07	17.08	0.01	8.20	1.48
<i>Project Year 2030</i>						
Year 2030 - Idling	1.37	4.19	16.05	0.00	0.09	0.09
Year 2030 - Driving	0.70	2.06	5.87	0.00	10.38	1.89
Subtotal	2.07	6.25	21.92	0.00	10.47	1.98
<i>Project Year 2045</i>						
Year 2045 - Idling	1.37	4.19	16.05	0.00	0.09	0.09
Year 2045 - Driving	0.70	2.06	5.87	0.00	10.38	1.89
Subtotal	2.07	6.25	21.92	0.00	10.47	1.98
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	2.03	9.50	25.70	0.01	0.15	0.14
Year 2010 - Driving	27.79	127.62	287.03	0.52	21.20	11.13
Subtotal	29.82	137.12	312.73	0.53	21.36	11.27
<i>Project Year 2015</i>						
Year 2015 - Idling	1.49	6.31	19.79	0.01	0.06	0.05
Year 2015 - Driving	15.97	53.17	128.01	0.24	20.88	6.47
Subtotal	17.47	59.48	147.80	0.25	20.94	6.53
<i>Project Year 2030</i>						
Year 2030 - Idling	2.06	6.29	24.07	0.00	0.13	0.13
Year 2030 - Driving	31.48	93.31	265.58	0.00	30.72	11.49
Subtotal	33.54	99.60	289.65	0.00	30.86	11.62
<i>Project Year 2045</i>						
Year 2045 - Idling	2.06	6.29	24.07	0.00	0.13	0.13
Year 2045 - Driving	31.48	93.31	265.58	0.00	30.72	11.49
Subtotal	33.54	99.60	289.65	0.00	30.86	11.62

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-PP-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	33.7	150.4	341.5	0.6	27.4	12.8
Year 2015	19.1	65.5	164.9	0.3	29.1	8.0
Year 2030	35.6	105.9	311.6	-	41.3	13.6
Year 2045	35.6	105.9	311.6	-	41.3	13.6

Table E1.2-E1.2-PP-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	247	1,101	2,500	4	201	94
Year 2015	140	480	1,207	2	213	59
Year 2030	239	710	2,089	-	277	91
Year 2045	239	710	2,089	-	277	91

Table E1.2-PP-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Proposed Project

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	1.2	13.0	1.7	0.0	1.5	0.3
Year 2010	1.4	16.3	2.2	0.0	2.9	0.6
Year 2015	1.3	16.0	2.1	0.0	4.4	0.9
Year 2030	0.9	9.8	1.1	0.0	5.3	1.0
Year 2045	0.8	8.2	0.8	0.0	5.3	1.0

Table E1.2-PP-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Proposed Project

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	7.7	87.1	11.5	0.1	10.1	2.0
Year 2010	9.1	109.1	14.5	0.1	19.6	3.8
Year 2015	8.7	107.3	14.1	0.1	29.2	5.7
Year 2030	5.9	65.4	7.0	0.2	35.5	6.8
Year 2045	5.0	54.6	5.5	0.2	35.5	6.9

Table E1.2-PP-155. Train Trips Associated with the Proposed Project

Year	Round Trips	
	Annual	Peak Day
Berths 121-131 ICTF		
2005	113	1
2010	227	1
2015	340	1
2030	378	2
2045	378	2
Off-Dock Railyards		
2005	111	1
2010	209	1
2015	307	1
2030	438	2
2045	438	2

Table E1.2-PP-156. Equipment Usage Associated with One Train Trip - Proposed Project

Equipment Type	Hp	Load Factor	Number Active		Average Speed (mph)	Distance (miles) (1)	Hours/Trip	Total hp-hr	
			Avg.	Peak				Avg.	Peak
Outbound Train Trip Departing from Berths 121-131 ICTF									
Yard Tractor	175	0.65	7	7	NA	NA	8.0	6,370	6,370
Top Picks	250	0.59	2	2	NA	NA	8.0	2,360	2,360
Line Haul Locomotive Transport in SCAB	4,256	0.28	3	4	20	105	5.3	18,560	24,746
Line Haul Locomotive Transport Near Port (1)	4,256	0.11	3	4	9	6	0.7	970	1,294
Line Haul Locomotive at Railyard, 2001-05	4,256	0.05	3	4	NA	NA	2.5	1,596	2,128
Line Haul Locomotive at Railyard, 2006+ (3)	4,256	0.05	3	4	NA	NA	1.5	958	1,277
Yard Locomotive	2,144	0.09	1	1	NA	NA	1.9	367	367
Inbound Train Trip Arriving at Berths 121-131 ICTF									
Yard Tractor	175	0.65	7	7	NA	NA	3.0	2,389	2,389
Top Picks	250	0.59	2	2	NA	NA	3.0	885	885
Line Haul Locomotive Transport in SCAB	4,256	0.28	3	4	20	105	5.3	18,560	24,746
Line Haul Locomotive Transport Near Port (1)	4,256	0.11	3	4	9	6	0.7	970	1,294
Line Haul Locomotive at Railyard (8)	4,256	0.05	3	4	NA	NA	1.0	638	851
Yard Locomotive	2,144	0.09	1	1	NA	NA	1.9	367	367
Outbound Train Trip Departing from Off-Dock Railyards									
Yard Tractor	175	0.65	7	7	NA	NA	8.0	6,370	6,370
Top Picks	250	0.59	2	2	NA	NA	8.0	2,360	2,360
Line Haul Locomotive Transport in SCAB	4,256	0.28	3	4	20	84	4.2	14,848	19,797
Line Haul Locomotive at Railyard, 2001-05	4,256	0.05	3	4	NA	NA	2.5	1,596	2,128
Line Haul Locomotive at Railyard, 2006+ (3)	4,256	0.05	3	4	NA	NA	1.5	958	1,277
Yard Locomotive	2,167	0.09	1	1	NA	NA	1.9	371	371
Inbound Train Trip Arriving at Off-Dock Railyards									
Yard Tractor	175	0.65	7	7	NA	NA	3.0	2,389	2,389
Top Picks	250	0.59	2	2	NA	NA	3.0	885	885
Line Haul Locomotive Transport in SCAB	4,256	0.28	3	4	20	84	4.2	14,848	19,797
Line Haul Locomotive at Railyard	4,256	0.05	3	4	NA	NA	1.0	638	851
Yard Locomotive	2,167	0.09	1	1	NA	NA	1.9	371	371

Source: POLA 2005 Emission Inventory Report.

Notes: (1) Approx. distance from B97-109 Terminal to edge of SCAB is 105 miles. The near-Port haul dist. of 6 mi has an avg. haul speed of 9 mph, based on pers. communication with Mark Stehly/BNSF (9/7/05). Approximate distance from off-dock railyards to edge of SCAB is 84 miles.

(2) An outbound trip means a train trip from the Port to inland locations. An inbound trip means a train trip to the Port from inland locations.

(3) The 2005 MOU between CARB and the Class 1 railroads (BNSF and UP) will reduce line haul locomotive idling at railyards due to anti-idling devices and limits on non-essential idling. The reduced idling time is assumed to begin in 2006, the first full year after the agreement.

Table E1.2-PP-157. Emission Factors for ICTF Equipment without Mitigation

Project Scenario/Equipment Horsepower	EF ID	Emission Factors (g/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005							
Yard tractor >120-175	YTD175_U	0.81	2.96	7.19	0.06	0.39	0.35
Top pick >175-250 On-Dock	TH250_U_RY	0.22	0.58	5.83	0.06	0.13	0.12
Top pick >175-250 Off-Dock	TH250_U	0.58	1.76	7.28	0.06	0.26	0.24
Year 2010							
Yard tractor >120-175	YTD175_U	0.02	2.77	0.12	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_U_RY	0.19	1.87	7.68	0.01	0.21	0.19
Top pick >175-250 Off-Dock	TH250_U	0.31	1.90	7.76	0.01	0.23	0.22
Year 2015							
Yard tractor >120-175	YTD175_U	0.02	2.95	0.13	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_U_RY	0.21	2.00	8.12	0.01	0.24	0.22
Top pick >175-250 Off-Dock	TH250_U	0.21	2.00	8.12	0.01	0.24	0.22
Year 2030							
Yard tractor >120-175	YTD175_U	0.02	2.95	0.13	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_U_RY	0.08	1.06	0.92	0.01	0.01	0.01
Top pick >175-250 Off-Dock	TH250_U	0.08	1.06	0.92	0.01	0.01	0.01
Year 2045							
Yard tractor >120-175	YTD175_U	0.02	2.95	0.13	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_U_RY	0.08	1.06	0.92	0.01	0.01	0.01
Top pick >175-250 Off-Dock	TH250_U	0.08	1.06	0.92	0.01	0.01	0.01

Notes: (1) Estimated with the use of the ARB OFFROAD2007 Model with consideration of fleet turnover with adopted future EPA off-road emission standards.

(2) Top picks at the on-dock railyard have been using emulsified fuel + DOCs as part of normal operations. This is accounted for in the unmitigated emission factors for on-dock top picks. Emulsified + DOC will phase out as CARB regulations take effect by the end of 2012.

Table E1.2-PP-158. Emission Factors for Berth 121-131 ICTF Equipment with Mitigation

Project Scenario/Equipment Horsepower	EF ID	Emission Factors (g/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005							
Yard tractor >120-175	YTD175_M_RY	0.81	2.96	7.19	0.06	0.39	0.35
Top pick >175-250 On-Dock	TH250_M	0.22	0.58	5.83	0.06	0.13	0.12
Top pick >175-250 Off-Dock	TH250_U	0.58	1.76	7.28	0.06	0.26	0.24
Year 2010							
Yard tractor >120-175	YTD175_M_RY	0.02	2.77	0.12	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_M	0.19	1.87	7.68	0.01	0.21	0.19
Top pick >175-250 Off-Dock	TH250_U	0.31	1.90	7.76	0.01	0.23	0.22
Year 2015							
Yard tractor >120-175	YTD175_M_RY	0.02	2.95	0.13	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_M	0.06	0.96	0.85	0.01	0.01	0.01
Top pick >175-250 Off-Dock	TH250_U	0.21	2.00	8.12	0.01	0.24	0.22
Year 2030							
Yard tractor >120-175	YTD175_M_RY	0.02	2.95	0.13	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_M	0.08	1.06	0.92	0.01	0.01	0.01
Top pick >175-250 Off-Dock	TH250_U	0.08	1.06	0.92	0.01	0.01	0.01
Year 2045							
Yard tractor >120-175	YTD175_M_RY	0.02	2.95	0.13	0.01	0.01	0.01
Top pick >175-250 On-Dock	TH250_M	0.08	1.06	0.92	0.01	0.01	0.01
Top pick >175-250 Off-Dock	TH250_U	0.08	1.06	0.92	0.01	0.01	0.01

Notes: (1) Estimated with the use of the ARB OFFROAD Model with consideration of fleet turnover with adopted future EPA off-road emission standards.

(2) These mitigated emission factors only apply to on-dock railyard equipment; off-dock equipment will remain unmitigated.

Table E1.2-PP-159. Emission Factors for Switch Yard Locomotives at B121-131 Railyard

Year	Emission Factors (g/hp-hr)						References
	VOC	CO	NOx	SOx	PM10	PM2.5	
1999	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2000	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2001	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2002	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2003	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2004	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2005	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2006	1.01	1.83	17.40	0.15	0.44	0.40	(2,3)
2007	1.01	1.83	17.40	0.005	0.43	0.40	(1,2)
2008	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2009	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2010	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2011	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2012	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2013	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2014	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2015	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2016	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2017	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2018	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2019	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2020	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2021	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2022	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2023	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2024	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2025	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2026	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2027	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2028	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2029	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2030	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2031	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2032	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2033	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2034	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2035	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2036	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2037	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2038	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2039	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)
2040	0.52	1.83	7.30	0.005	0.20	0.18	(1,4)

Notes: (1) Assumes use of ULSD (15 ppm sulfur content).

(2) Represents baseline uncontrolled national average emission factors for switch yard locomotives (EPA 1997).

SOx calculated as SO2 assuming 0.336 lb/hp-hr fuel (Starcrest, 2004).

(3) Assumes use of CARB diesel fuel (500 ppm sulfur content).

(4) Represents emission factors for Tier 2 switch locomotives (EPA, 1997).

Table E1.2-PP-160. Emission Factors for Switch Yard Locomotives at Off-Dock Railyards

Year	Emission Factors (g/hp-hr)						References
	VOC	CO	NOx	SOx	PM10	PM2.5	
1999	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2000	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2001	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2002	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2003	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2004	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2005	1.01	1.83	17.40	0.15	0.44	0.40	(2)
2006	1.00	1.83	15.85	0.15	0.43	0.40	(2)
2007	0.99	1.83	15.52	0.005	0.42	0.39	(1,3)
2008	0.99	1.83	15.18	0.005	0.42	0.38	(1,3)
2009	0.98	1.83	14.84	0.005	0.41	0.38	(1,3)
2010	0.97	1.83	14.49	0.005	0.41	0.38	(1,3)
2011	0.97	1.83	14.14	0.005	0.41	0.38	(1,3)
2012	0.96	1.83	13.78	0.005	0.40	0.37	(1,3)
2013	0.95	1.83	13.42	0.005	0.40	0.37	(1,3)
2014	0.94	1.83	13.05	0.005	0.40	0.37	(1,3)
2015	0.94	1.83	12.68	0.005	0.39	0.36	(1,3)
2016	0.93	1.83	12.31	0.005	0.39	0.36	(1,3)
2017	0.92	1.83	12.14	0.005	0.39	0.35	(1,3)
2018	0.91	1.83	11.97	0.005	0.38	0.35	(1,3)
2019	0.90	1.83	11.79	0.005	0.38	0.35	(1,3)
2020	0.89	1.83	11.61	0.005	0.37	0.34	(1,3)
2021	0.89	1.83	11.43	0.005	0.37	0.34	(1,3)
2022	0.88	1.83	11.24	0.005	0.36	0.33	(1,3)
2023	0.87	1.83	11.05	0.005	0.36	0.33	(1,3)
2024	0.86	1.83	10.88	0.005	0.35	0.33	(1,3)
2025	0.85	1.83	10.78	0.005	0.35	0.32	(1,3)
2026	0.84	1.83	10.67	0.005	0.34	0.32	(1,3)
2027	0.83	1.83	10.56	0.005	0.34	0.31	(1,3)
2028	0.82	1.83	10.44	0.005	0.33	0.31	(1,3)
2029	0.80	1.83	10.33	0.005	0.33	0.30	(1,3)
2030	0.79	1.83	10.18	0.005	0.32	0.30	(1,3)
2031	0.78	1.83	10.03	0.005	0.31	0.29	(1,3)
2032	0.76	1.83	9.88	0.005	0.31	0.28	(1,3)
2033	0.75	1.83	9.73	0.005	0.30	0.28	(1,3)
2034	0.73	1.83	9.57	0.005	0.29	0.27	(1,3)
2035	0.72	1.83	9.41	0.005	0.29	0.26	(1,3)
2036	0.70	1.83	9.24	0.005	0.28	0.26	(1,3)
2037	0.69	1.83	9.07	0.005	0.27	0.25	(1,3)
2038	0.67	1.83	8.89	0.005	0.26	0.24	(1,3)
2039	0.65	1.83	8.72	0.005	0.25	0.23	(1,3)
2040	0.64	1.83	8.53	0.005	0.24	0.22	(1,3)

Notes: (1) Assumes use of ULSD (15 ppm sulfur content).

(2) Represents national average emission factors for switch yard locomotives for a given year (EPA 1998).

(3) Represents average EPA emission factors for switch yard locomotives for a given year + the use of ULSD (15 ppm) required by CARB in 2007.

Table E1.2-PP-161. Emission Factors for Line Haul Locomotives

Year	Emission Factors (g/hp-hr)							References
	VOC	CO	NOx	SOx (4)	PM10	PM2.5		
1999	0.48	1.28	13.00	0.59	0.32	0.29	(1)	
2000	0.48	1.28	12.84	0.59	0.32	0.29	(1)	
2001	0.48	1.28	12.35	0.59	0.32	0.29	(1)	
2002	0.48	1.28	11.49	0.59	0.32	0.29	(1)	
2003	0.48	1.28	10.66	0.59	0.32	0.29	(1)	
2004	0.48	1.28	9.81	0.59	0.32	0.29	(1)	
2005	0.46	1.28	8.82	0.59	0.31	0.28	(1)	
2006	0.44	1.28	8.06	0.59	0.30	0.27	(1)	
2007	0.43	1.28	7.61	0.59	0.29	0.26	(1)	
2008	0.42	1.28	7.35	0.15	0.25	0.23	(1)	
2009	0.41	1.28	7.17	0.15	0.24	0.22	(1)	
2010	0.40	1.28	7.02	0.15	0.23	0.21	(1)	
2011	0.39	1.28	6.95	0.15	0.23	0.21	(1)	
2012	0.38	1.28	6.85	0.005	0.21	0.19	(2)	
2013	0.38	1.28	6.75	0.005	0.21	0.19	(2)	
2014	0.37	1.28	6.65	0.005	0.20	0.19	(2)	
2015	0.37	1.28	6.56	0.005	0.20	0.18	(2)	
2016	0.36	1.28	6.47	0.005	0.19	0.18	(2)	
2017	0.35	1.28	6.38	0.005	0.19	0.17	(2)	
2018	0.35	1.28	6.29	0.005	0.19	0.17	(2)	
2019	0.34	1.28	6.21	0.005	0.18	0.17	(2)	
2020	0.34	1.28	6.12	0.005	0.18	0.16	(2)	
2021	0.33	1.28	6.04	0.005	0.17	0.16	(2)	
2022	0.33	1.28	5.96	0.005	0.17	0.16	(2)	
2023	0.32	1.28	5.88	0.005	0.17	0.15	(2)	
2024	0.32	1.28	5.80	0.005	0.16	0.15	(2)	
2025	0.31	1.28	5.73	0.005	0.16	0.15	(2)	
2026	0.31	1.28	5.65	0.005	0.16	0.14	(2)	
2027	0.30	1.28	5.58	0.005	0.15	0.14	(2)	
2028	0.30	1.28	5.51	0.005	0.15	0.14	(2)	
2029	0.29	1.28	5.43	0.005	0.15	0.13	(2)	
2030	0.29	1.28	5.37	0.005	0.14	0.13	(2)	
2031	0.28	1.28	5.30	0.005	0.14	0.13	(2)	
2032	0.28	1.28	5.23	0.005	0.14	0.13	(2)	
2033	0.28	1.28	5.17	0.005	0.13	0.12	(2)	
2034	0.27	1.28	5.10	0.005	0.13	0.12	(2)	
2035	0.27	1.28	5.05	0.005	0.13	0.12	(2)	
2036	0.27	1.28	5.05	0.005	0.13	0.12	(2)	
2037	0.26	1.28	5.03	0.005	0.13	0.12	(2)	
2038	0.26	1.28	5.01	0.005	0.12	0.11	(2)	
2039	0.26	1.28	4.99	0.005	0.12	0.11	(2)	
2040	0.26	1.28	4.98	0.005	0.12	0.11	(2)	

(1) Represents national average emission factors for line haul locomotives for a given year (EPA 1998). Line haul diesel fuel assumed to have 1,927 ppm sulfur content (Working Draft NNI Strategy, City of Los Angeles, March 18, 2005) prior to 6/1/07; then max 500 ppm S content starting 6/1/07 and max 15 ppm S content starting 2012, per EPA Nonroad Diesel Fuel Rule.

(2) Represents national average emission factors for line haul locomotives for a given year (EPA 1998) + the use of ULSD (15 ppm) required by EPA in 2012.

Table E1.2-PP-162. Control Efficiencies for Locomotive Mitigation Measures

<i>Control Measure</i>	<i>Control Efficiency</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Diesel Particulate Filter	0%	0%	0%	0%	85%	85%

Source: Archana Agrawal/Starcrest, 2/27/08.

Table E1.2-PP-163. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-PP-164. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.42	0.19	0.01	0.01	0.01
Top Picks (1)	0.11	1.10	4.53	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.84	5.94	32.60	0.71	1.07	0.99
Line Haul Locomotive (near Port) - Road Haul	0.10	0.31	1.70	0.04	0.06	0.05
Line Haul Locomotive at Railyard	0.09	0.31	1.68	0.04	0.06	0.05
Yard Locomotive - Switching	0.05	0.17	0.67	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.66	0.07	0.00	0.00	0.00
Top Picks (1)	0.04	0.41	1.70	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.84	5.94	32.60	0.71	1.07	0.99
Line Haul Locomotive (near Port) - Road Haul	0.10	0.31	1.70	0.04	0.06	0.05
Line Haul Locomotive at Railyard	0.06	0.20	1.12	0.02	0.04	0.03
Yard Locomotive - Switching	0.05	0.17	0.67	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.07	0.18	0.01	0.01	0.01
Top Picks	0.17	1.03	4.22	0.00	0.13	0.12
Line Haul Locomotive (SCAB) - Road Haul	1.35	4.38	24.03	0.52	0.79	0.73
Line Haul Locomotive at Railyard	0.09	0.28	1.55	0.03	0.05	0.05
Yard Locomotive - Switching	0.08	0.16	1.24	0.00	0.04	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.53	0.07	0.00	0.00	0.00
Top Picks	0.06	0.39	1.58	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.35	4.38	24.03	0.52	0.79	0.73
Line Haul Locomotive at Railyard	0.06	0.19	1.03	0.02	0.03	0.03
Yard Locomotive - Switching	0.08	0.16	1.24	0.00	0.04	0.03

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-165. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.06	0.31	0.02	0.02	0.02
Top Picks (1)	0.19	1.77	7.19	0.01	0.21	0.19
Line Haul Locomotive (SCAB) - Road Haul	2.55	8.91	45.69	0.03	1.38	1.27
Line Haul Locomotive (near Port) - Road Haul	0.13	0.47	2.39	0.00	0.07	0.07
Line Haul Locomotive at Railyard	0.13	0.46	2.36	0.00	0.07	0.07
Yard Locomotive - Switching (2)	0.07	0.25	1.00	0.00	0.03	0.03
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.65	0.12	0.01	0.01	0.01
Top Picks (1)	0.07	0.66	2.70	0.00	0.08	0.07
Line Haul Locomotive (SCAB) - Road Haul	2.55	8.91	45.69	0.03	1.38	1.27
Line Haul Locomotive (near Port) - Road Haul	0.13	0.47	2.39	0.00	0.07	0.07
Line Haul Locomotive at Railyard	0.09	0.31	1.57	0.00	0.05	0.04
Yard Locomotive - Switching	0.07	0.25	1.00	0.00	0.03	0.03
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.04	6.37	0.28	0.01	0.02	0.02
Top Picks	0.17	1.59	6.48	0.01	0.19	0.17
Line Haul Locomotive (SCAB) - Road Haul	1.84	6.43	32.98	0.02	1.00	0.92
Line Haul Locomotive at Railyard	0.12	0.41	2.13	0.00	0.06	0.06
Yard Locomotive - Switching	0.12	0.23	1.59	0.00	0.05	0.05
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	2.39	0.10	0.01	0.01	0.01
Top Picks	0.06	0.60	2.43	0.00	0.07	0.06
Line Haul Locomotive (SCAB) - Road Haul	1.84	6.43	32.98	0.02	1.00	0.92
Line Haul Locomotive at Railyard	0.08	0.28	1.42	0.00	0.04	0.04
Yard Locomotive - Switching	0.12	0.23	1.59	0.00	0.05	0.05

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-166. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.85	0.34	0.02	0.02	0.02
Top Picks (1)	0.08	1.05	0.91	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.23	9.91	41.55	0.04	1.11	1.02
Line Haul Locomotive (near Port) - Road Haul	0.12	0.52	2.17	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.12	0.51	2.14	0.00	0.06	0.05
Yard Locomotive - Switching (2)	0.08	0.28	1.12	0.00	0.03	0.03
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.94	0.13	0.01	0.01	0.01
Top Picks (1)	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.23	9.91	41.55	0.04	1.11	1.02
Line Haul Locomotive (near Port) - Road Haul	0.12	0.52	2.17	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.08	0.34	1.43	0.00	0.04	0.04
Yard Locomotive - Switching	0.08	0.28	1.12	0.00	0.03	0.03
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.06	9.08	0.40	0.02	0.03	0.02
Top Picks	0.09	1.21	1.05	0.01	0.02	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.07	9.18	38.48	0.03	1.03	0.94
Line Haul Locomotive at Railyard	0.13	0.59	2.48	0.00	0.07	0.06
Yard Locomotive - Switching	0.14	0.33	1.82	0.00	0.06	0.05
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	3.41	0.15	0.01	0.01	0.01
Top Picks	0.03	0.45	0.39	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.07	9.18	38.48	0.03	1.03	0.94
Line Haul Locomotive at Railyard	0.09	0.39	1.65	0.00	0.04	0.04
Yard Locomotive - Switching	0.14	0.33	1.82	0.00	0.06	0.05

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-167. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.85	0.34	0.02	0.02	0.02
Top Picks (1)	0.08	1.05	0.91	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.00	9.91	38.55	0.04	0.94	0.87
Line Haul Locomotive (near Port) - Road Haul	0.10	0.52	2.02	0.00	0.05	0.05
Line Haul Locomotive at Railyard	0.10	0.51	1.99	0.00	0.05	0.04
Yard Locomotive - Switching (2)	0.08	0.28	1.12	0.00	0.03	0.03
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.94	0.13	0.01	0.01	0.01
Top Picks (1)	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.00	9.91	38.55	0.04	0.94	0.87
Line Haul Locomotive (near Port) - Road Haul	0.10	0.52	2.02	0.00	0.05	0.05
Line Haul Locomotive at Railyard	0.07	0.34	1.33	0.00	0.03	0.03
Yard Locomotive - Switching	0.08	0.28	1.12	0.00	0.03	0.03
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.06	9.08	0.40	0.02	0.03	0.02
Top Picks	0.09	1.21	1.05	0.01	0.02	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.85	9.18	35.70	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.12	0.59	2.30	0.00	0.06	0.05
Yard Locomotive - Switching	0.11	0.33	1.53	0.00	0.04	0.04
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	3.41	0.15	0.01	0.01	0.01
Top Picks	0.03	0.45	0.39	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.85	9.18	35.70	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.08	0.39	1.54	0.00	0.04	0.03
Yard Locomotive - Switching	0.11	0.33	1.53	0.00	0.04	0.04

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2005

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-PP-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2010

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2015

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2030

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.3	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-172. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.3	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-PP-173. Annual Train and Associated Cargo Handling Equipment Emissions

Proposed Project with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Table E1.2-PP-174. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.42	0.19	0.01	0.01	0.01
Top Picks (1)	0.11	1.10	4.53	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.84	5.94	32.60	0.71	1.07	0.99
Line Haul Locomotive (near Port) - Road Haul	0.10	0.31	1.70	0.04	0.06	0.05
Line Haul Locomotive at Railyard	0.09	0.31	1.68	0.04	0.06	0.05
Yard Locomotive - Switching	0.05	0.17	0.67	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.66	0.07	0.00	0.00	0.00
Top Picks (1)	0.04	0.41	1.70	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.84	5.94	32.60	0.71	1.07	0.99
Line Haul Locomotive (near Port) - Road Haul	0.10	0.31	1.70	0.04	0.06	0.05
Line Haul Locomotive at Railyard	0.06	0.20	1.12	0.02	0.04	0.03
Yard Locomotive - Switching	0.05	0.17	0.67	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.07	0.18	0.01	0.01	0.01
Top Picks	0.17	1.03	4.22	0.00	0.13	0.12
Line Haul Locomotive (SCAB) - Road Haul	1.35	4.38	24.03	0.52	0.79	0.73
Line Haul Locomotive at Railyard	0.09	0.28	1.55	0.03	0.05	0.05
Yard Locomotive - Switching	0.08	0.16	1.24	0.00	0.04	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.53	0.07	0.00	0.00	0.00
Top Picks	0.06	0.39	1.58	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.35	4.38	24.03	0.52	0.79	0.73
Line Haul Locomotive at Railyard	0.06	0.19	1.03	0.02	0.03	0.03
Yard Locomotive - Switching	0.08	0.16	1.24	0.00	0.04	0.03

Table E1.2-PP-175. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.06	0.31	0.02	0.02	0.02
Top Picks (1)	0.06	0.85	0.75	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.55	8.91	45.69	0.03	1.38	1.27
Line Haul Locomotive (near Port) - Road Haul	0.13	0.47	2.39	0.00	0.07	0.07
Line Haul Locomotive at Railyard	0.13	0.46	2.36	0.00	0.07	0.07
Yard Locomotive - Switching (1)	0.07	0.25	1.00	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.65	0.12	0.01	0.01	0.01
Top Picks	0.02	0.32	0.28	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.55	8.91	45.69	0.03	1.38	1.27
Line Haul Locomotive (near Port) - Road Haul	0.13	0.47	2.39	0.00	0.07	0.07
Line Haul Locomotive at Railyard	0.09	0.31	1.57	0.00	0.05	0.04
Yard Locomotive - Switching (1)	0.07	0.25	1.00	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.04	6.37	0.28	0.01	0.02	0.02
Top Picks	0.17	1.59	6.48	0.01	0.19	0.17
Line Haul Locomotive (SCAB) - Road Haul	1.84	6.43	32.98	0.02	1.00	0.92
Line Haul Locomotive at Railyard	0.12	0.41	2.13	0.00	0.06	0.06
Yard Locomotive - Switching	0.12	0.23	1.59	0.00	0.05	0.05
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	2.39	0.10	0.01	0.01	0.01
Top Picks	0.06	0.60	2.43	0.00	0.07	0.06
Line Haul Locomotive (SCAB) - Road Haul	1.84	6.43	32.98	0.02	1.00	0.92
Line Haul Locomotive at Railyard	0.08	0.28	1.42	0.00	0.04	0.04
Yard Locomotive - Switching	0.12	0.23	1.59	0.00	0.05	0.05

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-PP-176. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.85	0.34	0.02	0.02	0.02
Top Picks (1)	0.08	1.05	0.91	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.23	9.91	41.55	0.04	1.11	1.02
Line Haul Locomotive (near Port) - Road Haul	0.12	0.52	2.17	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.12	0.51	2.14	0.00	0.06	0.05
Yard Locomotive - Switching (1)	0.08	0.28	1.12	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.94	0.13	0.01	0.01	0.01
Top Picks	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.23	9.91	41.55	0.04	1.11	1.02
Line Haul Locomotive (near Port) - Road Haul	0.12	0.52	2.17	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.08	0.34	1.43	0.00	0.04	0.04
Yard Locomotive - Switching (1)	0.08	0.28	1.12	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.06	9.08	0.40	0.02	0.03	0.02
Top Picks	0.09	1.21	1.05	0.01	0.02	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.07	9.18	38.48	0.03	1.03	0.94
Line Haul Locomotive at Railyard	0.13	0.59	2.48	0.00	0.07	0.06
Yard Locomotive - Switching	0.14	0.33	1.82	0.00	0.06	0.05
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	3.41	0.15	0.01	0.01	0.01
Top Picks	0.03	0.45	0.39	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.07	9.18	38.48	0.03	1.03	0.94
Line Haul Locomotive at Railyard	0.09	0.39	1.65	0.00	0.04	0.04
Yard Locomotive - Switching	0.14	0.33	1.82	0.00	0.06	0.05

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-PP-177. Annual Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.85	0.34	0.02	0.02	0.02
Top Picks (1)	0.08	1.05	0.91	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.00	9.91	38.55	0.04	0.94	0.87
Line Haul Locomotive (near Port) - Road Haul	0.10	0.52	2.02	0.00	0.05	0.05
Line Haul Locomotive at Railyard	0.10	0.51	1.99	0.00	0.05	0.04
Yard Locomotive - Switching (1)	0.08	0.28	1.12	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.94	0.13	0.01	0.01	0.01
Top Picks	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.00	9.91	38.55	0.04	0.94	0.87
Line Haul Locomotive (near Port) - Road Haul	0.10	0.52	2.02	0.00	0.05	0.05
Line Haul Locomotive at Railyard	0.07	0.34	1.33	0.00	0.03	0.03
Yard Locomotive - Switching (1)	0.08	0.28	1.12	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.06	9.08	0.40	0.02	0.03	0.02
Top Picks	0.09	1.21	1.05	0.01	0.02	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.85	9.18	35.70	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.12	0.59	2.30	0.00	0.06	0.05
Yard Locomotive - Switching	0.11	0.33	1.53	0.00	0.04	0.04
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	3.41	0.15	0.01	0.01	0.01
Top Picks	0.03	0.45	0.39	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.85	9.18	35.70	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.08	0.39	1.54	0.00	0.04	0.03
Yard Locomotive - Switching	0.11	0.33	1.53	0.00	0.04	0.04

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-PP-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Table E1.2-PP-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2010

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

**Table E1.2-PP-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2015**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.3	5.0	4.4	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	1.9	1.7	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Table E1.2-PP-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5

Table E1.2-PP-182. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4

Table E1.2-PP-183. Summary of Annual Train and Associated Cargo Handling Equipment Emissions

Proposed Project

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.5	14.6	12.5	0.0	0.4	0.3
Trains	6.9	22.3	122.5	2.6	4.0	3.7
Total	7.4	36.9	135.0	2.6	4.4	4.0
<i>Project Year 2015</i>						
Railyard Equipment	0.6	23.1	19.6	0.1	0.6	0.6
Trains	9.6	33.1	170.0	0.1	5.1	4.7
Total	10.2	56.2	189.6	0.2	5.7	5.3
<i>Project Year 2030</i>						
Railyard Equipment	0.4	26.4	3.7	0.1	0.1	0.1
Trains	9.5	41.2	173.6	0.1	4.7	4.3
Total	9.8	67.6	177.4	0.2	4.8	4.4
<i>Project Year 2045</i>						
Railyard Equipment	0.4	26.4	3.7	0.1	0.1	0.1
Trains	8.5	41.2	160.9	0.1	4.0	3.6
Total	8.8	67.6	164.7	0.2	4.1	3.7

Table E1.2-PP-184. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions

Proposed Project

Project Scenario/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	3.8	142.6	121.1	0.4	3.7	3.4
Trains	77.6	269.4	1,382.6	1.0	41.8	38.4
Total	81.4	411.9	1,503.7	1.3	45.5	41.9
<i>Project Year 2030</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	122.9	538.7	2,265.2	1.9	60.6	55.8
Total	126.5	797.1	2,301.5	2.6	61.7	56.8
<i>Project Year 2045</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	110.2	538.7	2,100.4	1.9	51.5	47.4
Total	113.8	797.1	2,136.7	2.6	52.6	48.4

Table E1.2-PP-185. Summary of Annual Train and Associated Cargo Handling Equipment Emissions

Proposed Project with Mitigation

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.5	14.6	12.5	0.0	0.4	0.3
Trains	6.9	22.3	122.5	2.6	4.0	3.7
Total	7.4	36.9	135.0	2.6	4.4	4.0
<i>Project Year 2015</i>						
Railyard Equipment	0.4	21.8	10.8	0.1	0.3	0.3
Trains	9.6	33.1	170.0	0.1	5.1	4.7
Total	10.0	54.9	180.8	0.2	5.4	5.0
<i>Project Year 2030</i>						
Railyard Equipment	0.4	26.4	3.7	0.1	0.1	0.1
Trains	9.5	41.2	173.6	0.1	4.6	4.2
Total	9.8	67.6	177.4	0.2	4.7	4.3
<i>Project Year 2045</i>						
Railyard Equipment	0.4	26.4	3.7	0.1	0.1	0.1
Trains	8.5	41.2	160.9	0.1	3.9	3.6
Total	8.8	67.6	164.7	0.2	4.0	3.7

**Table E1.2-PP-186. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions
Proposed Project with Mitigation**

<i>Project Scenario/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	2.7	135.2	69.1	0.4	2.1	1.9
Trains	77.6	269.4	1,382.6	1.0	41.5	38.2
Total	80.3	404.5	1,451.7	1.3	43.6	40.1
<i>Project Year 2030</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	122.9	538.7	2,265.2	1.9	60.1	55.3
Total	126.5	797.1	2,301.5	2.6	61.2	56.3
<i>Project Year 2045</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	110.2	538.7	2,100.4	1.9	51.0	46.9
Total	113.8	797.1	2,136.7	2.6	52.0	47.9

Table E1.2-PP-187. Annual Terminal Equipment Emissions Without Mitigation - Proposed Project

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>								
Forklift >120-175	223,897	FL175_U	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_U	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_U	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_U	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_U	0.41	1.45	4.03	0.03	0.19	0.18
Top pick >175-250	6,967,232	TH250_U	4.49	13.52	55.93	0.46	1.97	1.81
Yard tractor >120-175	23,953,325	YTD175_U	21.34	78.20	189.80	1.58	10.19	9.37
Other Equipment	165,929	OTHER_U	0.15	0.66	1.33	0.01	0.09	0.08
Total			28.1	100.8	274.0	2.3	13.3	12.2
<i>Project Year 2010</i>								
Forklift >120-175	336,068	FL175_U	0.15	1.38	3.34	0.00	0.12	0.11
Forklift >175-250	62,475	FL250_U	0.03	0.24	0.63	0.00	0.03	0.02
Forklift >25-50	111,318	FL50_U	0.16	0.86	0.83	0.00	0.08	0.07
RTG >175-250	4,665,436	RTG250_U	2.01	8.59	26.31	0.04	0.95	0.87
Side pick >120-175	638,595	SP175_U	0.31	2.26	6.27	0.00	0.24	0.22
Top pick >175-250	10,457,760	TH250_U	3.61	21.85	89.49	0.08	2.70	2.49
Yard tractor >120-175	35,953,750	YTD175_U	0.68	109.86	4.82	0.27	0.30	0.27
Other Equipment	249,058	OTHER_U	0.16	1.03	2.07	0.00	0.13	0.12
Total			7.1	146.1	133.8	0.4	4.5	4.2
<i>Project Year 2015</i>								
Forklift >120-175	646,591	FL175_U	0.20	2.79	6.54	0.00	0.25	0.23
Forklift >175-250	120,202	FL250_U	0.04	0.48	1.25	0.00	0.05	0.04
Forklift >25-50	214,174	FL50_U	0.21	1.75	1.65	0.00	0.14	0.13
RTG >175-250	8,976,262	RTG250_U	4.17	17.34	43.40	0.07	1.75	1.61
Side pick >120-175	1,228,652	SP175_U	0.41	4.58	12.57	0.01	0.48	0.44
Top pick >175-250	20,120,647	TH250_U	4.75	44.27	180.00	0.15	5.23	4.81
Yard tractor >120-175	69,174,730	YTD175_U	1.46	225.09	9.80	0.53	0.67	0.62
Other Equipment	479,186	OTHER_U	0.15	2.07	4.14	0.00	0.23	0.21
Total			11.4	298.4	259.4	0.8	8.8	8.1
<i>Project Year 2030</i>								
Forklift >120-175	861,270	FL175_U	0.08	2.90	1.34	0.01	0.01	0.01
Forklift >175-250	160,111	FL250_U	0.01	0.19	0.17	0.00	0.00	0.00
Forklift >25-50	285,284	FL50_U	0.05	1.21	0.97	0.00	0.00	0.00
RTG >175-250	11,956,529	RTG250_U	0.98	13.77	11.96	0.09	0.18	0.17
Side pick >120-175	1,636,584	SP175_U	0.16	5.65	2.61	0.01	0.03	0.02
Top pick >175-250	26,801,034	TH250_U	2.26	31.43	27.24	0.20	0.42	0.39
Yard tractor >120-175	92,141,882	YTD175_U	1.95	299.83	13.05	0.70	0.89	0.82
Other Equipment	638,284	OTHER_U	0.07	2.30	1.47	0.01	0.01	0.01
Total			5.6	357.3	58.8	1.0	1.5	1.4
<i>Project Year 2045</i>								
Forklift >120-175	861,270	FL175_U	0.08	2.90	1.34	0.01	0.01	0.01
Forklift >175-250	160,111	FL250_U	0.01	0.19	0.17	0.00	0.00	0.00
Forklift >25-50	285,284	FL50_U	0.05	1.21	0.97	0.00	0.00	0.00
RTG >175-250	11,956,529	RTG250_U	0.98	13.77	11.96	0.09	0.18	0.17
Side pick >120-175	1,636,584	SP175_U	0.16	5.65	2.61	0.01	0.03	0.02
Top pick >175-250	26,801,034	TH250_U	2.26	31.43	27.24	0.20	0.42	0.39
Yard tractor >120-175	92,141,882	YTD175_U	1.95	299.83	13.05	0.70	0.89	0.82
Other Equipment	638,284	OTHER_U	0.07	2.30	1.47	0.01	0.01	0.01
Total			5.6	357.3	58.8	1.0	1.5	1.4

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-PP-188. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Proposed Project

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2005	0.47%	0.88%	0.67%
2010	0.41%	1.68%	1.04%
2015	0.35%	1.04%	0.70%
2030	0.37%	0.90%	0.63%
2045	0.37%	0.90%	0.63%

Note: The percent of annual CHE usage on the peak day represents the average of the landside and dockside percentages. This assumes that landside and dockside CHE usages contribute equally to total CHE usage, and conservatively assumes that the peak days for landside and dockside usages occur simultaneously.

Table E1.2-PP-189. Peak Daily Terminal Equipment Emissions Without Mitigation - Proposed Project

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	5.6	19.5	54.4	0.4	2.6	2.4
Top pick >175-250	60.5	182.2	753.8	6.2	26.6	24.4
Yard tractor >120-175	287.7	1,053.8	2,557.9	21.3	137.3	126.3
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
Total	378.6	1,359.0	3,693.2	31.0	178.8	164.5
<i>Project Year 2010</i>						
Forklift >120-175	3.2	28.7	69.7	0.1	2.6	2.4
Forklift >175-250	0.7	4.9	13.2	0.0	0.5	0.5
Forklift >25-50	3.4	17.9	17.3	0.0	1.6	1.5
RTG >175-250	41.9	179.5	549.5	0.7	19.8	18.2
Side pick >120-175	6.6	47.3	130.9	0.1	5.1	4.7
Top pick >175-250	75.4	456.5	1,869.1	1.7	56.5	51.9
Yard tractor >120-175	14.3	2,294.6	100.6	5.7	6.2	5.7
Other Equipment	3.3	21.4	43.2	0.0	2.7	2.5
Total	148.7	3,050.7	2,793.6	8.3	94.9	87.3
<i>Project Year 2015</i>						
Forklift >120-175	2.8	38.9	91.3	0.1	3.4	3.2
Forklift >175-250	0.6	6.8	17.5	0.0	0.7	0.6
Forklift >25-50	3.0	24.4	23.0	0.0	2.0	1.9
RTG >175-250	58.3	242.0	605.8	1.0	24.4	22.4
Side pick >120-175	5.8	63.9	175.5	0.1	6.6	6.1
Top pick >175-250	66.3	617.8	2,512.3	2.1	73.0	67.1
Yard tractor >120-175	20.4	3,141.8	136.8	7.3	9.4	8.6
Other Equipment	2.1	28.8	57.8	0.1	3.2	2.9
Total	159.3	4,164.3	3,620.0	10.7	122.6	112.8
<i>Project Year 2030</i>						
Forklift >120-175	1.0	36.8	17.0	0.1	0.2	0.2
Forklift >175-250	0.2	2.4	2.1	0.0	0.0	0.0
Forklift >25-50	0.6	15.3	12.3	0.0	0.1	0.0
RTG >175-250	12.4	174.8	151.9	1.2	2.3	2.1
Side pick >120-175	2.1	71.7	33.2	0.2	0.3	0.3
Top pick >175-250	28.7	399.0	345.8	2.6	5.3	4.9
Yard tractor >120-175	24.8	3,806.8	165.7	8.9	11.3	10.4
Other Equipment	0.8	29.2	18.6	0.1	0.1	0.1
Total	70.6	4,536.0	746.6	13.0	19.6	18.1
<i>Project Year 2045</i>						
Forklift >120-175	1.0	36.8	17.0	0.1	0.2	0.2
Forklift >175-250	0.2	2.4	2.1	0.0	0.0	0.0
Forklift >25-50	0.6	15.3	12.3	0.0	0.1	0.0
RTG >175-250	12.4	174.8	151.9	1.2	2.3	2.1
Side pick >120-175	2.1	71.7	33.2	0.2	0.3	0.3
Top pick >175-250	28.7	399.0	345.8	2.6	5.3	4.9
Yard tractor >120-175	24.8	3,806.8	165.7	8.9	11.3	10.4
Other Equipment	0.8	29.2	18.6	0.1	0.1	0.1
Total	70.6	4,536.0	746.6	13.0	19.6	18.1

Table E1.2-PP-190. Annual Terminal Equipment Emissions With Mitigation - Proposed Project

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	223,897	FL175_M	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_M	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_M	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_M	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_M	0.15	0.48	3.23	0.03	0.10	0.09
Top pick >175-250	6,967,232	TH250_M	1.66	4.46	44.75	0.46	0.99	0.91
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	165,929	OTHER_M	0.15	0.66	1.33	0.01	0.09	0.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	23,953,325	YTP175_M	29.72	480.39	123.81	-	1.58	1.58
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			33.4	493.0	196.1	0.7	3.6	3.4
Project Year 2010								
Forklift >120-175	336,068	FL175_M	0.15	1.36	3.30	0.00	0.13	0.12
Forklift >175-250	62,475	FL250_M	0.03	0.24	0.63	0.00	0.03	0.02
Forklift >25-50	111,318	FL50_M	0.16	0.86	0.83	0.00	0.08	0.07
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	638,595	SP175_M	0.20	2.26	6.27	0.00	0.22	0.20
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	249,058	OTHER_M	0.15	1.01	2.03	0.00	0.12	0.11
LPG Top pick >175-250	10,457,760	THP250_M	3.95	245.78	21.54	-	0.69	0.69
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	35,953,750	YTP175_M	65.04	1,062.68	211.39	-	2.38	2.38
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			69.7	1,314.2	246.0	0.0	3.6	3.6
Project Year 2015								
Forklift >120-175	646,591	FL175_M	0.05	1.98	0.93	0.00	0.01	0.01
Forklift >175-250	120,202	FL250_M	0.01	0.13	0.11	0.00	0.00	0.00
Forklift >25-50	214,174	FL50_M	0.02	0.23	0.20	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	1,228,652	SP175_M	0.10	3.77	1.72	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	479,186	OTHER_M	0.05	1.66	1.06	0.00	0.01	0.01
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	20,120,647	THN250_M	0.37	60.68	2.67	-	0.16	0.16
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	69,174,730	YTN175_M_REPL	1.29	208.62	9.16	-	0.55	0.55
Total			1.9	277.1	15.9	0.0	0.7	0.7
Project Year 2030								
Forklift >120-175	861,270	FL175_M	0.08	2.90	1.34	0.01	0.01	0.01
Forklift >175-250	160,111	FL250_M	0.01	0.19	0.17	0.00	0.00	0.00
Forklift >25-50	285,284	FL50_M	0.03	0.34	0.30	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	1,636,584	SP175_M	0.16	5.65	2.61	0.01	0.03	0.02
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	638,284	OTHER_M	0.07	2.30	1.47	0.01	0.01	0.01
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	26,801,034	THN250_M	0.53	84.02	3.67	-	0.24	0.24
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	92,141,882	YTN175_M_REPL	1.83	288.86	12.63	-	0.82	0.82
Total			2.7	384.3	22.2	0.0	1.1	1.1
Project Year 2045								
Forklift >120-175	861,270	FL175_M	0.08	2.90	1.34	0.01	0.01	0.01
Forklift >175-250	160,111	FL250_M	0.01	0.19	0.17	0.00	0.00	0.00
Forklift >25-50	285,284	FL50_M	0.03	0.34	0.30	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	1,636,584	SP175_M	0.16	5.65	2.61	0.01	0.03	0.02
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	638,284	OTHER_M	0.07	2.30	1.47	0.01	0.01	0.01
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	26,801,034	THN250_M	0.51	81.89	3.59	-	0.22	0.22
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	92,141,882	YTN175_M_REPL	1.75	281.54	12.35	-	0.76	0.76
Total			2.6	374.8	21.8	0.0	1.0	1.0

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-PP-191. Peak Daily Terminal Equipment Emissions With Mitigation - Proposed Project

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	2.1	6.4	43.5	0.4	1.3	1.2
Top pick >175-250	22.4	60.1	603.1	6.2	13.3	12.2
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	400.5	6,474.1	1,668.5	-	21.4	21.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	449.8	6,644.1	2,642.1	9.8	48.3	46.1
<i>Project Year 2010</i>						
Forklift >120-175	3.2	28.5	68.9	0.1	2.7	2.5
Forklift >175-250	0.7	4.9	13.2	0.0	0.5	0.5
Forklift >25-50	3.4	17.9	17.3	0.0	1.6	1.5
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	4.1	47.3	130.9	0.1	4.6	4.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	3.2	21.0	42.5	0.0	2.6	2.4
LPG Top pick >175-250	82.5	5,133.5	449.9	-	14.4	14.4
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	1,358.4	22,195.6	4,415.3	-	49.7	49.7
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	1,455.5	27,448.7	5,138.0	0.2	76.1	75.1
<i>Project Year 2015</i>						
Forklift >120-175	0.7	27.7	13.0	0.1	0.1	0.1
Forklift >175-250	0.1	1.8	1.6	0.0	0.0	0.0
Forklift >25-50	0.2	3.2	2.8	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	1.4	52.6	24.0	0.1	0.2	0.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.6	23.2	14.9	0.1	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	5.2	847.0	37.2	-	2.2	2.2
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	18.0	2,911.9	127.9	-	7.7	7.7
Total	26.3	3,867.2	221.3	0.3	10.4	10.4
<i>Project Year 2030</i>						
Forklift >120-175	1.0	36.8	17.0	0.1	0.2	0.2
Forklift >175-250	0.2	2.4	2.1	0.0	0.0	0.0
Forklift >25-50	0.3	4.4	3.8	0.0	0.1	0.1
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	2.1	71.7	33.2	0.2	0.3	0.3
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.8	29.2	18.6	0.1	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	6.8	1,066.8	46.6	-	3.0	3.0
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	23.3	3,667.5	160.3	-	10.4	10.4
Total	34.4	4,878.7	281.7	0.4	14.1	14.0
<i>Project Year 2045</i>						
Forklift >120-175	1.0	36.8	17.0	0.1	0.2	0.2
Forklift >175-250	0.2	2.4	2.1	0.0	0.0	0.0
Forklift >25-50	0.3	4.4	3.8	0.0	0.1	0.1
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	2.1	71.7	33.2	0.2	0.3	0.3
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.8	29.2	18.6	0.1	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	6.5	1,039.8	45.6	-	2.8	2.8
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	22.3	3,574.7	156.8	-	9.7	9.7
Total	33.2	4,758.9	277.1	0.4	13.2	13.1

Table E1.2-PP-192. Emissions from RTG Electricity Consumption - Mitigated Project

Project Scenario/Activity	Pollutant					
	VOC	CO	NOx	SOx	PM10	PM2.5
Annual Emissions (tons per year)						
Year 2005	-	-	-	-	-	-
Year 2010	0.02	0.35	2.00	0.21	0.07	0.07
Year 2015	0.03	0.67	3.85	0.40	0.13	0.13
Year 2030	0.04	0.89	5.13	0.54	0.18	0.18
Year 2045	0.04	0.89	5.13	0.54	0.18	0.18
Peak Daily Emissions (lb/day)						
Year 2005	-	-	-	-	-	-
Year 2010	0.36	7.27	41.80	4.36	1.45	1.45
Year 2015	0.47	9.35	53.74	5.61	1.87	1.87
Year 2030	0.57	11.32	65.12	6.79	2.26	2.26
Year 2045	0.57	11.32	65.12	6.79	2.26	2.26

Note: These emissions represent regional power plant emissions associated with electricity generation.

Table E1.2-PP-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	28.1	100.8	274.0	2.3	13.3	12.2
Year 2010	7.1	146.1	133.8	0.4	4.5	4.2
Year 2015	11.4	298.4	259.4	0.8	8.8	8.1
Year 2030	5.6	357.3	58.8	1.0	1.5	1.4
Year 2045	5.6	357.3	58.8	1.0	1.5	1.4

Table E1.2-PP-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Proposed Project without Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	379	1,359	3,693	31	179	165
Year 2010	149	3,051	2,794	8	95	87
Year 2015	159	4,164	3,620	11	123	113
Year 2030	71	4,536	747	13	20	18
Year 2045	71	4,536	747	13	20	18

Table E1.2-PP-195. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	33.4	493.0	196.1	0.7	3.6	3.4
Year 2010	69.7	1,314.5	248.0	0.2	3.7	3.7
Year 2015	1.9	277.7	19.7	0.4	0.9	0.9
Year 2030	2.8	385.1	27.3	0.6	1.3	1.3
Year 2045	2.7	375.7	27.0	0.6	1.2	1.2

Emissions include electricity consumption by electric RTGs.

Table E1.2-PP-196. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Proposed Project with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	450	6,644	2,642	10	48	46
Year 2010	1,456	27,456	5,180	5	78	77
Year 2015	27	3,877	275	6	12	12
Year 2030	35	4,890	347	7	16	16
Year 2045	34	4,770	342	7	15	15

Emissions include electricity consumption by electric RTGs.

Table E1.2-PP-197. Peak Daily Operational Emissions Without Mitigation

Proposed Project	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	379	1,359	3,693	31	179	165
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	945	3,428	12,785	5,651	1,027	824
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	784	2,822	11,262	5,622	942	747
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	453	-3,840	9,894	5,640	974	774
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	303	643	7,587	7,362	888	710
Ships - Hoteling	74	200	2,653	4,811	411	329
Tugboats	3	21	112	0	4	4
Trucks	403	1,724	3,443	6	313	150
Trains	78	269	1,383	1	42	38
Railyard Equipment	4	143	121	0	4	3
Terminal Equipment	159	4,164	3,620	11	123	113
Worker Commuter Vehicles	9	107	14	0	29	6
Total - Project Year 2015	1,033	7,272	18,933	12,192	1,814	1,353
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	871	6,665	17,410	12,164	1,729	1,275
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	1,013	4,981	18,740	12,191	1,807	1,346
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	315	668	7,876	7,625	921	737
Ships - Hoteling	74	200	2,653	4,811	411	329
Tugboats	3	21	84	0	4	3
Trucks	207	883	1,861	8	263	74
Trains	123	539	2,265	2	61	56
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	71	4,536	747	13	20	18
Worker Commuter Vehicles	6	65	7	0	35	7
Total - Project Year 2030	802	7,170	15,528	12,460	1,716	1,225
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	641	6,564	14,005	12,432	1,631	1,147
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	780	4,777	15,323	12,460	1,708	1,217
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	315	668	7,876	7,625	921	737
Ships - Hoteling	74	200	2,653	4,811	411	329
Tugboats	3	21	84	0	4	3
Trucks	194	828	1,762	8	259	71
Trains	110	539	2,100	2	52	47
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	71	4,536	747	13	20	18
Worker Commuter Vehicles	5	55	5	0	35	7
Total - Project Year 2045	775	7,105	15,263	12,460	1,703	1,213
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	614	6,498	13,740	12,432	1,618	1,135
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	754	4,768	15,060	12,460	1,695	1,206
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-PP-198. Average Daily Operational Emissions Without Mitigation

Proposed Project	Emission Source	Average Daily Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005							
	Ships - Transit and Anchoring	31	65	725	419	64	51
	Ships - Hoteling	16	42	548	472	49	39
	Tugboats	1	3	19	1	1	1
	Trucks	189	894	1,663	12	129	86
	Trains	23	64	444	29	15	14
	Railyard Equipment	11	40	114	1	5	5
	Terminal Equipment	154	553	1,502	13	73	67
	Worker Commuter Vehicles	6	71	9	0	8	2
	Total - Project Year 2005	431	1,732	5,024	946	344	265
CEQA Impacts							
	CEQA Baseline Emissions	60	225	566	10	31	29
	Project minus CEQA Baseline	371	1,507	4,458	936	313	236
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts							
	NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
	Project minus NEPA Baseline	248	-969	3,949	942	325	246
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015							
	Ships - Transit and Anchoring	117	245	2,713	1,561	240	192
	Ships - Hoteling	31	83	1,080	924	96	77
	Tugboats	1	10	56	0	2	2
	Trucks	302	1,290	2,577	5	235	112
	Trains	52	181	932	1	28	26
	Railyard Equipment	3	126	107	0	3	3
	Terminal Equipment	63	1,635	1,421	4	48	44
	Worker Commuter Vehicles	7	88	12	0	24	5
	Total - Project Year 2015	576	3,660	8,898	2,495	676	461
CEQA Impacts							
	CEQA Baseline Emissions	60	225	566	10	31	29
	Project minus CEQA Baseline	516	3,434	8,332	2,484	645	432
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts							
	NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
	Project minus NEPA Baseline	569	2,808	8,826	2,495	674	458
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030							
	Ships - Transit and Anchoring	160	336	3,711	2,127	328	263
	Ships - Hoteling	35	96	1,243	1,055	110	88
	Tugboats	2	13	54	0	2	2
	Trucks	169	721	1,521	6	215	61
	Trains	52	226	951	1	26	23
	Railyard Equipment	2	145	20	0	1	1
	Terminal Equipment	30	1,958	322	6	8	8
	Worker Commuter Vehicles	5	53	6	0	29	6
	Total - Project Year 2030	456	3,548	7,828	3,196	719	451
CEQA Impacts							
	CEQA Baseline Emissions	60	225	566	10	31	29
	Project minus CEQA Baseline	396	3,323	7,262	3,186	688	422
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts							
	NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
	Project minus NEPA Baseline	448	2,659	7,752	3,196	717	448
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045							
	Ships - Transit and Anchoring	160	336	3,711	2,127	328	263
	Ships - Hoteling	35	96	1,243	1,055	110	88
	Tugboats	2	13	54	0	2	2
	Trucks	158	676	1,440	6	212	58
	Trains	46	226	882	1	22	20
	Railyard Equipment	2	145	20	0	1	1
	Terminal Equipment	30	1,958	322	6	8	8
	Worker Commuter Vehicles	4	45	4	0	29	6
	Total - Project Year 2045	439	3,494	7,677	3,196	713	445
CEQA Impacts							
	CEQA Baseline Emissions	60	225	566	10	31	29
	Project minus CEQA Baseline	379	3,269	7,111	3,186	681	416
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts							
	NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
	Project minus NEPA Baseline	431	2,626	7,601	3,196	710	442
	Thresholds	55	550	55	150	150	55
	Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-PP-199. Peak Daily Operational Emissions With Mitigation

Proposed Project Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	450	6,644	2,642	10	48	46
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	1,016	8,714	11,734	5,629	896	706
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	855	8,107	10,211	5,601	812	628
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	524	1,445	8,843	5,619	844	656
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	207	400	2,439	135	87	69
Ships - Hoteling	5	23	163	60	15	13
Tugboats	3	21	112	0	4	4
Trucks	140	480	1,207	2	213	59
Trains	78	269	1,383	1	42	38
Railyard Equipment	3	135	69	0	2	2
Terminal Equipment	27	3,877	275	6	12	12
Worker Commuter Vehicles	9	107	14	0	29	6
Total - Project Year 2015	470	5,312	5,663	204	404	202
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	309	4,706	4,140	176	320	125
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	450	3,021	5,470	204	397	196
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	215	415	2,510	138	90	72
Ships - Hoteling	5	23	163	60	15	13
Tugboats	3	21	84	0	4	3
Trucks	239	710	2,089	0	277	91
Trains	123	539	2,265	2	60	55
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	35	4,890	347	7	16	16
Worker Commuter Vehicles	6	65	7	0	35	7
Total - Project Year 2030	629	6,921	7,501	209	499	259
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	467	6,314	5,978	180	414	181
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	606	4,528	7,296	208	491	251
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	215	415	2,510	138	90	72
Ships - Hoteling	5	23	163	60	15	13
Tugboats	3	21	84	0	4	3
Trucks	239	710	2,089	0	277	91
Trains	110	539	2,100	2	51	47
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	34	4,770	342	7	15	15
Worker Commuter Vehicles	5	55	5	0	35	7
Total - Project Year 2045	614	6,790	7,330	209	489	249
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	453	6,184	5,807	180	404	171
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	592	4,454	7,127	208	481	242
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-PP-200. Average Daily Operational Emissions With Mitigation

Proposed Project Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	7	20	243	270	24	19
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	183	2,701	1,074	4	20	19
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	451	3,859	4,292	735	266	197
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	391	3,633	3,726	724	235	168
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	268	1,158	3,218	731	247	178
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	91	180	1,172	69	40	32
Ships - Hoteling	2	11	76	28	7	6
Tugboats	1	10	56	0	2	2
Trucks	105	359	903	1	160	44
Trains	52	181	932	1	28	26
Railyard Equipment	2	120	59	0	2	2
Terminal Equipment	11	1,522	108	2	5	5
Worker Commuter Vehicles	7	88	12	0	24	5
Total - Project Year 2015	272	2,471	3,317	102	267	121
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	212	2,245	2,751	92	236	92
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	264	1,619	3,245	102	265	118
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	125	247	1,595	93	55	44
Ships - Hoteling	3	12	86	32	8	7
Tugboats	2	13	54	0	2	2
Trucks	195	580	1,707	0	226	75
Trains	52	226	951	1	25	23
Railyard Equipment	2	145	20	0	1	1
Terminal Equipment	15	2,110	150	3	7	7
Worker Commuter Vehicles	5	53	6	0	29	6
Total - Project Year 2030	398	3,387	4,569	130	354	164
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	338	3,161	4,003	119	322	135
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	390	2,497	4,492	130	351	161
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	125	247	1,595	93	55	44
Ships - Hoteling	3	12	86	32	8	7
Tugboats	2	13	54	0	2	2
Trucks	195	580	1,707	0	226	75
Trains	46	226	882	1	21	20
Railyard Equipment	2	145	20	0	1	1
Terminal Equipment	15	2,059	148	3	7	7
Worker Commuter Vehicles	4	45	4	0	29	6
Total - Project Year 2045	391	3,326	4,496	130	349	160
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	331	3,101	3,930	119	318	131
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	383	2,458	4,420	130	347	157
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Table E1.2-BL-186. Annual Terminal Equipment Emissions Without Mitigation - CEQA Baseline

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
<i>Year 2001 Baseline</i>								
Forklift >120-175	25,063	FL175_U	0.05	0.16	0.39	0.01	0.03	0.03
Forklift >175-250	4,659	FL250_U	0.01	0.02	0.06	0.00	0.00	0.00
Forklift >25-50	8,302	FL50_U	0.04	0.10	0.06	0.00	0.01	0.01
RTG >175-250	347,942	RTG250_U	1.04	3.42	7.90	0.08	0.67	0.62
Side pick >120-175	47,626	SP175_U	0.06	0.18	0.50	0.01	0.03	0.03
Top pick >175-250	779,926	TH250_U	0.87	2.49	8.09	0.16	0.49	0.45
Yard tractor >120-175	2,681,382	YTD175_U	8.87	34.71	86.13	1.65	4.50	4.14
Other Equipment	18,574	OTHER_U	0.02	0.06	0.17	0.00	0.01	0.01
Total			10.9	41.2	103.3	1.9	5.7	5.3

Table E1.2-BL-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - CEQA Baseline

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2001			0.74%

For this alternative, there are no trucks, trains, or ships. So there is no way to directly calculate peak daily CHE usage. Therefore, use the average value of all study years for the Proposed Project.

Table E1.2-BL-188. Peak Daily Terminal Equipment Emissions - CEQA Baseline

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Year 2001 Baseline</i>						
Forklift >120-175	0.7	2.4	5.8	0.1	0.4	0.4
Forklift >175-250	0.1	0.3	0.9	0.0	0.0	0.0
Forklift >25-50	0.6	1.5	0.9	0.0	0.2	0.1
RTG >175-250	15.3	50.4	116.5	1.2	9.9	9.1
Side pick >120-175	0.9	2.7	7.3	0.1	0.5	0.5
Top pick >175-250	12.8	36.7	119.3	2.4	7.2	6.6
Yard tractor >120-175	130.7	511.7	1,269.8	24.4	66.4	61.1
Other Equipment	0.2	0.9	2.5	0.1	0.1	0.1
Total	161.3	606.7	1,523.0	28.2	84.6	77.9

Table E1.2-BL-191. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - CEQA Baseline

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2001 Baseline	10.9	41.2	103.3	1.9	5.7	5.3

Table E1.2-BL-192. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - CEQA Baseline

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2001 Baseline	161	607	1,523	28	85	78

**Table E1.2-BL-195. Baseline (2001) Peak Daily Operational Emissions (CEQA Baseline)
Berths 97-109 Terminal**

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2001 Baseline						
Terminal Equipment	161	607	1,523	28	85	78
Total - Year 2001 Baseline	161	607	1,523	28	85	78

**Table E1.2-BL-196. Baseline (2001) Average Daily Operational Emissions (CEQA Baseline)
Berths 97-109 Terminal**

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2001 Baseline						
Terminal Equipment	60	225	566	10	31	29
Total - Year 2001 Baseline	60	225	566	10	31	29

Table E1.2-Alt1-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 1

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2005			0.74%
2010			0.74%
2015			0.74%
2030			0.74%
2045			0.74%

For this alternative, there are no trucks, trains, or ships. So there is no way to directly calculate peak daily CHE usage. Therefore, use the average value of all study years for the Proposed Project.

Table E1.2-Alt1-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 1

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	223,897	FL175_M	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_M	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_M	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_M	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_M	0.15	0.48	3.23	0.03	0.10	0.09
Top pick >175-250	6,967,232	TH250_M	1.66	4.46	44.75	0.46	0.99	0.91
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	165,929	OTHER_M	0.15	0.66	1.33	0.01	0.09	0.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	23,953,325	YTP175_M	29.72	480.39	123.81	-	1.58	1.58
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			33.4	493.0	196.1	0.7	3.6	3.4
Project Year 2010								
Forklift >120-175	231,893	FL175_M	0.10	0.94	2.27	0.00	0.09	0.08
Forklift >175-250	43,109	FL250_M	0.02	0.16	0.44	0.00	0.02	0.02
Forklift >25-50	76,811	FL50_M	0.11	0.59	0.57	0.00	0.05	0.05
RTG >175-250	3,219,243	RTG250_M	1.38	5.93	18.15	0.02	0.65	0.60
Side pick >120-175	440,643	SP175_M	0.14	1.56	4.33	0.00	0.15	0.14
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	171,855	OTHER_M	0.11	0.69	1.40	0.00	0.08	0.08
LPG Top pick >175-250	7,216,062	THP250_M	2.73	169.59	14.86	-	0.48	0.48
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	24,808,801	YTP175_M	44.88	733.27	145.87	-	1.64	1.64
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			49.5	912.7	187.9	0.0	3.2	3.1
Project Year 2015								
Forklift >120-175	239,890	FL175_M	0.02	0.74	0.34	0.00	0.00	0.00
Forklift >175-250	44,596	FL250_M	0.00	0.05	0.04	0.00	0.00	0.00
Forklift >25-50	79,460	FL50_M	0.01	0.08	0.07	0.00	0.00	0.00
RTG >175-250	3,330,252	RTG250_M	0.23	3.48	3.07	0.03	0.04	0.04
Side pick >120-175	455,838	SP175_M	0.04	1.40	0.64	0.00	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	177,781	OTHER_M	0.02	0.62	0.39	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	7,464,892	THN250_M	0.14	22.51	0.99	-	0.06	0.06
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	25,664,277	YTN175_M_REPL	0.48	77.40	3.40	-	0.21	0.21
Total			0.9	106.3	9.0	0.0	0.3	0.3
Project Year 2030								
Forklift >120-175	253,828	FL175_M	0.02	0.85	0.40	0.00	0.00	0.00
Forklift >175-250	47,187	FL250_M	0.00	0.06	0.05	0.00	0.00	0.00
Forklift >25-50	84,077	FL50_M	0.01	0.10	0.09	0.00	0.00	0.00
RTG >175-250	3,523,745	RTG250_M	0.29	4.06	3.53	0.03	0.05	0.05
Side pick >120-175	482,323	SP175_M	0.05	1.67	0.77	0.00	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	188,111	OTHER_M	0.02	0.68	0.43	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	7,898,616	THN250_M	0.16	24.76	1.08	-	0.07	0.07
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	27,155,419	YTN175_M_REPL	0.54	85.13	3.72	-	0.24	0.24
Total			1.1	117.3	10.1	0.0	0.4	0.4
Project Year 2045								
Forklift >120-175	253,828	FL175_M	0.02	0.85	0.40	0.00	0.00	0.00
Forklift >175-250	47,187	FL250_M	0.00	0.06	0.05	0.00	0.00	0.00
Forklift >25-50	84,077	FL50_M	0.01	0.10	0.09	0.00	0.00	0.00
RTG >175-250	3,523,745	RTG250_M	0.29	4.06	3.53	0.03	0.05	0.05
Side pick >120-175	482,323	SP175_M	0.05	1.67	0.77	0.00	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	188,111	OTHER_M	0.02	0.68	0.43	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	7,898,616	THN250_M	0.15	24.13	1.06	-	0.07	0.07
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	27,155,419	YTN175_M_REPL	0.52	82.97	3.64	-	0.22	0.22
Total			1.1	114.5	10.0	0.0	0.4	0.4

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-A11-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 1

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.9	12.6	31.5	0.2	1.5	1.4
Forklift >175-250	0.6	2.2	6.0	0.0	0.3	0.3
Forklift >25-50	3.1	7.9	7.9	0.1	0.9	0.8
RTG >175-250	18.3	80.8	292.8	3.0	9.5	8.8
Side pick >120-175	2.3	7.1	47.6	0.4	1.4	1.3
Top pick >175-250	24.5	65.8	659.7	6.8	14.5	13.4
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	2.2	9.7	19.6	0.2	1.3	1.2
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	438.1	7,082.3	1,825.3	-	23.4	23.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	492.1	7,268.3	2,890.3	10.7	52.8	50.5
<i>Project Year 2010</i>						
Forklift >120-175	1.5	13.9	33.5	0.0	1.3	1.2
Forklift >175-250	0.3	2.4	6.4	0.0	0.3	0.2
Forklift >25-50	1.7	8.7	8.4	0.0	0.8	0.7
RTG >175-250	20.4	87.4	267.6	0.4	9.6	8.9
Side pick >120-175	2.0	23.0	63.8	0.0	2.2	2.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	1.6	10.2	20.7	0.0	1.2	1.1
LPG Top pick >175-250	40.2	2,500.3	219.1	-	7.0	7.0
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	661.6	10,810.5	2,150.5	-	24.2	24.2
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	729.3	13,456.4	2,770.1	0.5	46.7	45.4
<i>Project Year 2015</i>						
Forklift >120-175	0.3	10.8	5.1	0.0	0.0	0.0
Forklift >175-250	0.0	0.7	0.6	0.0	0.0	0.0
Forklift >25-50	0.1	1.2	1.1	0.0	0.0	0.0
RTG >175-250	3.4	51.3	45.3	0.4	0.6	0.5
Side pick >120-175	0.5	20.6	9.4	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	9.1	5.8	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.0	331.9	14.6	-	0.9	0.9
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	7.0	1,141.1	50.1	-	3.0	3.0
Total	13.7	1,566.8	132.0	0.5	4.7	4.6
<i>Project Year 2030</i>						
Forklift >120-175	0.4	12.6	5.8	0.0	0.1	0.1
Forklift >175-250	0.1	0.8	0.7	0.0	0.0	0.0
Forklift >25-50	0.1	1.5	1.3	0.0	0.0	0.0
RTG >175-250	4.3	59.8	52.0	0.4	0.8	0.7
Side pick >120-175	0.7	24.5	11.3	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	10.0	6.4	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.3	365.1	16.0	-	1.0	1.0
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	8.0	1,255.1	54.9	-	3.5	3.5
Total	16.0	1,729.4	148.4	0.5	5.6	5.5
<i>Project Year 2045</i>						
Forklift >120-175	0.4	12.6	5.8	0.0	0.1	0.1
Forklift >175-250	0.1	0.8	0.7	0.0	0.0	0.0
Forklift >25-50	0.1	1.5	1.3	0.0	0.0	0.0
RTG >175-250	4.3	59.8	52.0	0.4	0.8	0.7
Side pick >120-175	0.7	24.5	11.3	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	10.0	6.4	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.2	355.8	15.6	-	1.0	1.0
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	7.6	1,223.3	53.6	-	3.3	3.3
Total	15.6	1,688.4	146.8	0.5	5.3	5.2

Table E1.2-Alt1-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 1 with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	33.4	493.0	196.1	0.7	3.6	3.4
Year 2010	49.5	912.7	187.9	0.0	3.2	3.1
Year 2015	0.9	106.3	9.0	0.0	0.3	0.3
Year 2030	1.1	117.3	10.1	0.0	0.4	0.4
Year 2045	1.1	114.5	10.0	0.0	0.4	0.4

Emissions include electricity consumption by electric RTGs.

Table E1.2-Alt1-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 1 with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	492	7,268	2,890	11	53	50
Year 2010	729	13,456	2,770	0	47	45
Year 2015	14	1,567	132	0	5	5
Year 2030	16	1,729	148	1	6	6
Year 2045	16	1,688	147	1	5	5

**Table E1.2-Alt1-197. Peak Daily Operational Emissions With Mitigation
Alternative 1**

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Terminal Equipment	492	7,268	2,890	11	53	50
Total - Project Year 2005	492	7,268	2,890	11	53	50
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	331	6,662	1,367	-18	-32	-27
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
Project Year 2015						
Terminal Equipment	14	1,567	132	0	5	5
Total - Project Year 2015	14	1,567	132	0	5	5
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	-148	960	-1,391	-28	-80	-73
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
Project Year 2030						
Terminal Equipment	16	1,729	148	1	6	6
Total - Project Year 2030	16	1,729	148	1	6	6
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	-145	1,123	-1,375	-28	-79	-72
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
Project Year 2045						
Terminal Equipment	16	1,688	147	1	5	5
Total - Project Year 2045	16	1,688	147	1	5	5
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	-146	1,082	-1,376	-28	-79	-73
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No

Table E1.2-Alt1-198. Average Daily Operational Emissions With Mitigation

Alternative 1

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Terminal Equipment	183	2,701	1,074	4	20	19
Total - Project Year 2005	183	2,701	1,074	4	20	19
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	123	2,476	508	-7	-12	-10
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
Project Year 2015						
Terminal Equipment	5	582	49	0	2	2
Total - Project Year 2015	5	582	49	0	2	2
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	-55	357	-517	-10	-30	-27
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2030						
Terminal Equipment	6	643	55	0	2	2
Total - Project Year 2030	6	643	55	0	2	2
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	-54	417	-511	-10	-29	-27
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2045						
Terminal Equipment	6	628	55	0	2	2
Total - Project Year 2045	6	628	55	0	2	2
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	-54	402	-511	-10	-29	-27
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No

Table E1.2-Alt2-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment -
Alternative 2

Year	Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)	Dockside Percent of Annual TEUs Moved on Peak Day (Ships)	Percent of Annual CHE Usage on Peak Day
2005			0.74%
2010			0.74%
2015			0.74%
2030			0.74%
2045			0.74%

For this alternative, there are no trucks, trains, or ships. So there is no way to directly calculate peak daily CHE usage. Therefore, use the average value of all study years for the Proposed Project.

Table E1.2-Alt2-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 2

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	223,897	FL175_M	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_M	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_M	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_M	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_M	0.15	0.48	3.23	0.03	0.10	0.09
Top pick >175-250	6,967,232	TH250_M	1.66	4.46	44.75	0.46	0.99	0.91
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	165,929	OTHER_M	0.15	0.66	1.33	0.01	0.09	0.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	23,953,325	YTP175_M	29.72	480.39	123.81	-	1.58	1.58
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			33.4	493.0	196.1	0.7	3.6	3.4
Project Year 2010								
Forklift >120-175	276,762	FL175_M	0.12	1.12	2.71	0.00	0.11	0.10
Forklift >175-250	51,450	FL250_M	0.03	0.20	0.52	0.00	0.02	0.02
Forklift >25-50	91,673	FL50_M	0.13	0.70	0.68	0.00	0.06	0.06
RTG >175-250	3,842,124	RTG250_M	1.65	7.08	21.67	0.03	0.78	0.72
Side pick >120-175	525,902	SP175_M	0.16	1.86	5.16	0.00	0.18	0.17
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	205,107	OTHER_M	0.13	0.83	1.68	0.00	0.10	0.09
LPG Top pick >175-250	8,612,273	THP250_M	3.25	202.41	17.74	-	0.57	0.57
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	29,608,971	YTP175_M	53.56	875.15	174.09	-	1.96	1.96
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			59.0	1,089.3	224.3	0.0	3.8	3.7
Project Year 2015								
Forklift >120-175	350,839	FL175_M	0.03	1.08	0.50	0.00	0.00	0.00
Forklift >175-250	65,221	FL250_M	0.00	0.07	0.06	0.00	0.00	0.00
Forklift >25-50	116,210	FL50_M	0.01	0.12	0.11	0.00	0.00	0.00
RTG >175-250	4,870,493	RTG250_M	0.34	5.09	4.49	0.04	0.06	0.05
Side pick >120-175	666,663	SP175_M	0.05	2.04	0.93	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	260,005	OTHER_M	0.03	0.90	0.58	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	10,917,404	THN250_M	0.20	32.93	1.45	-	0.09	0.09
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	37,534,004	YTN175_M_REPL	0.70	113.20	4.97	-	0.30	0.30
Total			1.4	155.4	13.1	0.0	0.5	0.5
Project Year 2030								
Forklift >120-175	351,227	FL175_M	0.03	1.18	0.55	0.00	0.01	0.00
Forklift >175-250	65,293	FL250_M	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	116,339	FL50_M	0.01	0.14	0.12	0.00	0.00	0.00
RTG >175-250	4,875,889	RTG250_M	0.40	5.61	4.88	0.04	0.07	0.07
Side pick >120-175	667,401	SP175_M	0.07	2.30	1.07	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	260,293	OTHER_M	0.03	0.94	0.60	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	10,929,500	THN250_M	0.22	34.26	1.50	-	0.10	0.10
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	37,575,590	YTN175_M_REPL	0.75	117.80	5.15	-	0.33	0.33
Total			1.5	162.3	13.9	0.0	0.5	0.5
Project Year 2045								
Forklift >120-175	351,227	FL175_M	0.03	1.18	0.55	0.00	0.01	0.00
Forklift >175-250	65,293	FL250_M	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	116,339	FL50_M	0.01	0.14	0.12	0.00	0.00	0.00
RTG >175-250	4,875,889	RTG250_M	0.40	5.61	4.88	0.04	0.07	0.07
Side pick >120-175	667,401	SP175_M	0.07	2.30	1.07	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	260,293	OTHER_M	0.03	0.94	0.60	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	10,929,500	THN250_M	0.21	33.40	1.46	-	0.09	0.09
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	37,575,590	YTN175_M_REPL	0.72	114.81	5.04	-	0.31	0.31
Total			1.5	158.5	13.8	0.0	0.5	0.5

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-A12-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 2

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Forklift >120-175	2.9	12.6	31.5	0.2	1.5	1.4
Forklift >175-250	0.6	2.2	6.0	0.0	0.3	0.3
Forklift >25-50	3.1	7.9	7.9	0.1	0.9	0.8
RTG >175-250	18.3	80.8	292.8	3.0	9.5	8.8
Side pick >120-175	2.3	7.1	47.6	0.4	1.4	1.3
Top pick >175-250	24.5	65.8	659.7	6.8	14.5	13.4
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	2.2	9.7	19.6	0.2	1.3	1.2
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	438.1	7,082.3	1,825.3	-	23.4	23.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	492.1	7,268.3	2,890.3	10.7	52.8	50.5
Project Year 2010						
Forklift >120-175	1.8	16.5	40.0	0.0	1.6	1.4
Forklift >175-250	0.4	2.9	7.7	0.0	0.3	0.3
Forklift >25-50	2.0	10.4	10.1	0.0	0.9	0.9
RTG >175-250	24.4	104.3	319.4	0.4	11.5	10.6
Side pick >120-175	2.4	27.5	76.1	0.1	2.7	2.4
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	1.9	12.2	24.7	0.0	1.5	1.4
LPG Top pick >175-250	48.0	2,984.1	261.5	-	8.4	8.4
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	789.6	12,902.2	2,566.6	-	28.9	28.9
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	870.4	16,060.1	3,306.1	0.6	55.7	54.2
Project Year 2015						
Forklift >120-175	0.4	15.9	7.4	0.0	0.1	0.1
Forklift >175-250	0.1	1.0	0.9	0.0	0.0	0.0
Forklift >25-50	0.1	1.8	1.6	0.0	0.0	0.0
RTG >175-250	5.0	75.1	66.2	0.5	0.9	0.8
Side pick >120-175	0.8	30.1	13.8	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.4	13.3	8.5	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	3.0	485.4	21.3	-	1.3	1.3
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	10.3	1,668.9	73.3	-	4.4	4.4
Total	20.1	2,291.5	193.0	0.7	6.8	6.7
Project Year 2030						
Forklift >120-175	0.5	17.4	8.1	0.0	0.1	0.1
Forklift >175-250	0.1	1.2	1.0	0.0	0.0	0.0
Forklift >25-50	0.2	2.1	1.8	0.0	0.0	0.0
RTG >175-250	5.9	82.8	71.9	0.5	1.1	1.0
Side pick >120-175	1.0	34.0	15.7	0.1	0.2	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.4	13.8	8.8	0.0	0.1	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	3.2	505.1	22.1	-	1.4	1.4
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	11.0	1,736.7	75.9	-	4.9	4.9
Total	22.2	2,393.0	205.3	0.7	7.7	7.6
Project Year 2045						
Forklift >120-175	0.5	17.4	8.1	0.0	0.1	0.1
Forklift >175-250	0.1	1.2	1.0	0.0	0.0	0.0
Forklift >25-50	0.2	2.1	1.8	0.0	0.0	0.0
RTG >175-250	5.9	82.8	71.9	0.5	1.1	1.0
Side pick >120-175	1.0	34.0	15.7	0.1	0.2	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.4	13.8	8.8	0.0	0.1	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	3.1	492.3	21.6	-	1.3	1.3
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	10.5	1,692.7	74.2	-	4.6	4.6
Total	21.6	2,336.2	203.1	0.7	7.3	7.2

Table E1.2-A1t2-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 2 with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	33.4	493.0	196.1	0.7	3.6	3.4
Year 2010	59.0	1,089.3	224.3	0.0	3.8	3.7
Year 2015	1.4	155.4	13.1	0.0	0.5	0.5
Year 2030	1.5	162.3	13.9	0.0	0.5	0.5
Year 2045	1.5	158.5	13.8	0.0	0.5	0.5

Emissions include electricity consumption by electric RTGs.

Table E1.2-A1t2-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 2 with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	492	7,268	2,890	11	53	50
Year 2010	870	16,060	3,306	1	56	54
Year 2015	20	2,291	193	1	7	7
Year 2030	22	2,393	205	1	8	8
Year 2045	22	2,336	203	1	7	7

**Table E1.2-Alt2-197. Peak Daily Operational Emissions With Mitigation
Alternative 2**

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Terminal Equipment	492	7,268	2,890	11	53	50
Total - Project Year 2005	492	7,268	2,890	11	53	50
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	331	6,662	1,367	-18	-32	-27
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2015						
Terminal Equipment	20	2,291	193	1	7	7
Total - Project Year 2015	20	2,291	193	1	7	7
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	-141	1,685	-1,330	-28	-78	-71
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2030						
Terminal Equipment	22	2,393	205	1	8	8
Total - Project Year 2030	22	2,393	205	1	8	8
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	-139	1,786	-1,318	-28	-77	-70
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2045						
Terminal Equipment	22	2,336	203	1	7	7
Total - Project Year 2045	22	2,336	203	1	7	7
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	-140	1,729	-1,320	-28	-77	-71
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No

Table E1.2-Alt2-198. Average Daily Operational Emissions With Mitigation

Alternative 2

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Terminal Equipment	183	2,701	1,074	4	20	19
Total - Project Year 2005	183	2,701	1,074	4	20	19
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	123	2,476	508	-7	-12	-10
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2015						
Terminal Equipment	7	852	72	0	3	3
Total - Project Year 2015	7	852	72	0	3	3
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	-52	626	-494	-10	-29	-26
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2030						
Terminal Equipment	8	889	76	0	3	3
Total - Project Year 2030	8	889	76	0	3	3
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	-52	664	-490	-10	-29	-26
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No
Project Year 2045						
Terminal Equipment	8	868	75	0	3	3
Total - Project Year 2045	8	868	75	0	3	3
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	-52	643	-491	-10	-29	-26
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	No	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	0	0	0	0	0	0
Thresholds	55	550	55	150	150	55
Significant?	No	No	No	No	No	No

Table E1.2-Alt3-1. Annual Ship Visit Data - Alternative 3

<i>Project Scenario/Ship Type</i>	<i>Annual Ship Visits</i>	<i>Avg Hoteling per Ship (hr)</i>
Project Year 2005		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	42	70.0
Containerships 3,000 - 5,000 TEU	10	51.7
General Cargo Vessels	-	-
Total	52	
Project Year 2010		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	8	64.4
Containerships 5,000 - 6,000 TEU	47	42.7
Containerships 3,000 - 5,000 TEU	23	31.9
General Cargo Vessels	-	-
Total	78	
Project Year 2015		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	21	56.0
Containerships 5,000 - 6,000 TEU	62	37.3
Containerships 3,000 - 5,000 TEU	21	27.9
General Cargo Vessels	-	-
Total	104	
Project Year 2030 / 2045		
Containerships 9,000 - 11,000 TEU	10	51.3
Containerships 8,000 - 9,000 TEU	33	44.0
Containerships 5,000 - 6,000 TEU	69	29.5
Containerships 3,000 - 5,000 TEU	18	22.3
General Cargo Vessels	-	-
Total	130	

Table E1.2-Alt3-2. Peak Day Ship Visit Data - Alternative 3

<i>Project Scenario/Ship Type</i>	<i>Peak Day Arrivals</i>	<i>Peak Day Departures</i>	<i>Peak Day Hoteling (hr)</i>	
			<i>Without Mitigation</i>	<i>With Mitigation</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1		20.4	20.4
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	20.4
Project Year 2010				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU	1		20.4	18.8
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	18.8
Project Year 2015				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU	1		20.4	18.8
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	18.8
Project Year 2030 / 2045				
Containerships 9,000 - 11,000 TEU	1		20.4	18.8
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	18.8

Notes: (1) Hoteling time equals 24 hours minus vessel transit time within the SCAB. Because the Vessel Speed Reduction (VSR) program increases transit time, the hoteling times are shorter when VSR is implemented as mitigation. For the Mitigated Project, VSR is assumed for 2010, 2015, 2030, and 2045. VSR is not assumed for the unmitigated project and for the 2005 mitigated project.

Table E1.2-Alt3-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP)

Alternative 3

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel</i>	<i>Load Factor (1)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	70.0	127,267
Containerships 3,000 - 5,000 TEU	6,526	0.20	51.7	67,533
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	64.4	130,476
Containerships 5,000 - 6,000 TEU	11,360	0.16	42.7	77,698
Containerships 3,000 - 5,000 TEU	6,526	0.20	31.9	41,645
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	56.0	113,411
Containerships 5,000 - 6,000 TEU	11,360	0.16	37.3	67,787
Containerships 3,000 - 5,000 TEU	6,526	0.20	27.9	36,470
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	51.3	103,814
Containerships 8,000 - 9,000 TEU	13,501	0.15	44.0	89,154
Containerships 5,000 - 6,000 TEU	11,360	0.16	29.5	53,700
Containerships 3,000 - 5,000 TEU	6,526	0.20	22.3	29,113
General Cargo Vessels	1,776	0.22	-	-

(1) Source: POLA 2005 Emission Inventory Report.

Table E1.2-Alt3-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit

Alternative 3

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel (1)</i>	<i>Load Factor (2)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	4.1	8,303
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-

Note: Average anchoring time was derived from actual anchoring data for China

Shipping ship visits for 2004, 2005, and 2006, provided by Starcrest and POLA.

Table E1.2-Alt3-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit

Alternative 3

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	70.0	10.806
Containerships 3,000 - 5,000 TEU	0.1543	51.7	7.985
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	64.4	9.943
Containerships 5,000 - 6,000 TEU	0.1543	42.7	6.597
Containerships 3,000 - 5,000 TEU	0.1543	31.9	4.924
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	56.0	8.643
Containerships 5,000 - 6,000 TEU	0.1543	37.3	5.756
Containerships 3,000 - 5,000 TEU	0.1543	27.9	4.312
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	51.3	7.911
Containerships 8,000 - 9,000 TEU	0.1543	44.0	6.794
Containerships 5,000 - 6,000 TEU	0.1543	29.5	4.560
Containerships 3,000 - 5,000 TEU	0.1543	22.3	3.442
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt3-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit

Alternative 3

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	4.1	0.633
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt3-18. Annual Emissions from OGV Main Engine - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.40	0.93	12.02	7.00	1.00	0.80
Containerships 5,000 - 6,000 TEU	1.74	4.07	52.58	30.59	4.36	3.49
Containerships 3,000 - 5,000 TEU	0.68	1.58	20.49	11.92	1.70	1.36
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	6.6	85.1	49.5	7.1	5.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.06	2.48	32.06	18.65	2.66	2.13
Containerships 5,000 - 6,000 TEU	2.32	5.42	70.11	40.79	5.81	4.65
Containerships 3,000 - 5,000 TEU	0.60	1.41	18.21	10.60	1.51	1.21
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.0	9.3	120.4	70.0	10.0	8.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.57	1.33	17.17	9.99	1.42	1.14
Containerships 8,000 - 9,000 TEU	1.66	3.88	50.10	29.15	4.15	3.32
Containerships 5,000 - 6,000 TEU	2.57	5.99	77.41	45.04	6.42	5.13
Containerships 3,000 - 5,000 TEU	0.53	1.23	15.94	9.27	1.32	1.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.3	12.4	160.6	93.4	13.3	10.6

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt3-19. Annual Emissions from OGV Main Engine - Alternative 3

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.35	0.77	8.31	4.56	0.72	0.57
Containerships 5,000 - 6,000 TEU	1.52	3.39	36.32	19.93	3.14	2.51
Containerships 3,000 - 5,000 TEU	0.55	1.27	14.66	8.27	1.24	0.99
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.4	5.4	59.3	32.7	5.1	4.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.92	2.06	22.15	12.15	1.92	1.53
Containerships 5,000 - 6,000 TEU	2.02	4.52	48.43	26.57	4.19	3.35
Containerships 3,000 - 5,000 TEU	0.49	1.13	13.03	7.35	1.10	0.88
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.4	7.7	83.6	46.1	7.2	5.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.50	1.11	11.86	6.51	1.03	0.82
Containerships 8,000 - 9,000 TEU	1.44	3.23	34.61	18.99	2.99	2.39
Containerships 5,000 - 6,000 TEU	2.23	4.99	53.47	29.34	4.62	3.70
Containerships 3,000 - 5,000 TEU	0.43	0.99	11.40	6.43	0.97	0.77
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	10.3	111.3	61.3	9.6	7.7

Assumes VSRP compliance at the 2005 level.

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt3-20. Annual Emissions from OGV Main Engine - Alternative 3

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.14	0.29	2.09	0.93	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.63	1.25	9.16	4.08	0.90	0.72
Containerships 3,000 - 5,000 TEU	0.21	0.45	3.79	1.88	0.35	0.28
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	2.0	15.0	6.9	1.4	1.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.38	0.76	5.58	2.48	0.55	0.44
Containerships 5,000 - 6,000 TEU	0.84	1.66	12.21	5.43	1.19	0.95
Containerships 3,000 - 5,000 TEU	0.19	0.40	3.37	1.67	0.31	0.25
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	2.8	21.2	9.6	2.1	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.21	0.41	2.99	1.33	0.29	0.23
Containerships 8,000 - 9,000 TEU	0.60	1.19	8.73	3.88	0.85	0.68
Containerships 5,000 - 6,000 TEU	0.92	1.84	13.48	6.00	1.32	1.05
Containerships 3,000 - 5,000 TEU	0.16	0.35	2.95	1.46	0.27	0.22
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	3.8	28.1	12.7	2.7	2.2

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt3-21. Annual Emissions from OGV Main Engine - Alternative 3

Harbor Transit - Inbound

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.45	0.06	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.29	0.33	1.97	0.28	0.26	0.21
Containerships 3,000 - 5,000 TEU	0.09	0.12	0.69	0.13	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	3.1	0.5	0.4	0.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.18	0.20	1.20	0.17	0.16	0.13
Containerships 5,000 - 6,000 TEU	0.39	0.43	2.63	0.37	0.34	0.28
Containerships 3,000 - 5,000 TEU	0.08	0.10	0.61	0.11	0.08	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	4.4	0.7	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.10	0.11	0.64	0.09	0.08	0.07
Containerships 8,000 - 9,000 TEU	0.28	0.31	1.88	0.26	0.25	0.20
Containerships 5,000 - 6,000 TEU	0.43	0.48	2.91	0.41	0.38	0.30
Containerships 3,000 - 5,000 TEU	0.07	0.09	0.53	0.10	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	1.0	6.0	0.9	0.8	0.6

Assumes main engines use residual fuel with 2.7% sulfur content.

**Table E1.2-Alt3-22. Annual Emissions from OGV Main Engine - Alternative 3
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.07	0.38	0.08	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.21	0.29	1.66	0.36	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.07	0.10	0.61	0.17	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.5	2.6	0.6	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.17	1.01	0.22	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.28	0.38	2.22	0.48	0.27	0.22
Containerships 3,000 - 5,000 TEU	0.06	0.09	0.54	0.15	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.6	3.8	0.9	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.07	0.09	0.54	0.12	0.07	0.05
Containerships 8,000 - 9,000 TEU	0.20	0.27	1.58	0.35	0.19	0.16
Containerships 5,000 - 6,000 TEU	0.31	0.42	2.45	0.53	0.30	0.24
Containerships 3,000 - 5,000 TEU	0.05	0.08	0.47	0.13	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.9	5.0	1.1	0.6	0.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt3-23. Annual Emissions from OGV Main Engine - Alternative 3

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.03	0.21	0.03	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.94	0.12	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.34	0.04	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.2	1.5	0.2	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.09	0.57	0.07	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.19	0.20	1.25	0.16	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.30	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.14	0.14	0.89	0.11	0.12	0.09
Containerships 5,000 - 6,000 TEU	0.21	0.22	1.38	0.17	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.04	0.04	0.26	0.03	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.5	2.8	0.4	0.4	0.3

Assumes main engines use residual fuel with 2.7% sulfur content.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt3-24. Annual Emissions from OGV Main Engine - Alternative 3

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.46	0.06	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.30	0.33	2.01	0.25	0.27	0.21
Containerships 3,000 - 5,000 TEU	0.11	0.12	0.72	0.09	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	3.2	0.4	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.20	1.23	0.15	0.16	0.13
Containerships 5,000 - 6,000 TEU	0.41	0.43	2.68	0.34	0.36	0.28
Containerships 3,000 - 5,000 TEU	0.10	0.10	0.64	0.08	0.08	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.7	4.5	0.6	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.10	0.11	0.66	0.08	0.09	0.07
Containerships 8,000 - 9,000 TEU	0.29	0.31	1.92	0.24	0.25	0.20
Containerships 5,000 - 6,000 TEU	0.45	0.48	2.96	0.37	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.08	0.09	0.56	0.07	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	1.0	6.1	0.8	0.8	0.6

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt3-25. Max Daily Emissions from OGV Main Engine - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	54.7	127.7	1,651.2	1,601.0	181.7	145.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	54.7	127.7	1,651.2	1,601.0	181.7	145.3

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt3-26. Max Daily Emissions from OGV Main Engine - Alternative 3

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	71.7	167.3	2,163.0	2,097.2	238.0	190.4
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	71.7	167.3	2,163.0	2,097.2	238.0	190.4

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt3-27. Max Daily Emissions from OGV Main Engine - Alternative 3

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	268.5	199.1	34.8	27.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	268.5	199.1	34.8	27.9
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	19.7	39.2	287.6	213.3	37.3	29.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	19.7	39.2	287.6	213.3	37.3	29.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt3-28. Max Daily Emissions from OGV Main Engine - Alternative 3
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	18.3	20.5	124.0	29.1	21.5	17.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.3	20.5	124.0	29.1	21.5	17.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt3-29. Max Daily Emissions from OGV Main Engine - Alternative 3
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-30. Max Daily Emissions from OGV Main Engine - Alternative 3

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	8.9	9.6	58.9	12.4	10.4	8.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	58.9	12.4	10.4	8.3

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt3-31. Max Daily Emissions from OGV Main Engine - Alternative 3

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	59.0	12.4	10.4	8.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	59.0	12.4	10.4	8.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	9.6	10.2	63.2	13.2	11.1	8.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.6	10.2	63.2	13.2	11.1	8.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-32. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.32	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.63	1.36	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.51	0.42	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.5	2.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.86	0.72	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.17	1.81	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.45	0.38	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.5	2.9	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.43	0.36	0.04	0.04
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.34	1.12	0.14	0.11
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.40	2.00	0.24	0.20
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.40	0.33	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.6	3.8	0.5	0.4

All aux engines are assumed to use residual fuel in the fairway.

**Table E1.2-Alt3-33. Annual Emissions from OGV Auxiliary Engines - Alternative 3
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.70	0.58	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.10	0.26	3.53	2.94	0.36	0.29
Containerships 3,000 - 5,000 TEU	0.03	0.08	1.03	0.86	0.11	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	5.3	4.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.14	1.86	1.55	0.19	0.15
Containerships 5,000 - 6,000 TEU	0.13	0.35	4.70	3.92	0.48	0.38
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.92	0.76	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.5	6.2	0.8	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.07	0.93	0.78	0.10	0.08
Containerships 8,000 - 9,000 TEU	0.08	0.22	2.91	2.43	0.30	0.24
Containerships 5,000 - 6,000 TEU	0.14	0.39	5.19	4.33	0.53	0.42
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.80	0.67	0.08	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	9.8	8.2	1.0	0.8

Assumes VSRP compliance at the 2005 level.

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-A1t3-34. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.41	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.60	0.39	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.10	0.71	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.78	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.53	0.34	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.4	2.8	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.55	0.36	0.04	0.04
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.72	1.11	0.14	0.11
Containerships 5,000 - 6,000 TEU	0.08	0.23	3.07	1.98	0.24	0.20
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.47	0.30	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.7	0.5	0.4

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-35. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Harbor Transit - Inbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.57	0.37	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.12	0.72	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.77	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.50	0.32	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.4	2.8	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.56	0.36	0.04	0.04
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.75	1.13	0.14	0.11
Containerships 5,000 - 6,000 TEU	0.08	0.23	3.06	1.97	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.28	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.7	0.5	0.4

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt3-36. Annual Emissions from OGV Auxiliary Engines - Alternative 3
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.37	0.24	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.82	1.17	0.14	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.50	0.32	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.7	1.7	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.98	0.63	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.42	1.56	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.28	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.8	2.5	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.04	0.49	0.32	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.04	0.12	1.53	0.99	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.68	1.73	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.39	0.25	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	5.1	3.3	0.4	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-37. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.20	0.13	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.97	0.63	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.4	0.9	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.04	0.52	0.34	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.29	0.83	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.23	0.15	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.0	1.3	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.82	0.53	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.43	0.92	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.13	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.7	1.7	0.2	0.2

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-38. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.57	0.37	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.12	0.72	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.77	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.50	0.32	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.4	2.8	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.56	0.36	0.04	0.04
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.75	1.13	0.14	0.11
Containerships 5,000 - 6,000 TEU	0.08	0.23	3.06	1.97	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.28	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.7	0.5	0.4

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-39. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.36	6.48	85.25	54.99	6.79	5.43
Containerships 3,000 - 5,000 TEU	0.30	0.82	10.77	6.95	0.86	0.69
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.3	96.0	61.9	7.6	6.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.45	1.23	16.23	10.47	1.29	1.03
Containerships 5,000 - 6,000 TEU	1.60	4.41	57.99	37.41	4.62	3.69
Containerships 3,000 - 5,000 TEU	0.43	1.18	15.54	10.02	1.24	0.99
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	89.8	57.9	7.1	5.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.04	2.86	37.62	24.27	3.00	2.40
Containerships 5,000 - 6,000 TEU	1.87	5.13	67.46	43.51	5.37	4.30
Containerships 3,000 - 5,000 TEU	0.33	0.92	12.10	7.80	0.96	0.77
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.2	8.9	117.2	75.6	9.3	7.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.48	1.31	17.22	11.11	1.37	1.10
Containerships 8,000 - 9,000 TEU	1.28	3.51	46.21	29.81	3.68	2.94
Containerships 5,000 - 6,000 TEU	1.63	4.49	59.01	38.06	4.70	3.76
Containerships 3,000 - 5,000 TEU	0.23	0.64	8.45	5.45	0.67	0.54
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.6	10.0	130.9	84.4	10.4	8.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-40. Annual Emissions from OGV Auxiliary Engines - Alternative 3

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.03	0.67	0.08	0.07
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.56	3.59	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.06	0.15	2.00	1.29	0.16	0.13
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.6	5.5	0.7	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.75	1.78	0.22	0.18
Containerships 5,000 - 6,000 TEU	0.21	0.56	7.42	4.78	0.59	0.47
Containerships 3,000 - 5,000 TEU	0.05	0.13	1.78	1.15	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.9	7.7	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.10	1.38	0.89	0.11	0.09
Containerships 8,000 - 9,000 TEU	0.12	0.33	4.30	2.78	0.34	0.27
Containerships 5,000 - 6,000 TEU	0.23	0.62	8.19	5.28	0.65	0.52
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.55	1.00	0.12	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.2	15.4	9.9	1.2	1.0

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	41.4	57.5	5.8	4.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	41.4	57.5	5.8	4.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	41.4	57.5	5.8	4.7

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-Alt3-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.2	75.3	7.6	6.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.2	75.3	7.6	6.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.2	75.3	7.6	6.1

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

**Table E1.2-Alt3-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Harbor Transit - Inbound

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Harbor Transit - Outbound

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt3-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.4	100.1	1,338.2	1,859.9	188.6	150.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur and no AMP.

Table E1.2-Alt3-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt3-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt3-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt3-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.004	0.009	0.090	0.557	0.029	0.023
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.022	0.133	0.007	0.006
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.017	0.103	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.005	0.010	0.101	0.621	0.033	0.026
Containerships 3,000 - 5,000 TEU	0.002	0.005	0.050	0.310	0.016	0.013
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.0	0.1	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.002	0.004	0.045	0.276	0.014	0.012
Containerships 5,000 - 6,000 TEU	0.007	0.013	0.134	0.828	0.043	0.035
Containerships 3,000 - 5,000 TEU	0.002	0.004	0.045	0.276	0.014	0.012
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.001	0.002	0.022	0.138	0.007	0.006
Containerships 8,000 - 9,000 TEU	0.003	0.007	0.070	0.431	0.023	0.018
Containerships 5,000 - 6,000 TEU	0.007	0.015	0.148	0.914	0.048	0.038
Containerships 3,000 - 5,000 TEU	0.002	0.004	0.039	0.241	0.013	0.010
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.3	1.7	0.1	0.1

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt3-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 3
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.027	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.164	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.013	0.082	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.012	0.073	0.004	0.003
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.219	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.012	0.073	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.006	0.036	0.002	0.002
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.018	0.114	0.006	0.005
Containerships 5,000 - 6,000 TEU	0.002	0.004	0.039	0.242	0.013	0.010
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.010	0.064	0.003	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt3-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 3
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.021	0.129	0.007	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.005	0.031	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.024	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.023	0.144	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.012	0.072	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.010	0.064	0.003	0.003
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.031	0.192	0.010	0.008
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.010	0.064	0.003	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.3	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.005	0.032	0.002	0.001
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.016	0.100	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.034	0.211	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.056	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.011	0.069	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.003	0.016	0.001	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.002	0.013	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.012	0.077	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.038	0.002	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.006	0.034	0.002	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.017	0.102	0.005	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.034	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.003	0.017	0.001	0.001
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.009	0.053	0.003	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.018	0.113	0.006	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.005	0.030	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.027	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.164	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.013	0.082	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.012	0.073	0.004	0.003
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.219	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.012	0.073	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.006	0.036	0.002	0.002
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.018	0.114	0.006	0.005
Containerships 5,000 - 6,000 TEU	0.002	0.004	0.039	0.242	0.013	0.010
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.010	0.064	0.003	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.164	0.328	3.345	20.632	1.080	0.864
Containerships 3,000 - 5,000 TEU	0.029	0.058	0.588	3.630	0.190	0.152
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.028	0.056	0.572	3.526	0.185	0.148
Containerships 5,000 - 6,000 TEU	0.112	0.223	2.275	14.035	0.735	0.588
Containerships 3,000 - 5,000 TEU	0.042	0.083	0.849	5.238	0.274	0.219
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.7	22.8	1.2	1.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.065	0.130	1.325	8.172	0.428	0.342
Containerships 5,000 - 6,000 TEU	0.130	0.260	2.647	16.327	0.855	0.684
Containerships 3,000 - 5,000 TEU	0.032	0.065	0.661	4.077	0.213	0.171
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	4.6	28.6	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.030	0.059	0.606	3.740	0.196	0.157
Containerships 8,000 - 9,000 TEU	0.080	0.160	1.627	10.038	0.525	0.420
Containerships 5,000 - 6,000 TEU	0.114	0.227	2.315	14.281	0.748	0.598
Containerships 3,000 - 5,000 TEU	0.023	0.045	0.462	2.848	0.149	0.119
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	5.0	30.9	1.6	1.3

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 3

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.010	0.019	0.196	1.208	0.063	0.051
Containerships 3,000 - 5,000 TEU	0.002	0.005	0.047	0.288	0.015	0.012
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.002	0.004	0.036	0.224	0.012	0.009
Containerships 5,000 - 6,000 TEU	0.011	0.021	0.218	1.346	0.070	0.056
Containerships 3,000 - 5,000 TEU	0.005	0.011	0.109	0.673	0.035	0.028
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	2.2	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.005	0.010	0.097	0.598	0.031	0.025
Containerships 5,000 - 6,000 TEU	0.014	0.029	0.291	1.795	0.094	0.075
Containerships 3,000 - 5,000 TEU	0.005	0.010	0.097	0.598	0.031	0.025
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	3.0	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.002	0.005	0.048	0.299	0.016	0.013
Containerships 8,000 - 9,000 TEU	0.007	0.015	0.152	0.935	0.049	0.039
Containerships 5,000 - 6,000 TEU	0.016	0.032	0.321	1.982	0.104	0.083
Containerships 3,000 - 5,000 TEU	0.004	0.008	0.085	0.524	0.027	0.022
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	3.7	0.2	0.2

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt3-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt3-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt3-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt3-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Harbor Transit - Outbound

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt3-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt3-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-Alt3-67b. LNG Truck Mitigation Rates
Mitigated Project**

<i>Year</i>	<i>% Trucks</i>
Year 2005	0.0%
Year 2006	0.0%
Year 2007	0.0%
Year 2008	0.0%
Year 2009	0.0%
Year 2010	0.0%
Year 2011	0.0%
Year 2012	50.0%
Year 2013	50.0%
Year 2014	70.0%
Year 2015	70.0%
Year 2016	70.0%
Year 2017	70.0%
Year 2018	100.0%
Year 2019	100.0%
Year 2020	100.0%
Year 2021	100.0%
Year 2022	100.0%
Year 2023	100.0%
Year 2024	100.0%
Year 2025	100.0%
Year 2026	100.0%
Year 2027	100.0%
Year 2028	100.0%
Year 2029	100.0%
Year 2030+	100.0%

Table E1.2-Alt3-68. Annual Emissions from Tugboat Main Engine - Alternative 3

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.10	0.51	3.30	0.22	0.13	0.12
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.08	0.46	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.07	0.46	2.77	0.00	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.03	0.23	1.38	0.00	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.11	0.76	4.61	0.00	0.14	0.13
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.20	1.09	0.00	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.09	0.61	3.27	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	0.03	0.20	1.09	0.00	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.15	1.02	5.45	0.00	0.19	0.18
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.10	0.41	0.00	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.05	0.32	1.27	0.00	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.10	0.67	2.69	0.00	0.12	0.11
Containerships 3,000 - 5,000 TEU	0.03	0.18	0.71	0.00	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.18	1.27	5.07	0.00	0.23	0.21

Table E1.2-Alt3-69. Max Daily Emissions from Tugboat Main Engine - Alternative 3

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	59.10	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	59.1	0.0	1.8	1.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	52.4	0.0	1.8	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	39.0	0.0	1.7	1.6

Table E1.2-Alt3-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 3

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.04	0.21	0.02	0.01	0.01
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.03	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.18	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.05	0.29	0.00	0.01	0.01
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.08	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.23	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.08	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.07	0.38	0.00	0.01	0.01
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.03	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.05	0.19	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.09	0.36	0.00	0.01	0.01

Table E1.2-Alt3-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 3

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.75	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.8	0.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.7	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	2.8	0.0	0.1	0.1

**Table E1.2-Alt3-72. Summary of Annual Marine Vessel Emissions without Mitigation
Alternative 3**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	2.8	7.7	99.9	86.2	8.9	7.1
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	8.6	20.2	235.8	162.8	20.8	16.6
Project Year 2010						
Ships - AQMD to 20 mile	2.9	6.8	87.6	51.6	7.3	5.8
Ships - 20 mile to PA	2.6	5.8	64.5	37.1	5.6	4.5
Ships - PA	1.1	2.2	18.3	9.9	1.8	1.4
Ships - Harbor Transit	0.9	1.4	11.6	5.3	1.2	1.0
Ships - Turning & Docking	0.8	1.1	9.2	3.9	1.0	0.8
Ships - Anchoring	0.3	0.7	9.0	7.8	0.8	0.6
Ships - Hoteling	2.7	7.2	93.5	80.7	8.3	6.7
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.8	4.9	0.0	0.2	0.1
Total	11.3	26.0	298.5	196.3	26.2	21.0
Project Year 2015						
Ships - AQMD to 20 mile	4.1	9.6	123.9	72.9	10.3	8.3
Ships - 20 mile to PA	3.6	8.3	91.1	52.3	8.0	6.4
Ships - PA	1.5	3.2	25.8	13.8	2.5	2.0
Ships - Harbor Transit	1.4	2.0	16.6	7.5	1.7	1.4
Ships - Turning & Docking	1.2	1.6	13.2	5.5	1.4	1.1
Ships - Anchoring	0.4	1.0	12.4	10.7	1.1	0.9
Ships - Hoteling	3.5	9.4	121.8	104.2	10.8	8.7
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.1	5.8	0.0	0.2	0.2
Total	15.8	36.0	410.6	267.0	36.1	28.9
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	5.4	12.8	165.2	97.3	13.8	11.0
Ships - 20 mile to PA	4.9	11.0	121.2	69.5	10.6	8.5
Ships - PA	2.1	4.2	34.2	18.1	3.3	2.6
Ships - Harbor Transit	1.8	2.7	22.0	9.9	2.3	1.8
Ships - Turning & Docking	1.6	2.1	17.6	7.3	1.9	1.5
Ships - Anchoring	0.5	1.2	16.0	13.7	1.4	1.1
Ships - Hoteling	3.9	10.4	135.9	115.3	12.0	9.6
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.4	5.4	0.0	0.2	0.2
Total	20.3	45.9	517.6	331.0	45.6	36.5

**Table E1.2-Alt3-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation
Alternative 3**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	52	122	1,583	1,552	175	140
Ships - 20 mile to PA	68	160	2,074	2,033	230	184
Ships - PA	20	41	324	303	44	35
Ships - Harbor Transit	20	27	226	194	36	29
Ships - Turning & Docking	20	26	221	186	36	28
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	39	105	1,386	2,484	214	171
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	63	0	2	2
Total	221	492	5,877	6,753	736	589
Project Year 2015						
Ships - AQMD to 20 mile	52	122	1,583	1,552	175	140
Ships - 20 mile to PA	68	160	2,074	2,033	230	184
Ships - PA	20	41	324	303	44	35
Ships - Harbor Transit	20	27	226	194	36	29
Ships - Turning & Docking	20	26	221	186	36	28
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	39	105	1,386	2,484	214	171
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	56	0	2	2
Total	221	492	5,870	6,753	736	589
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	56	131	1,693	1,659	188	150
Ships - 20 mile to PA	73	171	2,217	2,173	246	196
Ships - PA	21	43	344	317	46	37
Ships - Harbor Transit	21	29	235	196	38	30
Ships - Turning & Docking	21	28	229	187	37	30
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	39	105	1,386	2,484	214	171
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	42	0	2	2
Total	233	517	6,145	7,016	769	616

Table E1.2-Alt3-74. AMP Compliance Rates

Alternative 3 with Mitigation

Project Year	Compliance Rate
Project Year 2005	60%
Project Year 2006	70%
Project Year 2008	70%
Project Year 2009	70%
Project Year 2010	90%
Project Year 2011	100%
Project Year 2012	100%
Project Year 2015	100%
Project Year 2020	100%
Project Year 2030+	100%

Source: Stipulated Judgment & Expanded AMP.

Table E1.2-Alt3-75. Vessel Speed Reduction Program (VSRP) Compliance Rates

Alternative 3 with Mitigation

Year	Compliance Rate
Year 2005 (1)	68.0%
Year 2009+ (2)	100.0%

Notes: (1) This is the historical average compliance rate for CS for 2005 from 20 nm to the PA.

VSR was not observed beyond 20 nm. Source: POLA staff (K. Maggay, 2007).

(2) The VSR mitigation measure starting in 2009 applies from 40 nm to the PA.

**Table E1.2-Alt3-76. OGV Main Engine Slide Valve Compliance Rates
Alternative 3 with Mitigation**

<i>Year</i>	<i>Compliance Rate</i>
Year 2005	0.0%
Year 2009	25.0%
Year 2010	50.0%
Year 2012	75.0%
Year 2014	100.0%
Year 2015+	100.0%

Table E1.2-Alt3-78. OGV Main Engine Fuel Usage

Alternative 3 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt3-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit

Alternative 3 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt3-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling Alternative 3 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	71%	29%		
Project Year 2007	71%	29%		
Project Year 2009	50%	20%	30%	
Project Year 2010	36%	15%	50%	
Project Year 2011	36%	15%	50%	
Project Year 2012	36%	15%	50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt3-81. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.20	0.43	2.96	0.98	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.88	1.89	12.94	4.27	0.88	0.70
Containerships 3,000 - 5,000 TEU	0.30	0.68	5.50	1.96	0.35	0.28
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.0	21.4	7.2	1.4	1.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.54	1.15	6.16	0.34	0.24	0.19
Containerships 5,000 - 6,000 TEU	1.18	2.52	13.47	0.75	0.53	0.42
Containerships 3,000 - 5,000 TEU	0.27	0.60	3.81	0.23	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.0	4.3	23.4	1.3	0.9	0.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.29	0.62	3.30	0.18	0.13	0.10
Containerships 8,000 - 9,000 TEU	0.84	1.80	9.62	0.53	0.38	0.30
Containerships 5,000 - 6,000 TEU	1.30	2.78	14.87	0.83	0.59	0.47
Containerships 3,000 - 5,000 TEU	0.23	0.53	3.34	0.20	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	5.7	31.1	1.7	1.2	1.0

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt3-82. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.26	0.57	3.88	1.28	0.26	0.21
Containerships 5,000 - 6,000 TEU	1.15	2.47	16.96	5.59	1.15	0.92
Containerships 3,000 - 5,000 TEU	0.39	0.89	7.21	2.57	0.46	0.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.8	3.9	28.0	9.4	1.9	1.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.70	1.51	8.07	0.45	0.32	0.25
Containerships 5,000 - 6,000 TEU	1.54	3.30	17.64	0.98	0.70	0.56
Containerships 3,000 - 5,000 TEU	0.35	0.79	5.00	0.30	0.19	0.15
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.6	5.6	30.7	1.7	1.2	1.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.38	0.81	4.32	0.24	0.17	0.14
Containerships 8,000 - 9,000 TEU	1.10	2.36	12.60	0.70	0.50	0.40
Containerships 5,000 - 6,000 TEU	1.70	3.64	19.48	1.08	0.77	0.61
Containerships 3,000 - 5,000 TEU	0.31	0.69	4.37	0.26	0.16	0.13
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.5	7.5	40.8	2.3	1.6	1.3

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt3-83. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.14	0.29	1.69	0.50	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.63	1.25	7.40	2.18	0.53	0.43
Containerships 3,000 - 5,000 TEU	0.21	0.45	3.06	1.00	0.21	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	2.0	12.1	3.7	0.9	0.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.38	0.76	3.52	0.17	0.15	0.12
Containerships 5,000 - 6,000 TEU	0.84	1.66	7.69	0.38	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.19	0.40	2.12	0.12	0.08	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	2.8	13.3	0.7	0.6	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.21	0.41	1.88	0.09	0.08	0.06
Containerships 8,000 - 9,000 TEU	0.60	1.19	5.50	0.27	0.23	0.18
Containerships 5,000 - 6,000 TEU	0.92	1.84	8.49	0.42	0.36	0.28
Containerships 3,000 - 5,000 TEU	0.16	0.35	1.86	0.10	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	3.8	17.7	0.9	0.7	0.6

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt3-84. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.36	0.03	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.29	0.33	1.59	0.15	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.09	0.12	0.55	0.07	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	2.5	0.3	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.18	0.20	0.76	0.01	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.39	0.43	1.66	0.03	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.08	0.10	0.38	0.01	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	2.8	0.0	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.10	0.11	0.41	0.01	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.28	0.31	1.19	0.02	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.43	0.48	1.83	0.03	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.07	0.09	0.34	0.01	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	1.0	3.8	0.1	0.2	0.2

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt3-85. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.07	0.31	0.04	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.21	0.29	1.34	0.19	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.07	0.10	0.49	0.09	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.5	2.1	0.3	0.2	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.17	0.64	0.02	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.28	0.38	1.40	0.03	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.06	0.09	0.34	0.01	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.6	2.4	0.1	0.1	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.07	0.09	0.34	0.01	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.20	0.27	1.00	0.02	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.31	0.42	1.54	0.04	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.05	0.08	0.30	0.01	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.9	3.2	0.1	0.2	0.1

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt3-86. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation

Turning

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.03	0.17	0.01	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.76	0.06	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.27	0.02	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.2	1.2	0.1	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.09	0.36	0.01	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.19	0.20	0.79	0.01	0.04	0.04
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.19	0.00	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	1.3	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.05	0.05	0.19	0.00	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.14	0.14	0.56	0.01	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.21	0.22	0.87	0.01	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.04	0.04	0.16	0.00	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.5	1.8	0.0	0.1	0.1

Mitigation measures include slide valves and low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt3-87. Annual Emissions from OGV Main Engine - Alternative 3 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.37	0.03	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.30	0.33	1.62	0.14	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.11	0.12	0.58	0.05	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	2.6	0.2	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.20	0.77	0.01	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.41	0.43	1.69	0.02	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.10	0.10	0.40	0.01	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.7	2.9	0.0	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.10	0.11	0.41	0.01	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.29	0.31	1.21	0.02	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.45	0.48	1.87	0.03	0.11	0.08
Containerships 3,000 - 5,000 TEU	0.08	0.09	0.35	0.00	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	1.0	3.8	0.1	0.2	0.2

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt3-88. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	25.8	55.3	469.9	389.6	57.4	45.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	55.3	469.9	389.6	57.4	45.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	25.8	55.3	296.1	16.4	11.7	9.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	55.3	296.1	16.4	11.7	9.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	27.7	59.3	317.1	17.6	12.5	10.0
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	27.7	59.3	317.1	17.6	12.5	10.0

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
 (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
 (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt3-89. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.9	72.5	615.6	510.4	75.2	60.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.9	72.5	615.6	510.4	75.2	60.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.9	72.5	387.8	21.5	15.3	12.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.9	72.5	387.8	21.5	15.3	12.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	36.3	77.6	415.4	23.1	16.4	13.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.3	77.6	415.4	23.1	16.4	13.1

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-Alt3-90. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	268.5	199.1	34.8	27.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	169.1	8.4	7.1	5.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	169.1	8.4	7.1	5.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	19.7	39.2	181.2	9.0	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	19.7	39.2	181.2	9.0	7.6	6.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt3-91. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	72.9	1.1	4.1	3.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	72.9	1.1	4.1	3.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	18.3	20.5	78.1	1.2	4.4	3.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.3	20.5	78.1	1.2	4.4	3.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt3-92. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-Alt3-93. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation

Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	34.7	0.5	2.0	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	34.7	0.5	2.0	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	8.9	9.6	37.1	0.5	2.1	1.7
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	37.1	0.5	2.1	1.7

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt3-94. Max Daily Emissions from OGV Main Engine - Alternative 3 with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	59.0	12.4	10.4	8.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	37.1	0.5	2.1	1.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	37.1	0.5	2.1	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	9.6	10.2	39.8	0.6	2.3	1.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.6	10.2	39.8	0.6	2.3	1.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt3-95. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.62	0.28	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.10	1.42	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.89	0.41	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.6	2.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.59	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.02	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.77	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.4	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.06	0.80	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.07	0.20	2.49	0.16	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.13	0.35	4.44	0.28	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.67	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.4	0.5	0.2	0.1

Mitigation measures include VSR and low sulfur fuel.

**Table E1.2-Alt3-96. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.81	0.37	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.11	0.31	4.07	1.87	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.17	0.54	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.0	2.8	0.4	0.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.17	2.09	0.13	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.27	0.33	0.11	0.08
Containerships 3,000 - 5,000 TEU	0.03	0.08	1.01	0.06	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.4	0.5	0.2	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.03	0.08	1.04	0.07	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.09	0.26	3.26	0.20	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.17	0.46	5.82	0.36	0.12	0.09
Containerships 3,000 - 5,000 TEU	0.03	0.07	0.88	0.06	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.0	0.7	0.2	0.2

Mitigation measures include VSR and low sulfur fuel.

Table E1.2-Alt3-97. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.40	0.15	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.04	0.73	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.59	0.21	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	1.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.06	0.07	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.67	0.17	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.51	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.2	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.53	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.65	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.08	0.23	2.95	0.18	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.45	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.6	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt3-98. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.41	0.15	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.04	0.73	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.56	0.20	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	1.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.08	0.07	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.66	0.17	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.48	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.2	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.54	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.68	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.08	0.23	2.94	0.18	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.6	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt3-99. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.36	0.13	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.78	0.64	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.49	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.6	0.9	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.94	0.06	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.33	0.15	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.7	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.04	0.47	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.12	1.47	0.09	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.57	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.37	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.9	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt3-100. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.19	0.07	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.95	0.34	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.09	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.4	0.5	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.04	0.50	0.03	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.24	0.08	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.23	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.0	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.02	0.25	0.02	0.01	0.00
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.78	0.05	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.37	0.09	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.20	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.6	0.2	0.1	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt3-101. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.41	0.15	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.04	0.73	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.56	0.20	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	1.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.08	0.07	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.66	0.17	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.48	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.2	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.54	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.68	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.08	0.23	2.94	0.18	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.6	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt3-102. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.94	2.59	34.10	21.99	2.72	2.17
Containerships 3,000 - 5,000 TEU	0.12	0.33	4.31	2.78	0.34	0.27
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	2.9	38.4	24.8	3.1	2.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.12	1.59	0.57	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.16	0.44	5.69	2.04	0.29	0.23
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.52	0.55	0.08	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.8	3.2	0.4	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Mitigation measures include AMP and low sulfur fuel (for non-AMP ships).

Table E1.2-Alt3-103. Annual Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.01	0.36	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.45	1.96	0.27	0.22
Containerships 3,000 - 5,000 TEU	0.06	0.15	1.96	0.70	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.4	3.0	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.65	0.17	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.21	0.56	7.12	0.44	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.05	0.13	1.71	0.11	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.5	0.7	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.10	1.32	0.08	0.03	0.02
Containerships 8,000 - 9,000 TEU	0.12	0.33	4.13	0.26	0.08	0.07
Containerships 5,000 - 6,000 TEU	0.23	0.62	7.87	0.49	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.49	0.09	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.2	14.8	0.9	0.3	0.2

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt3-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.2	6.1	81.1	112.6	11.4	9.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.1	81.1	112.6	11.4	9.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.2	6.1	76.6	4.8	1.5	1.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.1	76.6	4.8	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.2	6.1	76.6	4.8	1.5	1.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.1	76.6	4.8	1.5	1.2

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

Table E1.2-Alt3-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.9	7.9	106.2	147.6	15.0	12.0
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	7.9	106.2	147.6	15.0	12.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.9	7.9	100.4	6.3	2.0	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	7.9	100.4	6.3	2.0	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.9	7.9	100.4	6.3	2.0	1.6
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	7.9	100.4	6.3	2.0	1.6

Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.

(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.

(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

Table E1.2-Alt3-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	50.9	3.2	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	50.9	3.2	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.0	50.9	3.2	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	50.9	3.2	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt3-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	103.4	6.5	2.1	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	103.4	6.5	2.1	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	3.0	8.2	103.4	6.5	2.1	1.6
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	103.4	6.5	2.1	1.6

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt3-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt3-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	48.3	3.0	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	48.3	3.0	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.4	3.8	48.3	3.0	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	48.3	3.0	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt3-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	51.7	3.2	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	51.7	3.2	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	51.7	3.2	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	51.7	3.2	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt3-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation
Hoteling**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.5	92.2	1,232.5	1,712.9	173.7	139.0
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.5	92.2	1,232.5	1,712.9	173.7	139.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel. and they do not use AMP.

(2) For 2015 and 2030, all ships are assumed to use AMP.

Table E1.2-Alt3-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 3 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt3-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt3-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt3-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.09	0.56	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.10	0.34	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.05	0.17	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.6	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.04	0.03	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.12	0.08	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.04	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.14	0.09	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.04	0.02	0.01	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.3	0.2	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt3-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.09	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.05	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.04	0.02	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt3-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.03	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.08	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-Alt3-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Turning

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt3-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.09	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.05	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.04	0.02	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-Alt3-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Hoteling

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	0.33	3.34	20.63	1.08	0.86
Containerships 3,000 - 5,000 TEU	0.03	0.06	0.59	3.63	0.19	0.15
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.06	0.55	1.93	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.11	0.22	2.19	7.70	0.53	0.42
Containerships 3,000 - 5,000 TEU	0.04	0.08	0.82	2.87	0.20	0.16
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.6	12.5	0.9	0.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.13	1.23	0.79	0.19	0.15
Containerships 5,000 - 6,000 TEU	0.13	0.26	2.45	1.58	0.37	0.30
Containerships 3,000 - 5,000 TEU	0.03	0.06	0.61	0.40	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	4.3	2.8	0.7	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.06	0.56	0.36	0.09	0.07
Containerships 8,000 - 9,000 TEU	0.08	0.16	1.51	0.97	0.23	0.18
Containerships 5,000 - 6,000 TEU	0.11	0.23	2.15	1.39	0.33	0.26
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.43	0.28	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	4.6	3.0	0.7	0.6

Boilers are assumed to operate during hoteling regardless of whether the ship uses AMP.

Mitigation measures include low sulfur fuel.

Table E1.2-Alt3-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.20	1.21	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.05	0.29	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.04	0.12	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.21	0.74	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.11	0.37	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	1.2	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.09	0.06	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.27	0.17	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.09	0.06	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.04	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.14	0.09	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.02	0.03	0.30	0.19	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.08	0.05	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	0.4	0.1	0.1

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt3-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt3-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt3-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.0	1.3	0.3	0.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.0	1.3	0.3	0.2

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt3-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt3-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt3-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt3-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt3-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation
Hoteling**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.1	4.2	44.0	575.0	23.2	18.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	44.0	575.0	23.2	18.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.1	4.2	39.6	25.6	6.0	4.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	39.6	25.6	6.0	4.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.1	4.2	39.6	25.6	6.0	4.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	39.6	25.6	6.0	4.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt3-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 3 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt3-131. Annual Emissions from Tugboat Main Engine - Alternative 3 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.5	3.3	0.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.08	0.46	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.07	0.46	2.77	0.00	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.03	0.23	1.38	0.00	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.8	4.6	0.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.20	1.09	0.00	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.09	0.61	3.27	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	0.03	0.20	1.09	0.00	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	1.0	5.4	0.0	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.10	0.41	0.00	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.05	0.32	1.27	0.00	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.10	0.67	2.69	0.00	0.12	0.11
Containerships 3,000 - 5,000 TEU	0.03	0.18	0.71	0.00	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.3	5.1	0.0	0.2	0.2

Table E1.2-Alt3-132. Max Daily Emissions from Tugboat Main Engine - Alternative 3

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	59.10	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	59.1	0.0	1.8	1.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	52.4	0.0	1.8	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	39.0	0.0	1.7	1.6

Table E1.2-Alt3-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 3 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.0	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.03	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.18	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.3	0.0	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.08	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.23	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.08	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.4	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.03	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.05	0.19	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.4	0.0	0.0	0.0

Table E1.2-Alt3-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 3

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.75	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.8	0.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.7	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	2.8	0.0	0.1	0.1

Table E1.2-Alt3-135. Annual Emissions from AMP Electricity Consumption - Alternative 3 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.8	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.2	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.36	2.08	0.22	0.07	0.07
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.1	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.9	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	0.1	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.03	0.51	2.91	0.30	0.10	0.10
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.2	1.4	0.1	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.4	2.4	0.3	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.4	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.04	0.73	4.22	0.44	0.15	0.15
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.6	0.1	0.0	0.0
Containerships 8,000 - 9,000 TEU	0.0	0.3	1.7	0.2	0.1	0.1
Containerships 5,000 - 6,000 TEU	0.0	0.4	2.1	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.3	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.04	0.82	4.72	0.49	0.16	0.16

Note: These emissions represent regional power plant emissions associated with AMP generation.

Table E1.2-Alt3-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 3 with Mitigation

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.4	7.6	43.7	4.6	1.5	1.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	7.6	43.7	4.6	1.5	1.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.4	7.6	43.7	4.6	1.5	1.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	7.6	43.7	4.6	1.5	1.5

Notes: (1) These emissions represent regional power plant emissions associated with AMP generation.

(2) Peak day conditions do not use AMP during 2005 and 2010.

**Table E1.2-Alt3-137. Summary of Annual Marine Vessel Emissions with Mitigation
Alternative 3 with Mitigation**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						<i>PM</i>
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	1.3	3.3	42.3	49.0	4.3	3.5
AMP - Hoteling	0.0	0.4	2.1	0.2	0.1	0.1
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	7.1	16.2	180.2	125.9	16.3	13.0
Project Year 2010						
Ships - AQMD to 20 mile	1.5	3.4	26.0	9.3	1.7	1.4
Ships - 20 mile to PA	2.0	4.4	34.1	12.2	2.3	1.8
Ships - PA	1.1	2.2	15.3	5.3	1.1	0.8
Ships - Harbor Transit	0.9	1.4	10.4	2.9	0.7	0.6
Ships - Turning & Docking	0.8	1.1	8.2	2.1	0.6	0.5
Ships - Anchoring	0.3	0.7	8.8	4.3	0.5	0.4
Ships - Hoteling	0.4	1.0	12.4	15.7	1.3	1.0
AMP - Hoteling	0.0	0.5	2.9	0.3	0.1	0.1
Tugboats	0.1	0.8	4.9	0.0	0.2	0.1
Total	7.2	15.6	123.0	52.1	8.4	6.8
Project Year 2015						
Ships - AQMD to 20 mile	2.2	4.8	29.8	1.7	1.0	0.8
Ships - 20 mile to PA	2.8	6.3	39.1	2.2	1.4	1.1
Ships - PA	1.5	3.2	17.8	1.1	0.7	0.5
Ships - Harbor Transit	1.4	2.0	13.2	0.7	0.5	0.4
Ships - Turning & Docking	1.2	1.6	10.5	0.5	0.4	0.3
Ships - Anchoring	0.4	1.0	11.9	1.0	0.3	0.2
Ships - Hoteling	0.2	0.5	4.3	2.8	0.7	0.5
AMP - Hoteling	0.0	0.7	4.2	0.4	0.1	0.1
Tugboats	0.2	1.1	5.8	0.0	0.2	0.2
Total	9.9	21.1	136.6	10.4	5.2	4.2
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	2.9	6.4	39.5	2.3	1.4	1.1
Ships - 20 mile to PA	3.8	8.4	51.8	3.0	1.8	1.5
Ships - PA	2.1	4.2	23.6	1.4	0.9	0.7
Ships - Harbor Transit	1.8	2.7	17.5	0.9	0.6	0.5
Ships - Turning & Docking	1.6	2.1	13.9	0.7	0.5	0.4
Ships - Anchoring	0.5	1.2	15.4	1.3	0.4	0.3
Ships - Hoteling	0.2	0.5	4.6	3.0	0.7	0.6
AMP - Hoteling	0.0	0.8	4.7	0.5	0.2	0.2
Tugboats	0.2	1.4	5.4	0.0	0.2	0.2
Total	13.1	27.7	176.5	13.0	6.7	5.4

AMP Hoteling emissions include the emissions generated by regional power plants to generate the electricity consumed by the ships while hoteling.

Table E1.2-Alt3-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation

Alternative 3 with Mitigation

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	28	61	551	502	69	55
Ships - 20 mile to PA	37	80	722	658	90	72
Ships - PA	20	41	324	303	44	35
Ships - Harbor Transit	20	27	226	194	36	29
Ships - Turning & Docking	20	26	221	186	36	28
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	36	96	1,276	2,288	197	158
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	63	0	2	2
Total	162	343	3,384	4,131	473	379
Project Year 2015						
Ships - AQMD to 20 mile	28	61	373	21	13	11
Ships - 20 mile to PA	37	80	488	28	17	14
Ships - PA	20	41	222	13	8	7
Ships - Harbor Transit	20	27	177	8	6	5
Ships - Turning & Docking	20	26	173	8	6	5
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	2	4	40	26	6	5
AMP - Hoteling	0	8	44	5	2	2
Tugboats	1	10	56	0	2	2
Total	129	259	1,573	108	61	49
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	30	65	394	22	14	11
Ships - 20 mile to PA	39	86	516	29	18	15
Ships - PA	21	43	234	13	9	7
Ships - Harbor Transit	21	29	183	8	7	5
Ships - Turning & Docking	21	28	178	8	7	5
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	2	4	40	26	6	5
AMP - Hoteling	0	8	44	5	2	2
Tugboats	1	10	42	0	2	2
Total	137	273	1,629	112	64	52

**Table E1.2-Alt3-143. Truck Trips and Mileage for the Berth 97-109 Terminal
Alternative 3**

<i>Study Year</i>	<i>Annual Trips</i>	<i>Annual VMT Off-Terminal</i>	<i>Peak Day Factor</i>
2005	417,702	11,271,936	0.00366
2010	553,339	16,632,058	0.00366
2015	688,976	21,992,180	0.00366
2030	845,139	28,560,953	0.00335
2045	845,139	28,560,953	0.00335

Source: Iteris 2007.

Year 2010 values are interpolated.

Table E1.2-Alt3-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Alternative 3

<i>Activity/Project Scenario</i>	<i>Idling Time/ Trip (Hrs) (2)</i>	<i>Miles/ Trip (1)</i>	<i>Idling Hrs/ Year</i>	<i>Miles/ Year</i>
<i>On-Terminal</i>				
Year 2005	0.17	0.75	69,617	313,276
Year 2010	0.17	0.75	92,223	415,004
Year 2015	0.17	0.75	114,829	516,732
Year 2030	0.17	0.75	140,856	633,854
Year 2045	0.17	0.75	140,856	633,854
<i>Off-Terminal</i>				
Year 2005	0.25	--	104,425	11,271,936
Year 2010	0.25	--	138,335	16,632,058
Year 2015	0.25	--	172,244	21,992,180
Year 2030	0.25	--	211,285	28,560,953
Year 2045	0.25	--	211,285	28,560,953

Notes: (1) On-terminal mileage/trip based upon terminal-specific data provided by Starcrest (2007). Round trip distance of 1.5 miles is divided by 2 to produce the mileage per one-way trip.

(2) Terminal-specific on-terminal idling time of 20 minutes per round trip is provided by Starcrest (2007). Idling time is divided by 2 to produce the average idling time per one-way trip.

The off-terminal idling time assumes 30 minutes of idling time per round trip (0.25 hr per one-way trip).

Table E1.2-Alt3-147. Annual Truck Emissions for the Berths 97-109 Terminal

Alternative 3

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	1.22	4.71	10.75	0.01	0.17	0.16
Year 2010 - Driving	3.16	8.94	12.33	0.01	4.54	1.37
Subtotal	4.38	13.65	23.08	0.02	4.72	1.53
<i>Project Year 2015</i>						
Year 2015 - Idling	1.22	5.52	14.51	0.01	0.12	0.11
Year 2015 - Driving	2.29	6.17	8.77	0.02	5.11	1.20
Subtotal	3.52	11.69	23.28	0.02	5.24	1.31
<i>Project Year 2030</i>						
Year 2030 - Idling	1.19	6.39	18.93	0.01	0.03	0.02
Year 2030 - Driving	0.99	2.73	4.00	0.02	5.80	1.04
Subtotal	2.19	9.12	22.93	0.03	5.83	1.06
<i>Project Year 2045</i>						
Year 2045 - Idling	1.18	6.37	18.99	0.01	0.02	0.02
Year 2045 - Driving	0.92	2.51	3.70	0.02	5.79	1.03
Subtotal	2.09	8.88	22.69	0.03	5.81	1.05
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	1.83	7.06	16.13	0.01	0.26	0.24
Year 2010 - Driving	33.87	159.67	309.59	0.35	21.39	14.05
Subtotal	35.69	166.74	325.72	0.36	21.65	14.29
<i>Project Year 2015</i>						
Year 2015 - Idling	1.83	8.28	21.76	0.01	0.19	0.17
Year 2015 - Driving	26.39	115.73	225.97	0.47	19.26	10.28
Subtotal	28.22	124.01	247.72	0.48	19.44	10.45
<i>Project Year 2030</i>						
Year 2030 - Idling	1.79	9.59	28.39	0.01	0.04	0.04
Year 2030 - Driving	13.28	54.89	103.84	0.61	16.06	5.10
Subtotal	15.07	64.47	132.23	0.63	16.10	5.13
<i>Project Year 2045</i>						
Year 2045 - Idling	1.77	9.56	28.48	0.01	0.03	0.02
Year 2045 - Driving	12.28	50.55	95.80	0.61	15.77	4.83
Subtotal	14.05	60.11	124.28	0.63	15.80	4.86

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt3-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NO_x</i>	<i>SO_x</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	40.1	180.4	348.8	0.4	26.4	15.8
Year 2015	31.7	135.7	271.0	0.5	24.7	11.8
Year 2030	17.3	73.6	155.2	0.7	21.9	6.2
Year 2045	16.1	69.0	147.0	0.7	21.6	5.9

Table E1.2-Alt3-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NO_x</i>	<i>SO_x</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	293	1,321	2,554	3	193	116
Year 2015	232	994	1,984	4	181	86
Year 2030	116	493	1,040	4	147	42
Year 2045	108	463	985	4	145	40

**Table E1.2-Alt3-150. Annual Truck Emissions for the Berths 97-109 Terminal
Alternative 3 with Mitigation**

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	0.93	4.35	11.78	0.01	0.07	0.07
Year 2010 - Driving	1.72	4.81	7.99	0.01	4.11	0.97
Subtotal	2.65	9.16	19.77	0.02	4.18	1.03
<i>Project Year 2015</i>						
Year 2015 - Idling	0.58	2.43	7.63	0.00	0.02	0.02
Year 2015 - Driving	0.39	1.08	2.24	0.01	4.72	0.84
Subtotal	0.97	3.51	9.87	0.01	4.74	0.86
<i>Project Year 2030</i>						
Year 2030 - Idling	0.77	2.35	8.99	0.00	0.05	0.05
Year 2030 - Driving	0.39	1.16	3.29	0.00	5.82	1.06
Subtotal	1.16	3.51	12.28	0.00	5.87	1.11
<i>Project Year 2045</i>						
Year 2045 - Idling	0.77	2.35	8.99	0.00	0.05	0.05
Year 2045 - Driving	0.39	1.16	3.29	0.00	5.82	1.06
Subtotal	1.16	3.51	12.28	0.00	5.87	1.11
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	1.40	6.53	17.66	0.01	0.11	0.10
Year 2010 - Driving	18.69	85.84	193.05	0.35	14.26	7.49
Subtotal	20.09	92.37	210.72	0.36	14.37	7.59
<i>Project Year 2015</i>						
Year 2015 - Idling	0.86	3.64	11.44	0.00	0.03	0.03
Year 2015 - Driving	9.20	30.62	73.73	0.14	12.03	3.73
Subtotal	10.06	34.27	85.16	0.14	12.06	3.76
<i>Project Year 2030</i>						
Year 2030 - Idling	1.15	3.52	13.49	0.00	0.07	0.07
Year 2030 - Driving	17.58	52.11	148.30	0.00	17.16	6.41
Subtotal	18.73	55.63	161.79	0.00	17.23	6.49
<i>Project Year 2045</i>						
Year 2045 - Idling	1.15	3.52	13.49	0.00	0.07	0.07
Year 2045 - Driving	17.58	52.11	148.30	0.00	17.16	6.41
Subtotal	18.73	55.63	161.79	0.00	17.23	6.49

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt3-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	22.7	101.5	230.5	0.4	18.5	8.6
Year 2015	11.0	37.8	95.0	0.2	16.8	4.6
Year 2030	19.9	59.1	174.1	-	23.1	7.6
Year 2045	19.9	59.1	174.1	-	23.1	7.6

Table E1.2-Alt3-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	166	743	1,687	3	136	63
Year 2015	81	277	696	1	123	34
Year 2030	133	396	1,167	-	155	51
Year 2045	133	396	1,167	-	155	51

Table E1.2-Alt3-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 3

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	1.2	13.0	1.7	0.0	1.5	0.3
Year 2010	1.0	11.7	1.6	0.0	2.1	0.4
Year 2015	0.8	10.0	1.3	0.0	2.7	0.5
Year 2030	0.5	5.9	0.6	0.0	3.2	0.6
Year 2045	0.5	4.9	0.5	0.0	3.2	0.6

Table E1.2-Alt3-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 3

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	7.7	87.1	11.5	0.1	10.1	2.0
Year 2010	6.5	78.5	10.4	0.1	14.1	2.7
Year 2015	5.4	66.8	8.8	0.1	18.2	3.6
Year 2030	3.6	39.4	4.2	0.1	21.4	4.2
Year 2045	3.0	33.0	3.4	0.1	21.4	4.2

Table E1.2-Alt3-155. Train Trips Associated with the Alternative 3

<i>Year</i>	<i>Round Trips</i>	
	<i>Annual</i>	<i>Peak Day</i>
Berths 121-131 ICTF		
2005	113	1
2010	188	1
2015	262	1
2030	295	1
2045	295	1
Off-Dock Railyards		
2005	111	1
2010	126	1
2015	141	1
2030	198	1
2045	198	1

Table E1.2-Alt3-162. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt3-163. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.02	3.66	0.16	0.01	0.01	0.01
Top Picks (1)	0.09	0.91	3.75	0.00	0.10	0.09
Line Haul Locomotive (SCAB) - Road Haul	1.52	4.92	26.99	0.59	0.89	0.82
Line Haul Locomotive (near Port) - Road Haul	0.08	0.26	1.41	0.03	0.05	0.04
Line Haul Locomotive at Railyard	0.08	0.25	1.39	0.03	0.05	0.04
Yard Locomotive - Switching	0.04	0.14	0.55	0.00	0.02	0.01
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.37	0.06	0.00	0.00	0.00
Top Picks (1)	0.04	0.34	1.41	0.00	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.52	4.92	26.99	0.59	0.89	0.82
Line Haul Locomotive (near Port) - Road Haul	0.08	0.26	1.41	0.03	0.05	0.04
Line Haul Locomotive at Railyard	0.05	0.17	0.93	0.02	0.03	0.03
Yard Locomotive - Switching	0.04	0.14	0.55	0.00	0.02	0.01
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	2.45	0.11	0.01	0.01	0.01
Top Picks	0.10	0.62	2.54	0.00	0.08	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.82	2.64	14.48	0.31	0.48	0.44
Line Haul Locomotive at Railyard	0.05	0.17	0.93	0.02	0.03	0.03
Yard Locomotive - Switching	0.05	0.09	0.75	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	0.92	0.04	0.00	0.00	0.00
Top Picks	0.04	0.23	0.95	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.82	2.64	14.48	0.31	0.48	0.44
Line Haul Locomotive at Railyard	0.04	0.11	0.62	0.01	0.02	0.02
Yard Locomotive - Switching	0.05	0.09	0.75	0.00	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-164. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	5.44	0.24	0.01	0.02	0.01
Top Picks (1)	0.15	1.36	5.54	0.00	0.16	0.15
Line Haul Locomotive (SCAB) - Road Haul	1.96	6.87	35.21	0.02	1.06	0.98
Line Haul Locomotive (near Port) - Road Haul	0.10	0.36	1.84	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.10	0.35	1.82	0.00	0.05	0.05
Yard Locomotive - Switching (2)	0.06	0.19	0.77	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	2.04	0.09	0.00	0.01	0.01
Top Picks (1)	0.05	0.51	2.08	0.00	0.06	0.06
Line Haul Locomotive (SCAB) - Road Haul	1.96	6.87	35.21	0.02	1.06	0.98
Line Haul Locomotive (near Port) - Road Haul	0.10	0.36	1.84	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.07	0.24	1.21	0.00	0.04	0.03
Yard Locomotive - Switching	0.06	0.19	0.77	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	2.92	0.13	0.01	0.01	0.01
Top Picks	0.08	0.73	2.98	0.00	0.09	0.08
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.95	15.13	0.01	0.46	0.42
Line Haul Locomotive at Railyard	0.05	0.19	0.98	0.00	0.03	0.03
Yard Locomotive - Switching	0.05	0.11	0.73	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.10	0.05	0.00	0.00	0.00
Top Picks	0.03	0.27	1.12	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.95	15.13	0.01	0.46	0.42
Line Haul Locomotive at Railyard	0.04	0.13	0.65	0.00	0.02	0.02
Yard Locomotive - Switching	0.05	0.11	0.73	0.00	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-165. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	6.11	0.27	0.01	0.02	0.02
Top Picks (1)	0.06	0.82	0.71	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.74	7.72	32.36	0.03	0.86	0.79
Line Haul Locomotive (near Port) - Road Haul	0.09	0.40	1.69	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.09	0.40	1.67	0.00	0.04	0.04
Yard Locomotive - Switching (2)	0.06	0.22	0.87	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	2.29	0.10	0.01	0.01	0.01
Top Picks (1)	0.02	0.31	0.27	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.74	7.72	32.36	0.03	0.86	0.79
Line Haul Locomotive (near Port) - Road Haul	0.09	0.40	1.69	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.06	0.27	1.11	0.00	0.03	0.03
Yard Locomotive - Switching	0.06	0.22	0.87	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.11	0.18	0.01	0.01	0.01
Top Picks	0.04	0.55	0.48	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	0.94	4.15	17.42	0.01	0.46	0.43
Line Haul Locomotive at Railyard	0.06	0.27	1.12	0.00	0.03	0.03
Yard Locomotive - Switching	0.06	0.15	0.82	0.00	0.03	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.54	0.07	0.00	0.00	0.00
Top Picks	0.01	0.21	0.18	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.94	4.15	17.42	0.01	0.46	0.43
Line Haul Locomotive at Railyard	0.04	0.18	0.75	0.00	0.02	0.02
Yard Locomotive - Switching	0.06	0.15	0.82	0.00	0.03	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-166. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	6.11	0.27	0.01	0.02	0.02
Top Picks (1)	0.06	0.82	0.71	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.56	7.72	30.02	0.03	0.73	0.67
Line Haul Locomotive (near Port) - Road Haul	0.08	0.40	1.57	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.08	0.40	1.55	0.00	0.04	0.03
Yard Locomotive - Switching (2)	0.06	0.22	0.87	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	2.29	0.10	0.01	0.01	0.01
Top Picks (1)	0.02	0.31	0.27	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.56	7.72	30.02	0.03	0.73	0.67
Line Haul Locomotive (near Port) - Road Haul	0.08	0.40	1.57	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.05	0.27	1.03	0.00	0.03	0.02
Yard Locomotive - Switching	0.06	0.22	0.87	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.11	0.18	0.01	0.01	0.01
Top Picks	0.04	0.55	0.48	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	0.84	4.15	16.16	0.01	0.39	0.36
Line Haul Locomotive at Railyard	0.05	0.27	1.04	0.00	0.03	0.02
Yard Locomotive - Switching	0.05	0.15	0.69	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.54	0.07	0.00	0.00	0.00
Top Picks	0.01	0.21	0.18	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.84	4.15	16.16	0.01	0.39	0.36
Line Haul Locomotive at Railyard	0.04	0.18	0.69	0.00	0.02	0.02
Yard Locomotive - Switching	0.05	0.15	0.69	0.00	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2005

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt3-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2010

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2015

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2030

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt3-172. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Table E1.2-Alt3-173. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2010

<i>ICTF/Train Direction/Source Activity</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.02	3.66	0.16	0.01	0.01	0.01
Top Picks (1)	0.09	0.91	3.75	0.00	0.10	0.09
Line Haul Locomotive (SCAB) - Road Haul	1.52	4.92	26.99	0.59	0.89	0.82
Line Haul Locomotive (near Port) - Road Haul	0.08	0.26	1.41	0.03	0.05	0.04
Line Haul Locomotive at Railyard	0.08	0.25	1.39	0.03	0.05	0.04
Yard Locomotive - Switching	0.04	0.14	0.55	0.00	0.02	0.01
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.37	0.06	0.00	0.00	0.00
Top Picks (1)	0.04	0.34	1.41	0.00	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.52	4.92	26.99	0.59	0.89	0.82
Line Haul Locomotive (near Port) - Road Haul	0.08	0.26	1.41	0.03	0.05	0.04
Line Haul Locomotive at Railyard	0.05	0.17	0.93	0.02	0.03	0.03
Yard Locomotive - Switching	0.04	0.14	0.55	0.00	0.02	0.01
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	2.45	0.11	0.01	0.01	0.01
Top Picks	0.10	0.62	2.54	0.00	0.08	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.82	2.64	14.48	0.31	0.48	0.44
Line Haul Locomotive at Railyard	0.05	0.17	0.93	0.02	0.03	0.03
Yard Locomotive - Switching	0.05	0.09	0.75	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	0.92	0.04	0.00	0.00	0.00
Top Picks	0.04	0.23	0.95	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.82	2.64	14.48	0.31	0.48	0.44
Line Haul Locomotive at Railyard	0.04	0.11	0.62	0.01	0.02	0.02
Yard Locomotive - Switching	0.05	0.09	0.75	0.00	0.02	0.02

Table E1.2-Alt3-174. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	5.44	0.24	0.01	0.02	0.01
Top Picks (1)	0.04	0.66	0.58	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.96	6.87	35.21	0.02	1.06	0.98
Line Haul Locomotive (near Port) - Road Haul	0.10	0.36	1.84	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.10	0.35	1.82	0.00	0.05	0.05
Yard Locomotive - Switching (1)	0.06	0.19	0.77	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	2.04	0.09	0.00	0.01	0.01
Top Picks	0.02	0.25	0.22	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.96	6.87	35.21	0.02	1.06	0.98
Line Haul Locomotive (near Port) - Road Haul	0.10	0.36	1.84	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.07	0.24	1.21	0.00	0.04	0.03
Yard Locomotive - Switching (1)	0.06	0.19	0.77	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	2.92	0.13	0.01	0.01	0.01
Top Picks	0.08	0.73	2.98	0.00	0.09	0.08
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.95	15.13	0.01	0.46	0.42
Line Haul Locomotive at Railyard	0.05	0.19	0.98	0.00	0.03	0.03
Yard Locomotive - Switching	0.05	0.11	0.73	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.10	0.05	0.00	0.00	0.00
Top Picks	0.03	0.27	1.12	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.95	15.13	0.01	0.46	0.42
Line Haul Locomotive at Railyard	0.04	0.13	0.65	0.00	0.02	0.02
Yard Locomotive - Switching	0.05	0.11	0.73	0.00	0.02	0.02

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt3-175. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	6.11	0.27	0.01	0.02	0.02
Top Picks (1)	0.06	0.82	0.71	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.74	7.72	32.36	0.03	0.86	0.79
Line Haul Locomotive (near Port) - Road Haul	0.09	0.40	1.69	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.09	0.40	1.67	0.00	0.04	0.04
Yard Locomotive - Switching (1)	0.06	0.22	0.87	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	2.29	0.10	0.01	0.01	0.01
Top Picks	0.02	0.31	0.27	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.74	7.72	32.36	0.03	0.86	0.79
Line Haul Locomotive (near Port) - Road Haul	0.09	0.40	1.69	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.06	0.27	1.11	0.00	0.03	0.03
Yard Locomotive - Switching (1)	0.06	0.22	0.87	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.11	0.18	0.01	0.01	0.01
Top Picks	0.04	0.55	0.48	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	0.94	4.15	17.42	0.01	0.46	0.43
Line Haul Locomotive at Railyard	0.06	0.27	1.12	0.00	0.03	0.03
Yard Locomotive - Switching	0.06	0.15	0.82	0.00	0.03	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.54	0.07	0.00	0.00	0.00
Top Picks	0.01	0.21	0.18	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.94	4.15	17.42	0.01	0.46	0.43
Line Haul Locomotive at Railyard	0.04	0.18	0.75	0.00	0.02	0.02
Yard Locomotive - Switching	0.06	0.15	0.82	0.00	0.03	0.02

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt3-176. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	6.11	0.27	0.01	0.02	0.02
Top Picks (1)	0.06	0.82	0.71	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.56	7.72	30.02	0.03	0.73	0.67
Line Haul Locomotive (near Port) - Road Haul	0.08	0.40	1.57	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.08	0.40	1.55	0.00	0.04	0.03
Yard Locomotive - Switching (1)	0.06	0.22	0.87	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	2.29	0.10	0.01	0.01	0.01
Top Picks	0.02	0.31	0.27	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.56	7.72	30.02	0.03	0.73	0.67
Line Haul Locomotive (near Port) - Road Haul	0.08	0.40	1.57	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.05	0.27	1.03	0.00	0.03	0.02
Yard Locomotive - Switching (1)	0.06	0.22	0.87	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.11	0.18	0.01	0.01	0.01
Top Picks	0.04	0.55	0.48	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	0.84	4.15	16.16	0.01	0.39	0.36
Line Haul Locomotive at Railyard	0.05	0.27	1.04	0.00	0.03	0.02
Yard Locomotive - Switching	0.05	0.15	0.69	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.54	0.07	0.00	0.00	0.00
Top Picks	0.01	0.21	0.18	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.84	4.15	16.16	0.01	0.39	0.36
Line Haul Locomotive at Railyard	0.04	0.18	0.69	0.00	0.02	0.02
Yard Locomotive - Switching	0.05	0.15	0.69	0.00	0.02	0.02

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt3-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2005

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Table E1.2-Alt3-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 3 with Mitigation - Year 2010

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

**Table E1.2-Alt3-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 3 with Mitigation - Year 2015**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.3	5.0	4.4	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	1.9	1.7	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

**Table E1.2-Alt3-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 3 with Mitigation - Year 2030**

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2

**Table E1.2-Alt3-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 3 with Mitigation - Year 2045**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2

**Table E1.2-Alt3-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 3**

<i>Project Scenario/Source Activity</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.3	10.5	9.0	0.0	0.3	0.2
Trains	5.1	16.3	89.4	1.9	2.9	2.7
Total	5.4	26.8	98.4	1.9	3.2	2.9
<i>Project Year 2015</i>						
Railyard Equipment	0.4	14.4	12.2	0.0	0.4	0.3
Trains	6.1	21.2	108.4	0.1	3.3	3.0
Total	6.5	35.5	120.6	0.1	3.6	3.4
<i>Project Year 2030</i>						
Railyard Equipment	0.2	15.9	2.2	0.0	0.1	0.1
Trains	5.8	25.6	107.6	0.1	2.9	2.7
Total	6.1	41.5	109.8	0.1	2.9	2.7
<i>Project Year 2045</i>						
Railyard Equipment	0.2	15.9	2.2	0.0	0.1	0.1
Trains	5.2	25.6	99.8	0.1	2.4	2.3
Total	5.5	41.5	102.0	0.1	2.5	2.3

**Table E1.2-Alt3-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 3**

Project Scenario/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	3.8	142.6	121.1	0.4	3.7	3.4
Trains	77.6	269.4	1,382.6	1.0	41.8	38.4
Total	81.4	411.9	1,503.7	1.3	45.5	41.9
<i>Project Year 2030</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	61.4	269.4	1,132.6	1.0	30.3	27.9
Total	63.3	398.6	1,150.7	1.3	30.9	28.4
<i>Project Year 2045</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	55.1	269.4	1,050.2	1.0	25.8	23.7
Total	56.9	398.6	1,068.3	1.3	26.3	24.2

**Table E1.2-Alt3-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 3 with Mitigation**

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.3	10.5	9.0	0.0	0.3	0.2
Trains	5.1	16.3	89.4	1.9	2.9	2.7
Total	5.4	26.8	98.4	1.9	3.2	2.9
<i>Project Year 2015</i>						
Railyard Equipment	0.2	13.4	5.4	0.0	0.2	0.2
Trains	6.1	21.2	108.4	0.1	3.2	3.0
Total	6.3	34.6	113.7	0.1	3.4	3.1
<i>Project Year 2030</i>						
Railyard Equipment	0.2	15.9	2.2	0.0	0.1	0.1
Trains	5.8	25.6	107.6	0.1	2.8	2.6
Total	6.1	41.5	109.8	0.1	2.9	2.7
<i>Project Year 2045</i>						
Railyard Equipment	0.2	15.9	2.2	0.0	0.1	0.1
Trains	5.2	25.6	99.8	0.1	2.4	2.2
Total	5.5	41.5	102.0	0.1	2.5	2.3

**Table E1.2-Alt3-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions
Alternative 3 with Mitigation**

<i>Project Scenario/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	2.7	135.2	69.1	0.4	2.1	1.9
Trains	77.6	269.4	1,382.6	1.0	41.5	38.2
Total	80.3	404.5	1,451.7	1.3	43.6	40.1
<i>Project Year 2030</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	61.4	269.4	1,132.6	1.0	30.0	27.6
Total	63.3	398.6	1,150.7	1.3	30.6	28.1
<i>Project Year 2045</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	55.1	269.4	1,050.2	1.0	25.5	23.4
Total	56.9	398.6	1,068.3	1.3	26.0	23.9

Table E1.2-A113-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 3

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	223,897	FL175_U	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_U	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_U	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_U	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_U	0.41	1.45	4.03	0.03	0.19	0.18
Top pick >175-250	6,967,232	TH250_U	4.49	13.52	55.93	0.46	1.97	1.81
Yard tractor >120-175	23,953,325	YTD175_U	21.34	78.20	189.80	1.58	10.19	9.37
Other Equipment	165,929	OTHER_U	0.15	0.66	1.33	0.01	0.09	0.08
Total			28.1	100.8	274.0	2.3	13.3	12.2
Project Year 2010								
Forklift >120-175	291,588	FL175_U	0.13	1.19	2.90	0.00	0.11	0.10
Forklift >175-250	54,206	FL250_U	0.03	0.21	0.55	0.00	0.02	0.02
Forklift >25-50	96,585	FL50_U	0.14	0.74	0.72	0.00	0.07	0.06
RTG >175-250	4,047,952	RTG250_U	1.74	7.46	22.83	0.03	0.82	0.76
Side pick >120-175	554,075	SP175_U	0.27	1.96	5.44	0.00	0.21	0.19
Top pick >175-250	9,073,645	TH250_U	3.13	18.96	77.65	0.07	2.35	2.16
Yard tractor >120-175	31,195,166	YTD175_U	0.59	95.32	4.18	0.24	0.26	0.24
Other Equipment	216,095	OTHER_U	0.14	0.89	1.79	0.00	0.11	0.10
Total			6.2	126.7	116.0	0.3	3.9	3.6
Project Year 2015								
Forklift >120-175	402,148	FL175_U	0.12	1.73	4.07	0.00	0.15	0.14
Forklift >175-250	74,760	FL250_U	0.03	0.30	0.78	0.00	0.03	0.03
Forklift >25-50	133,206	FL50_U	0.13	1.09	1.02	0.00	0.09	0.08
RTG >175-250	5,582,797	RTG250_U	2.60	10.78	27.00	0.04	1.09	1.00
Side pick >120-175	764,161	SP175_U	0.26	2.85	7.82	0.01	0.30	0.27
Top pick >175-250	12,514,061	TH250_U	2.95	27.53	111.95	0.10	3.25	2.99
Yard tractor >120-175	43,023,308	YTD175_U	0.91	140.00	6.09	0.33	0.42	0.38
Other Equipment	298,030	OTHER_U	0.09	1.28	2.58	0.00	0.14	0.13
Total			7.1	185.6	161.3	0.5	5.5	5.0
Project Year 2030								
Forklift >120-175	519,761	FL175_U	0.05	1.75	0.81	0.00	0.01	0.01
Forklift >175-250	96,624	FL250_U	0.01	0.12	0.10	0.00	0.00	0.00
Forklift >25-50	172,164	FL50_U	0.03	0.73	0.58	0.00	0.00	0.00
RTG >175-250	7,215,545	RTG250_U	0.59	8.31	7.22	0.05	0.11	0.10
Side pick >120-175	987,648	SP175_U	0.10	3.41	1.58	0.01	0.02	0.01
Top pick >175-250	16,173,932	TH250_U	1.36	18.96	16.44	0.12	0.25	0.23
Yard tractor >120-175	55,605,932	YTD175_U	1.18	180.94	7.88	0.42	0.54	0.50
Other Equipment	385,192	OTHER_U	0.04	1.39	0.88	0.00	0.01	0.00
Total			3.4	215.6	35.5	0.6	0.9	0.9
Project Year 2045								
Forklift >120-175	519,761	FL175_U	0.05	1.75	0.81	0.00	0.01	0.01
Forklift >175-250	96,624	FL250_U	0.01	0.12	0.10	0.00	0.00	0.00
Forklift >25-50	172,164	FL50_U	0.03	0.73	0.58	0.00	0.00	0.00
RTG >175-250	7,215,545	RTG250_U	0.59	8.31	7.22	0.05	0.11	0.10
Side pick >120-175	987,648	SP175_U	0.10	3.41	1.58	0.01	0.02	0.01
Top pick >175-250	16,173,932	TH250_U	1.36	18.96	16.44	0.12	0.25	0.23
Yard tractor >120-175	55,605,932	YTD175_U	1.18	180.94	7.88	0.42	0.54	0.50
Other Equipment	385,192	OTHER_U	0.04	1.39	0.88	0.00	0.01	0.00
Total			3.4	215.6	35.5	0.6	0.9	0.9

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-Alt3-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 3

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2005	0.47%	0.88%	0.67%
2010	0.42%	0.86%	0.64%
2015	0.37%	0.84%	0.60%
2030	0.34%	0.75%	0.54%
2045	0.34%	0.75%	0.54%

Note: The percent of annual CHE usage on the peak day represents the average of the landside and dockside percentages. This assumes that landside and dockside CHE usages contribute equally to total CHE usage, and conservatively assumes that the peak days for landside and dockside usages occur simultaneously.

Table E1.2-Alt3-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 3

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	5.6	19.5	54.4	0.4	2.6	2.4
Top pick >175-250	60.5	182.2	753.8	6.2	26.6	24.4
Yard tractor >120-175	287.7	1,053.8	2,557.9	21.3	137.3	126.3
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
Total	378.6	1,359.0	3,693.2	31.0	178.8	164.5
<i>Project Year 2010</i>						
Forklift >120-175	1.7	15.3	37.0	0.0	1.4	1.3
Forklift >175-250	0.4	2.6	7.0	0.0	0.3	0.3
Forklift >25-50	1.8	9.5	9.2	0.0	0.8	0.8
RTG >175-250	22.3	95.3	291.9	0.4	10.5	9.7
Side pick >120-175	3.5	25.1	69.6	0.1	2.7	2.5
Top pick >175-250	40.0	242.5	992.8	0.9	30.0	27.6
Yard tractor >120-175	7.6	1,218.8	53.5	3.0	3.3	3.0
Other Equipment	1.8	11.4	22.9	0.0	1.4	1.3
Total	79.0	1,620.4	1,483.9	4.4	50.4	46.4
<i>Project Year 2015</i>						
Forklift >120-175	1.5	20.9	49.2	0.0	1.8	1.7
Forklift >175-250	0.3	3.6	9.4	0.0	0.4	0.3
Forklift >25-50	1.6	13.1	12.4	0.0	1.1	1.0
RTG >175-250	31.4	130.4	326.5	0.5	13.1	12.1
Side pick >120-175	3.1	34.4	94.6	0.1	3.6	3.3
Top pick >175-250	35.7	333.0	1,354.0	1.2	39.3	36.2
Yard tractor >120-175	11.0	1,693.2	73.7	4.0	5.0	4.6
Other Equipment	1.1	15.5	31.2	0.0	1.7	1.6
Total	85.9	2,244.3	1,950.9	5.8	66.1	60.8
<i>Project Year 2030</i>						
Forklift >120-175	0.5	18.9	8.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.3	1.1	0.0	0.0	0.0
Forklift >25-50	0.3	7.9	6.3	0.0	0.0	0.0
RTG >175-250	6.4	90.0	78.2	0.6	1.2	1.1
Side pick >120-175	1.1	36.9	17.1	0.1	0.2	0.2
Top pick >175-250	14.8	205.4	178.0	1.3	2.7	2.5
Yard tractor >120-175	12.7	1,960.0	85.3	4.6	5.8	5.4
Other Equipment	0.4	15.0	9.6	0.0	0.1	0.1
Total	36.3	2,335.4	384.4	6.7	10.1	9.3
<i>Project Year 2045</i>						
Forklift >120-175	0.5	18.9	8.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.3	1.1	0.0	0.0	0.0
Forklift >25-50	0.3	7.9	6.3	0.0	0.0	0.0
RTG >175-250	6.4	90.0	78.2	0.6	1.2	1.1
Side pick >120-175	1.1	36.9	17.1	0.1	0.2	0.2
Top pick >175-250	14.8	205.4	178.0	1.3	2.7	2.5
Yard tractor >120-175	12.7	1,960.0	85.3	4.6	5.8	5.4
Other Equipment	0.4	15.0	9.6	0.0	0.1	0.1
Total	36.3	2,335.4	384.4	6.7	10.1	9.3

Table E1.2-A13-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 3

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	223,897	FL175_M	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_M	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_M	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_M	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_M	0.15	0.48	3.23	0.03	0.10	0.09
Top pick >175-250	6,967,232	TH250_M	1.66	4.46	44.75	0.46	0.99	0.91
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	165,929	OTHER_M	0.15	0.66	1.33	0.01	0.09	0.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	23,953,325	YTP175_M	29.72	480.39	123.81	-	1.58	1.58
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			33.4	493.0	196.1	0.7	3.6	3.4
Project Year 2010								
Forklift >120-175	291,588	FL175_M	0.13	1.18	2.86	0.00	0.11	0.10
Forklift >175-250	54,206	FL250_M	0.03	0.21	0.55	0.00	0.02	0.02
Forklift >25-50	96,585	FL50_M	0.14	0.74	0.72	0.00	0.07	0.06
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	554,075	SP175_M	0.17	1.96	5.44	0.00	0.19	0.17
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	216,095	OTHER_M	0.13	0.87	1.76	0.00	0.11	0.10
LPG Top pick >175-250	9,073,645	THP250_M	3.43	213.25	18.69	-	0.60	0.60
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	31,195,166	YTP175_M	56.43	922.03	183.42	-	2.06	2.06
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			60.5	1,140.3	213.4	0.0	3.2	3.1
Project Year 2015								
Forklift >120-175	402,148	FL175_M	0.03	1.23	0.58	0.00	0.00	0.00
Forklift >175-250	74,760	FL250_M	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	133,206	FL50_M	0.01	0.14	0.12	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	764,161	SP175_M	0.06	2.34	1.07	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	298,030	OTHER_M	0.03	1.03	0.66	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	12,514,061	THN250_M	0.23	37.74	1.66	-	0.10	0.10
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	43,023,308	YTN175_M_REPL	0.80	129.75	5.70	-	0.34	0.34
Total			1.2	172.3	9.9	0.0	0.5	0.5
Project Year 2030								
Forklift >120-175	519,761	FL175_M	0.05	1.75	0.81	0.00	0.01	0.01
Forklift >175-250	96,624	FL250_M	0.01	0.12	0.10	0.00	0.00	0.00
Forklift >25-50	172,164	FL50_M	0.02	0.21	0.18	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	987,648	SP175_M	0.10	3.41	1.58	0.01	0.02	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	385,192	OTHER_M	0.04	1.39	0.88	0.00	0.01	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	16,173,932	THN250_M	0.32	50.70	2.22	-	0.14	0.14
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	55,605,932	YTN175_M_REPL	1.11	174.32	7.62	-	0.49	0.49
Total			1.6	231.9	13.4	0.0	0.7	0.7
Project Year 2045								
Forklift >120-175	519,761	FL175_M	0.05	1.75	0.81	0.00	0.01	0.01
Forklift >175-250	96,624	FL250_M	0.01	0.12	0.10	0.00	0.00	0.00
Forklift >25-50	172,164	FL50_M	0.02	0.21	0.18	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	987,648	SP175_M	0.10	3.41	1.58	0.01	0.02	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	385,192	OTHER_M	0.04	1.39	0.88	0.00	0.01	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	16,173,932	THN250_M	0.31	49.42	2.17	-	0.13	0.13
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	55,605,932	YTN175_M_REPL	1.06	169.91	7.45	-	0.46	0.46
Total			1.6	226.2	13.2	0.0	0.6	0.6

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-A13-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 3

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	2.1	6.4	43.5	0.4	1.3	1.2
Top pick >175-250	22.4	60.1	603.1	6.2	13.3	12.2
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	400.5	6,474.1	1,668.5	-	21.4	21.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	449.8	6,644.1	2,642.1	9.8	48.3	46.1
Project Year 2010						
Forklift >120-175	1.7	15.1	36.6	0.0	1.4	1.3
Forklift >175-250	0.4	2.6	7.0	0.0	0.3	0.3
Forklift >25-50	1.8	9.5	9.2	0.0	0.8	0.8
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	2.2	25.1	69.6	0.1	2.4	2.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	1.7	11.2	22.6	0.0	1.4	1.2
LPG Top pick >175-250	43.8	2,726.7	239.0	-	7.7	7.7
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	721.5	11,789.5	2,345.2	-	26.4	26.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	773.1	14,579.7	2,729.1	0.1	40.4	39.9
Project Year 2015						
Forklift >120-175	0.4	14.9	7.0	0.0	0.1	0.1
Forklift >175-250	0.1	1.0	0.8	0.0	0.0	0.0
Forklift >25-50	0.1	1.7	1.5	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	0.8	28.3	12.9	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	12.5	8.0	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.8	456.5	20.1	-	1.2	1.2
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	9.7	1,569.3	68.9	-	4.2	4.2
Total	14.2	2,084.1	119.3	0.2	5.6	5.6
Project Year 2030						
Forklift >120-175	0.5	18.9	8.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.3	1.1	0.0	0.0	0.0
Forklift >25-50	0.2	2.2	1.9	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	1.1	36.9	17.1	0.1	0.2	0.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.4	15.0	9.6	0.0	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	3.5	549.2	24.0	-	1.6	1.6
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	12.0	1,888.3	82.6	-	5.3	5.3
Total	17.7	2,511.9	145.0	0.2	7.2	7.2
Project Year 2045						
Forklift >120-175	0.5	18.9	8.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.3	1.1	0.0	0.0	0.0
Forklift >25-50	0.2	2.2	1.9	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	1.1	36.9	17.1	0.1	0.2	0.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.4	15.0	9.6	0.0	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	3.3	535.3	23.5	-	1.5	1.5
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	11.5	1,840.4	80.7	-	5.0	5.0
Total	17.1	2,450.2	142.7	0.2	6.8	6.8

Table E1.2-A13-191. Emissions from RTG Electricity Consumption - Mitigated Alternative 3

Project Scenario/Activity	Pollutant					
	VOC	CO	NOx	SOx	PM10	PM2.5
Annual Emissions (tons per year)						
Year 2005	-	-	-	-	-	-
Year 2010	0.02	0.30	1.74	0.18	0.06	0.06
Year 2015	0.02	0.42	2.39	0.25	0.08	0.08
Year 2030	0.03	0.54	3.10	0.32	0.11	0.11
Year 2045	0.03	0.54	3.10	0.32	0.11	0.11
Peak Daily Emissions (lb/day)						
Year 2005	-	-	-	-	-	-
Year 2010	0.19	3.86	22.20	2.32	0.77	0.77
Year 2015	0.25	5.04	28.96	3.02	1.01	1.01
Year 2030	0.29	5.83	33.53	3.50	1.17	1.16
Year 2045	0.29	5.83	33.53	3.50	1.17	1.16

Note: These emissions represent regional power plant emissions associated with electricity generation.

Table E1.2-Alt3-192. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	28.1	100.8	274.0	2.3	13.3	12.2
Year 2010	6.2	126.7	116.0	0.3	3.9	3.6
Year 2015	7.1	185.6	161.3	0.5	5.5	5.0
Year 2030	3.4	215.6	35.5	0.6	0.9	0.9
Year 2045	3.4	215.6	35.5	0.6	0.9	0.9

Table E1.2-Alt3-193. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 3 without Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	379	1,359	3,693	31	179	165
Year 2010	79	1,620	1,484	4	50	46
Year 2015	86	2,244	1,951	6	66	61
Year 2030	36	2,335	384	7	10	9
Year 2045	36	2,335	384	7	10	9

Table E1.2-A113-194. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	33.4	493.0	196.1	0.7	3.6	3.4
Year 2010	60.5	1,140.6	215.2	0.2	3.2	3.2
Year 2015	1.2	172.7	12.3	0.3	0.5	0.5
Year 2030	1.7	232.4	16.5	0.3	0.8	0.8
Year 2045	1.6	226.7	16.3	0.3	0.7	0.7

Emissions include electricity consumption by electric RTGs.

Table E1.2-A113-195. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 3 with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	450	6,644	2,642	10	48	46
Year 2010	773	14,584	2,751	2	41	41
Year 2015	14	2,089	148	3	7	7
Year 2030	18	2,518	179	4	8	8
Year 2045	17	2,456	176	4	8	8

Table E1.2-Alt3-196. Peak Daily Operational Emissions Without Mitigation
Alternative 3

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	379	1,359	3,693	31	179	165
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	945	3,428	12,785	5,651	1,027	824
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	784	2,822	11,262	5,622	942	747
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	453	-3,840	9,894	5,640	974	774
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	181	377	4,428	4,268	521	416
Ships - Hoteling	39	105	1,386	2,484	214	171
Tugboats	1	10	56	0	2	2
Trucks	232	994	1,984	4	181	86
Trains	78	269	1,383	1	42	38
Railyard Equipment	4	143	121	0	4	3
Terminal Equipment	86	2,244	1,951	6	66	61
Worker Commuter Vehicles	5	67	9	0	18	4
Total - Project Year 2015	626	4,209	11,318	6,764	1,047	782
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	465	3,602	9,795	6,735	962	704
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	606	1,917	11,125	6,763	1,040	775
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	193	402	4,717	4,532	554	443
Ships - Hoteling	39	105	1,386	2,484	214	171
Tugboats	1	10	42	0	2	2
Trucks	116	493	1,040	4	147	42
Trains	61	269	1,133	1	30	28
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	36	2,335	384	7	10	9
Worker Commuter Vehicles	4	39	4	0	21	4
Total - Project Year 2030	452	3,784	8,724	7,029	979	699
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	291	3,177	7,201	7,000	894	621
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	430	1,391	8,519	7,028	971	691
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	193	402	4,717	4,532	554	443
Ships - Hoteling	39	105	1,386	2,484	214	171
Tugboats	1	10	42	0	2	2
Trucks	108	463	985	4	145	40
Trains	55	269	1,050	1	26	24
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	36	2,335	384	7	10	9
Worker Commuter Vehicles	3	33	3	0	21	4
Total - Project Year 2045	438	3,747	8,586	7,029	972	693
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	276	3,140	7,063	7,000	887	615
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	416	1,411	8,383	7,028	965	686
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-Alt3-197. Average Daily Operational Emissions Without Mitigation
Alternative 3

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	16	42	548	472	49	39
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	154	553	1,502	13	73	67
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	431	1,732	5,024	946	344	265
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	371	1,507	4,458	936	313	236
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	248	-969	3,949	942	325	246
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	67	140	1,550	892	137	110
Ships - Hoteling	19	51	667	571	59	47
Tugboats	1	6	32	0	1	1
Trucks	174	744	1,485	3	135	64
Trains	33	116	594	0	18	17
Railyard Equipment	2	79	67	0	2	2
Terminal Equipment	39	1,017	884	3	30	28
Worker Commuter Vehicles	4	55	7	0	15	3
Total - Project Year 2015	339	2,207	5,286	1,469	398	272
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	279	1,982	4,720	1,458	366	243
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	332	1,355	5,215	1,469	395	269
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	89	187	2,062	1,182	182	146
Ships - Hoteling	21	57	745	632	66	53
Tugboats	1	7	30	0	1	1
Trucks	95	403	850	4	120	34
Trains	32	140	590	0	16	15
Railyard Equipment	1	87	12	0	0	0
Terminal Equipment	18	1,181	194	3	5	5
Worker Commuter Vehicles	3	32	3	0	17	3
Total - Project Year 2030	260	2,096	4,486	1,822	409	257
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	200	1,870	3,920	1,811	377	228
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	252	1,206	4,410	1,821	406	254
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	89	187	2,062	1,182	182	146
Ships - Hoteling	21	57	745	632	66	53
Tugboats	1	7	30	0	1	1
Trucks	88	378	805	4	118	32
Trains	29	140	547	0	13	12
Railyard Equipment	1	87	12	0	0	0
Terminal Equipment	18	1,181	194	3	5	5
Worker Commuter Vehicles	2	27	3	0	17	3
Total - Project Year 2045	251	2,065	4,398	1,822	405	253
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	191	1,840	3,832	1,811	373	224
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	243	1,197	4,322	1,821	402	250
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-Alt3-198. Peak Daily Operational Emissions With Mitigation
Alternative 3

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	450	6,644	2,642	10	48	46
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	1,016	8,714	11,734	5,629	896	706
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	855	8,107	10,211	5,601	812	628
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	524	1,445	8,843	5,619	844	656
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	125	237	1,433	78	51	41
Ships - Hoteling	2	12	83	30	8	6
Tugboats	1	10	56	0	2	2
Trucks	81	277	696	1	123	34
Trains	78	269	1,383	1	42	38
Railyard Equipment	3	135	69	0	2	2
Terminal Equipment	14	2,089	148	3	7	7
Worker Commuter Vehicles	5	67	9	0	18	4
Total - Project Year 2015	310	3,096	3,877	114	252	133
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	149	2,489	2,354	86	168	56
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	290	804	3,684	113	246	127
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	133	251	1,504	82	54	44
Ships - Hoteling	2	12	83	30	8	6
Tugboats	1	10	42	0	2	2
Trucks	133	396	1,167	0	155	51
Trains	61	269	1,133	1	30	28
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	18	2,518	179	4	8	8
Worker Commuter Vehicles	4	39	4	0	21	4
Total - Project Year 2030	355	3,625	4,130	117	279	143
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	194	3,019	2,607	89	194	65
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	333	1,232	3,925	116	271	136
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	133	251	1,504	82	54	44
Ships - Hoteling	2	12	83	30	8	6
Tugboats	1	10	42	0	2	2
Trucks	133	396	1,167	0	155	51
Trains	55	269	1,050	1	25	23
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	17	2,456	176	4	8	8
Worker Commuter Vehicles	3	33	3	0	21	4
Total - Project Year 2045	348	3,557	4,044	117	274	139
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	186	2,950	2,521	89	189	61
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	326	1,221	3,841	116	267	131
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Table E1.2-Alt3-199. Average Daily Operational Emissions With Mitigation
Alternative 3

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	7	20	243	270	24	19
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	183	2,701	1,074	4	20	19
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	451	3,859	4,292	735	266	197
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	391	3,633	3,726	724	235	168
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	268	1,158	3,218	731	247	178
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	52	103	670	40	23	18
Ships - Hoteling	1	7	47	18	4	4
Tugboats	1	6	32	0	1	1
Trucks	60	207	521	1	92	25
Trains	33	116	594	0	18	16
Railyard Equipment	1	73	30	0	1	1
Terminal Equipment	7	947	67	1	3	3
Worker Commuter Vehicles	4	55	7	0	15	3
Total - Project Year 2015	160	1,513	1,967	60	157	71
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	100	1,287	1,401	50	126	43
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	153	661	1,895	60	155	69
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	69	137	886	52	31	24
Ships - Hoteling	2	7	51	19	5	4
Tugboats	1	7	30	0	1	1
Trucks	109	324	954	0	127	42
Trains	32	140	590	0	16	14
Railyard Equipment	1	87	12	0	0	0
Terminal Equipment	9	1,274	90	2	4	4
Worker Commuter Vehicles	3	32	3	0	17	3
Total - Project Year 2030	226	2,009	2,617	74	201	94
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	166	1,784	2,051	63	169	65
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	218	1,120	2,540	73	198	91
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	69	137	886	52	31	24
Ships - Hoteling	2	7	51	19	5	4
Tugboats	1	7	30	0	1	1
Trucks	109	324	954	0	127	42
Trains	29	140	547	0	13	12
Railyard Equipment	1	87	12	0	0	0
Terminal Equipment	9	1,242	89	2	4	4
Worker Commuter Vehicles	2	27	3	0	17	3
Total - Project Year 2045	222	1,973	2,572	74	198	91
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	162	1,747	2,006	63	167	62
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	214	1,104	2,496	73	196	89
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Table E1.2-Alt4-1. Annual Ship Visit Data - Alternative 4

<i>Project Scenario/Ship Type</i>	<i>Annual Ship Visits</i>	<i>Avg Hoteling per Ship (hr)</i>
Project Year 2005		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	42	70.0
Containerships 3,000 - 5,000 TEU	10	51.7
General Cargo Vessels	-	-
Total	52	
Project Year 2010		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	10	56.1
Containerships 5,000 - 6,000 TEU	62	37.4
Containerships 3,000 - 5,000 TEU	31	28.0
General Cargo Vessels	-	-
Total	104	
Project Year 2015		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	31	55.0
Containerships 5,000 - 6,000 TEU	94	36.7
Containerships 3,000 - 5,000 TEU	31	27.5
General Cargo Vessels	-	-
Total	156	
Project Year 2030 / 2045		
Containerships 9,000 - 11,000 TEU	17	47.9
Containerships 8,000 - 9,000 TEU	52	41.1
Containerships 5,000 - 6,000 TEU	110	27.7
Containerships 3,000 - 5,000 TEU	29	20.9
General Cargo Vessels	-	-
Total	208	

Table E1.2-Alt4-2. Peak Day Ship Visit Data - Alternative 4

Project Scenario/Ship Type	Peak Day Arrivals	Peak Day Departures	Peak Day Hoteling (hr)	
			Without Mitigation	With Mitigation
Project Year 2005				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1		20.4	20.4
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	20.4
Project Year 2010				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1	1	41.1	37.9
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	1	41.1	37.9
Project Year 2015				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1	1	41.1	37.9
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	1	41.1	37.9
Project Year 2030 / 2045				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1	1	41.1	37.9
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	1	41.1	37.9

Notes: (1) Hoteling time equals 24 hours minus vessel transit time within the SCAB. Because the Vessel Speed Reduction (VSR) program increases transit time, the hoteling times are shorter when VSR is implemented as mitigation. For the Mitigated Project, VSR is assumed for 2010, 2015, 2030, and 2045. VSR is not assumed for the unmitigated project and for the 2005 mitigated project.

Table E1.2-Alt4-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP)

Alternative 4

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel</i>	<i>Load Factor (1)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	70.0	127,267
Containerships 3,000 - 5,000 TEU	6,526	0.20	51.7	67,533
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	56.1	113,608
Containerships 5,000 - 6,000 TEU	11,360	0.16	37.4	67,902
Containerships 3,000 - 5,000 TEU	6,526	0.20	28.0	36,529
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	55.0	111,405
Containerships 5,000 - 6,000 TEU	11,360	0.16	36.7	66,622
Containerships 3,000 - 5,000 TEU	6,526	0.20	27.5	35,861
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	47.9	96,923
Containerships 8,000 - 9,000 TEU	13,501	0.15	41.1	83,295
Containerships 5,000 - 6,000 TEU	11,360	0.16	27.7	50,298
Containerships 3,000 - 5,000 TEU	6,526	0.20	20.9	27,336
General Cargo Vessels	1,776	0.22	-	-

(1) Source: POLA 2005 Emission Inventory Report.

Table E1.2-Alt4-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit

Alternative 4

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel (1)</i>	<i>Load Factor (2)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	4.1	8,303
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-

Note: Average anchoring time was derived from actual anchoring data for China

Shipping ship visits for 2004, 2005, and 2006, provided by Starcrest and POLA.

**Table E1.2-Alt4-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit
Alternative 4**

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	70.0	10.806
Containerships 3,000 - 5,000 TEU	0.1543	51.7	7.985
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	56.1	8.658
Containerships 5,000 - 6,000 TEU	0.1543	37.4	5.765
Containerships 3,000 - 5,000 TEU	0.1543	28.0	4.319
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	55.0	8.490
Containerships 5,000 - 6,000 TEU	0.1543	36.7	5.657
Containerships 3,000 - 5,000 TEU	0.1543	27.5	4.240
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	47.9	7.386
Containerships 8,000 - 9,000 TEU	0.1543	41.1	6.348
Containerships 5,000 - 6,000 TEU	0.1543	27.7	4.271
Containerships 3,000 - 5,000 TEU	0.1543	20.9	3.232
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt4-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit

Alternative 4

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	4.1	0.633
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt4-18. Annual Emissions from OGV Main Engine - Alternative 4

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.53	1.24	16.03	9.33	1.33	1.06
Containerships 5,000 - 6,000 TEU	2.32	5.42	70.11	40.79	5.81	4.65
Containerships 3,000 - 5,000 TEU	0.91	2.11	27.32	15.89	2.26	1.81
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.8	8.8	113.5	66.0	9.4	7.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.59	3.72	48.10	27.98	3.99	3.19
Containerships 5,000 - 6,000 TEU	3.49	8.13	105.17	61.18	8.72	6.97
Containerships 3,000 - 5,000 TEU	0.91	2.11	27.32	15.89	2.26	1.81
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.0	14.0	180.6	105.1	15.0	12.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.91	2.13	27.48	15.98	2.28	1.82
Containerships 8,000 - 9,000 TEU	2.66	6.20	80.16	46.63	6.64	5.31
Containerships 5,000 - 6,000 TEU	4.11	9.58	123.86	72.06	10.26	8.21
Containerships 3,000 - 5,000 TEU	0.85	1.97	25.50	14.83	2.11	1.69
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.5	19.9	257.0	149.5	21.3	17.0

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt4-19. Annual Emissions from OGV Main Engine - Alternative 4

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.46	1.03	11.07	6.08	0.96	0.77
Containerships 5,000 - 6,000 TEU	2.02	4.52	48.43	26.57	4.19	3.35
Containerships 3,000 - 5,000 TEU	0.74	1.69	19.54	11.02	1.66	1.33
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.2	7.2	79.0	43.7	6.8	5.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.39	3.10	33.22	18.23	2.87	2.30
Containerships 5,000 - 6,000 TEU	3.03	6.77	72.64	39.85	6.28	5.03
Containerships 3,000 - 5,000 TEU	0.74	1.69	19.54	11.02	1.66	1.33
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.2	11.6	125.4	69.1	10.8	8.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.79	1.77	18.98	10.41	1.64	1.31
Containerships 8,000 - 9,000 TEU	2.31	5.16	55.37	30.38	4.79	3.83
Containerships 5,000 - 6,000 TEU	3.57	7.98	85.56	46.94	7.40	5.92
Containerships 3,000 - 5,000 TEU	0.69	1.58	18.24	10.29	1.55	1.24
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.4	16.5	178.1	98.0	15.4	12.3

Assumes VSRP compliance at the 2005 level.

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt4-20. Annual Emissions from OGV Main Engine - Alternative 4

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.38	2.79	1.24	0.27	0.22
Containerships 5,000 - 6,000 TEU	0.84	1.66	12.21	5.43	1.19	0.95
Containerships 3,000 - 5,000 TEU	0.28	0.60	5.05	2.50	0.47	0.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	2.6	20.1	9.2	1.9	1.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.57	1.14	8.38	3.73	0.82	0.66
Containerships 5,000 - 6,000 TEU	1.26	2.49	18.32	8.15	1.79	1.43
Containerships 3,000 - 5,000 TEU	0.28	0.60	5.05	2.50	0.47	0.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	31.7	14.4	3.1	2.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.33	0.65	4.79	2.13	0.47	0.37
Containerships 8,000 - 9,000 TEU	0.96	1.90	13.96	6.21	1.36	1.09
Containerships 5,000 - 6,000 TEU	1.48	2.94	21.57	9.60	2.11	1.69
Containerships 3,000 - 5,000 TEU	0.26	0.56	4.71	2.33	0.43	0.35
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	6.0	45.0	20.3	4.4	3.5

Assumes main engines use residual fuel with 2.7% sulfur content.

**Table E1.2-Alt4-21. Annual Emissions from OGV Main Engine - Alternative 4
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.60	0.08	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.39	0.43	2.63	0.37	0.34	0.28
Containerships 3,000 - 5,000 TEU	0.12	0.16	0.91	0.17	0.12	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	4.1	0.6	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.27	0.30	1.81	0.25	0.24	0.19
Containerships 5,000 - 6,000 TEU	0.58	0.65	3.95	0.56	0.52	0.41
Containerships 3,000 - 5,000 TEU	0.12	0.16	0.91	0.17	0.12	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	1.1	6.7	1.0	0.9	0.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.15	0.17	1.03	0.15	0.14	0.11
Containerships 8,000 - 9,000 TEU	0.44	0.50	3.01	0.42	0.39	0.32
Containerships 5,000 - 6,000 TEU	0.69	0.77	4.65	0.65	0.61	0.49
Containerships 3,000 - 5,000 TEU	0.12	0.15	0.85	0.16	0.11	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	1.6	9.5	1.4	1.2	1.0

Assumes main engines use residual fuel with 2.7% sulfur content.

**Table E1.2-Alt4-22. Annual Emissions from OGV Main Engine - Alternative 4
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.09	0.51	0.11	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.28	0.38	2.22	0.48	0.27	0.22
Containerships 3,000 - 5,000 TEU	0.09	0.14	0.81	0.22	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.6	3.5	0.8	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.26	1.52	0.33	0.19	0.15
Containerships 5,000 - 6,000 TEU	0.42	0.57	3.32	0.73	0.41	0.33
Containerships 3,000 - 5,000 TEU	0.09	0.14	0.81	0.22	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.0	5.7	1.3	0.7	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.11	0.15	0.87	0.19	0.11	0.09
Containerships 8,000 - 9,000 TEU	0.32	0.44	2.53	0.55	0.31	0.25
Containerships 5,000 - 6,000 TEU	0.50	0.67	3.92	0.85	0.48	0.38
Containerships 3,000 - 5,000 TEU	0.08	0.13	0.75	0.21	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	1.4	8.1	1.8	1.0	0.8

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt4-23. Annual Emissions from OGV Main Engine - Alternative 4

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.05	0.29	0.04	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.19	0.20	1.25	0.16	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.45	0.06	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.0	0.2	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.14	0.86	0.11	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.28	0.30	1.88	0.24	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.45	0.06	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	3.2	0.4	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.07	0.08	0.49	0.06	0.06	0.05
Containerships 8,000 - 9,000 TEU	0.22	0.23	1.43	0.18	0.19	0.15
Containerships 5,000 - 6,000 TEU	0.33	0.36	2.21	0.28	0.29	0.23
Containerships 3,000 - 5,000 TEU	0.06	0.07	0.42	0.05	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.7	4.6	0.6	0.6	0.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt4-24. Annual Emissions from OGV Main Engine - Alternative 4

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.61	0.08	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.41	0.43	2.68	0.34	0.36	0.28
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.96	0.12	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	4.3	0.5	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.28	0.30	1.84	0.23	0.24	0.19
Containerships 5,000 - 6,000 TEU	0.61	0.65	4.02	0.51	0.53	0.43
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.96	0.12	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	1.1	6.8	0.9	0.9	0.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.16	0.17	1.05	0.13	0.14	0.11
Containerships 8,000 - 9,000 TEU	0.46	0.50	3.07	0.39	0.41	0.32
Containerships 5,000 - 6,000 TEU	0.72	0.77	4.74	0.60	0.63	0.50
Containerships 3,000 - 5,000 TEU	0.14	0.15	0.90	0.11	0.12	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	1.6	9.8	1.2	1.3	1.0

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt4-25. Max Daily Emissions from OGV Main Engine - Alternative 4

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	74.5	173.8	2,247.2	2,178.9	247.2	197.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	74.5	173.8	2,247.2	2,178.9	247.2	197.8

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt4-26. Max Daily Emissions from OGV Main Engine - Alternative 4
Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	97.6	227.7	2,943.7	2,854.2	323.9	259.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	97.6	227.7	2,943.7	2,854.2	323.9	259.1
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	97.6	227.7	2,943.7	2,854.2	323.9	259.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	97.6	227.7	2,943.7	2,854.2	323.9	259.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	97.6	227.7	2,943.7	2,854.2	323.9	259.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	97.6	227.7	2,943.7	2,854.2	323.9	259.1

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt4-27. Max Daily Emissions from OGV Main Engine - Alternative 4

Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	391.4	290.3	50.8	40.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	391.4	290.3	50.8	40.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	391.4	290.3	50.8	40.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	391.4	290.3	50.8	40.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	391.4	290.3	50.8	40.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	391.4	290.3	50.8	40.6

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-28. Max Daily Emissions from OGV Main Engine - Alternative 4
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-29. Max Daily Emissions from OGV Main Engine - Alternative 4
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt4-30. Max Daily Emissions from OGV Main Engine - Alternative 4

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt4-31. Max Daily Emissions from OGV Main Engine - Alternative 4

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	86.0	18.0	15.1	12.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	86.0	18.0	15.1	12.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	86.0	18.0	15.1	12.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	86.0	18.0	15.1	12.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	86.0	18.0	15.1	12.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	86.0	18.0	15.1	12.1

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-32. Annual Emissions from OGV Auxiliary Engines - Alternative 4
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.43	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.17	1.81	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.68	0.57	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.3	2.7	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.29	1.08	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.26	2.72	0.33	0.27
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.68	0.57	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	5.2	4.4	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.05	0.69	0.57	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.06	0.16	2.15	1.79	0.22	0.18
Containerships 5,000 - 6,000 TEU	0.10	0.29	3.84	3.20	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.63	0.53	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	7.3	6.1	0.7	0.6

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-Alt4-33. Annual Emissions from OGV Auxiliary Engines - Alternative 4
Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.93	0.78	0.10	0.08
Containerships 5,000 - 6,000 TEU	0.13	0.35	4.70	3.92	0.48	0.38
Containerships 3,000 - 5,000 TEU	0.04	0.10	1.37	1.15	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	7.0	5.8	0.7	0.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.79	2.33	0.29	0.23
Containerships 5,000 - 6,000 TEU	0.19	0.53	7.05	5.88	0.72	0.58
Containerships 3,000 - 5,000 TEU	0.04	0.10	1.37	1.15	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	11.2	9.4	1.1	0.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.11	1.49	1.24	0.15	0.12
Containerships 8,000 - 9,000 TEU	0.13	0.35	4.66	3.88	0.48	0.38
Containerships 5,000 - 6,000 TEU	0.23	0.62	8.31	6.93	0.85	0.68
Containerships 3,000 - 5,000 TEU	0.03	0.10	1.28	1.07	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.2	15.7	13.1	1.6	1.3

Assumes VSRP compliance at the 2005 level.

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-Alt4-34. Annual Emissions from OGV Auxiliary Engines - Alternative 4

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.55	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.78	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.80	0.51	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.7	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.65	1.07	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.17	2.69	0.33	0.27
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.80	0.51	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.6	4.3	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.88	0.57	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.75	1.78	0.22	0.18
Containerships 5,000 - 6,000 TEU	0.14	0.37	4.91	3.17	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.48	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	9.3	6.0	0.7	0.6

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt4-35. Annual Emissions from OGV Auxiliary Engines - Alternative 4
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.56	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.77	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.49	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.6	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.68	1.08	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.11	0.32	4.15	2.68	0.33	0.26
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.49	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.6	4.3	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.90	0.58	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.80	1.81	0.22	0.18
Containerships 5,000 - 6,000 TEU	0.14	0.37	4.89	3.16	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.70	0.45	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	9.3	6.0	0.7	0.6

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt4-36. Annual Emissions from OGV Auxiliary Engines - Alternative 4
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.04	0.49	0.32	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.42	1.56	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.66	0.43	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	2.3	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.47	0.95	0.12	0.09
Containerships 5,000 - 6,000 TEU	0.10	0.28	3.64	2.34	0.29	0.23
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.66	0.43	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.7	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.06	0.78	0.51	0.06	0.05
Containerships 8,000 - 9,000 TEU	0.07	0.19	2.45	1.58	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.12	0.33	4.28	2.76	0.34	0.27
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.62	0.40	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	8.1	5.2	0.6	0.5

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-37. Annual Emissions from OGV Auxiliary Engines - Alternative 4

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.29	0.83	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.23	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.9	1.2	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.78	0.51	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.05	0.15	1.94	1.25	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.23	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.31	0.84	0.10	0.08
Containerships 5,000 - 6,000 TEU	0.06	0.17	2.28	1.47	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.33	0.21	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.3	2.8	0.3	0.3

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-38. Annual Emissions from OGV Auxiliary Engines - Alternative 4

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.56	0.36	0.04	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.77	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.49	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.6	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.68	1.08	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.11	0.32	4.15	2.68	0.33	0.26
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.75	0.49	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.6	4.3	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.90	0.58	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.80	1.81	0.22	0.18
Containerships 5,000 - 6,000 TEU	0.14	0.37	4.89	3.16	0.39	0.31
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.70	0.45	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	9.3	6.0	0.7	0.6

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-39. Annual Emissions from OGV Auxiliary Engines - Alternative 4

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.36	6.48	85.25	54.99	6.79	5.43
Containerships 3,000 - 5,000 TEU	0.30	0.82	10.77	6.95	0.86	0.69
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.3	96.0	61.9	7.6	6.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.52	1.43	18.84	12.15	1.50	1.20
Containerships 5,000 - 6,000 TEU	1.87	5.14	67.57	43.59	5.38	4.30
Containerships 3,000 - 5,000 TEU	0.50	1.38	18.18	11.72	1.45	1.16
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	8.0	104.6	67.5	8.3	6.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.53	4.21	55.43	35.76	4.41	3.53
Containerships 5,000 - 6,000 TEU	2.75	7.56	99.45	64.15	7.92	6.33
Containerships 3,000 - 5,000 TEU	0.49	1.36	17.84	11.51	1.42	1.14
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.8	13.1	172.7	111.4	13.8	11.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.71	1.96	25.72	16.59	2.05	1.64
Containerships 8,000 - 9,000 TEU	1.91	5.25	69.08	44.56	5.50	4.40
Containerships 5,000 - 6,000 TEU	2.44	6.72	88.43	57.04	7.04	5.63
Containerships 3,000 - 5,000 TEU	0.35	0.97	12.69	8.19	1.01	0.81
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.4	14.9	195.9	126.4	15.6	12.5

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-40. Annual Emissions from OGV Auxiliary Engines - Alternative 4

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.38	0.89	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.21	0.56	7.42	4.78	0.59	0.47
Containerships 3,000 - 5,000 TEU	0.07	0.20	2.66	1.72	0.21	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.5	7.4	0.9	0.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.11	0.31	4.13	2.66	0.33	0.26
Containerships 5,000 - 6,000 TEU	0.31	0.85	11.12	7.18	0.89	0.71
Containerships 3,000 - 5,000 TEU	0.07	0.20	2.66	1.72	0.21	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	1.4	17.9	11.6	1.4	1.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.06	0.17	2.20	1.42	0.18	0.14
Containerships 8,000 - 9,000 TEU	0.19	0.52	6.89	4.44	0.55	0.44
Containerships 5,000 - 6,000 TEU	0.36	1.00	13.10	8.45	1.04	0.83
Containerships 3,000 - 5,000 TEU	0.07	0.19	2.49	1.60	0.20	0.16
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.9	24.7	15.9	2.0	1.6

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4
Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.9	5.2	69.6	96.8	9.8	7.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	5.2	69.6	96.8	9.8	7.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.9	5.2	69.6	96.8	9.8	7.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	5.2	69.6	96.8	9.8	7.9
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.9	5.2	69.6	96.8	9.8	7.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	5.2	69.6	96.8	9.8	7.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-Alt4-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4
Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	91.2	126.8	12.9	10.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	91.2	126.8	12.9	10.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	91.2	126.8	12.9	10.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	91.2	126.8	12.9	10.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	91.2	126.8	12.9	10.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	91.2	126.8	12.9	10.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-Alt4-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	90.5	125.8	12.8	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	90.5	125.8	12.8	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	90.5	125.8	12.8	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	90.5	125.8	12.8	10.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	90.5	125.8	12.8	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	90.5	125.8	12.8	10.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt4-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt4-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt4-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	65.8	181.1	2,419.6	3,362.7	341.1	272.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	65.8	181.1	2,419.6	3,362.7	341.1	272.8

Notes: (1) Assumes worst case fuel with 4.5% sulfur and no AMP.

Table E1.2-Alt4-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-Alt4-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 4
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt4-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 4

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt4-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 4

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.004	0.009	0.090	0.557	0.029	0.023
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.022	0.133	0.007	0.006
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.022	0.138	0.007	0.006
Containerships 5,000 - 6,000 TEU	0.007	0.013	0.134	0.828	0.043	0.035
Containerships 3,000 - 5,000 TEU	0.003	0.007	0.067	0.414	0.022	0.017
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.4	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.003	0.007	0.067	0.414	0.022	0.017
Containerships 5,000 - 6,000 TEU	0.010	0.020	0.201	1.242	0.065	0.052
Containerships 3,000 - 5,000 TEU	0.003	0.007	0.067	0.414	0.022	0.017
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.3	2.1	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.002	0.004	0.036	0.221	0.012	0.009
Containerships 8,000 - 9,000 TEU	0.005	0.011	0.112	0.690	0.036	0.029
Containerships 5,000 - 6,000 TEU	0.012	0.023	0.237	1.462	0.077	0.061
Containerships 3,000 - 5,000 TEU	0.003	0.006	0.063	0.386	0.020	0.016
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	2.8	0.1	0.1

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt4-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 4
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.006	0.036	0.002	0.002
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.219	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
Containerships 5,000 - 6,000 TEU	0.003	0.005	0.053	0.328	0.017	0.014
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.009	0.058	0.003	0.002
Containerships 8,000 - 9,000 TEU	0.001	0.003	0.030	0.182	0.010	0.008
Containerships 5,000 - 6,000 TEU	0.003	0.006	0.063	0.387	0.020	0.016
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.017	0.102	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt4-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 4
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.021	0.129	0.007	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.005	0.031	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.005	0.032	0.002	0.001
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.031	0.192	0.010	0.008
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.016	0.096	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.016	0.096	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.002	0.005	0.047	0.287	0.015	0.012
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.016	0.096	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
Containerships 8,000 - 9,000 TEU	0.001	0.003	0.026	0.160	0.008	0.007
Containerships 5,000 - 6,000 TEU	0.003	0.005	0.055	0.338	0.018	0.014
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.014	0.089	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.6	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 4

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.011	0.069	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.003	0.016	0.001	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.003	0.017	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.017	0.102	0.005	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.025	0.153	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.004	0.027	0.001	0.001
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.014	0.085	0.004	0.004
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.029	0.180	0.009	0.008
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.048	0.002	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.3	0.0	0.0

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 4

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.006	0.036	0.002	0.002
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.219	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
Containerships 5,000 - 6,000 TEU	0.003	0.005	0.053	0.328	0.017	0.014
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.018	0.109	0.006	0.005
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.001	0.009	0.058	0.003	0.002
Containerships 8,000 - 9,000 TEU	0.001	0.003	0.030	0.182	0.010	0.008
Containerships 5,000 - 6,000 TEU	0.003	0.006	0.063	0.387	0.020	0.016
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.017	0.102	0.005	0.004
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 4

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.164	0.328	3.345	20.632	1.080	0.864
Containerships 3,000 - 5,000 TEU	0.029	0.058	0.588	3.630	0.190	0.152
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.033	0.065	0.664	4.093	0.214	0.171
Containerships 5,000 - 6,000 TEU	0.130	0.260	2.651	16.354	0.856	0.685
Containerships 3,000 - 5,000 TEU	0.049	0.097	0.993	6.126	0.321	0.257
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.3	26.6	1.4	1.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.096	0.191	1.952	12.041	0.630	0.504
Containerships 5,000 - 6,000 TEU	0.191	0.383	3.902	24.069	1.260	1.008
Containerships 3,000 - 5,000 TEU	0.048	0.096	0.975	6.014	0.315	0.252
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	6.8	42.1	2.2	1.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.044	0.089	0.906	5.587	0.292	0.234
Containerships 8,000 - 9,000 TEU	0.119	0.239	2.433	15.005	0.786	0.628
Containerships 5,000 - 6,000 TEU	0.170	0.340	3.470	21.402	1.120	0.896
Containerships 3,000 - 5,000 TEU	0.034	0.068	0.694	4.279	0.224	0.179
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.7	7.5	46.3	2.4	1.9

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 4

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.010	0.019	0.196	1.208	0.063	0.051
Containerships 3,000 - 5,000 TEU	0.002	0.005	0.047	0.288	0.015	0.012
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.002	0.005	0.048	0.299	0.016	0.013
Containerships 5,000 - 6,000 TEU	0.014	0.029	0.291	1.795	0.094	0.075
Containerships 3,000 - 5,000 TEU	0.007	0.014	0.145	0.897	0.047	0.038
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	3.0	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.007	0.014	0.145	0.897	0.047	0.038
Containerships 5,000 - 6,000 TEU	0.021	0.043	0.436	2.692	0.141	0.113
Containerships 3,000 - 5,000 TEU	0.007	0.014	0.145	0.897	0.047	0.038
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.7	4.5	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.004	0.008	0.078	0.479	0.025	0.020
Containerships 8,000 - 9,000 TEU	0.012	0.024	0.242	1.496	0.078	0.063
Containerships 5,000 - 6,000 TEU	0.025	0.050	0.514	3.171	0.166	0.133
Containerships 3,000 - 5,000 TEU	0.007	0.013	0.136	0.838	0.044	0.035
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	6.0	0.3	0.3

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt4-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4
Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt4-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt4-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt4-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt4-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4

Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt4-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt4-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4

Hoteling

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.6	9.2	96.2	1,257.8	50.6	40.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	9.2	96.2	1,257.8	50.6	40.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.6	9.2	96.2	1,257.8	50.6	40.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	9.2	96.2	1,257.8	50.6	40.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.6	9.2	96.2	1,257.8	50.6	40.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.6	9.2	96.2	1,257.8	50.6	40.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt4-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt4-67b. LNG Truck Mitigation Rates**Mitigated Project**

<i>Year</i>	<i>% Trucks</i>
Year 2005	0.0%
Year 2006	0.0%
Year 2007	0.0%
Year 2008	0.0%
Year 2009	0.0%
Year 2010	0.0%
Year 2011	0.0%
Year 2012	50.0%
Year 2013	50.0%
Year 2014	70.0%
Year 2015	70.0%
Year 2016	70.0%
Year 2017	70.0%
Year 2018	100.0%
Year 2019	100.0%
Year 2020	100.0%
Year 2021	100.0%
Year 2022	100.0%
Year 2023	100.0%
Year 2024	100.0%
Year 2025	100.0%
Year 2026	100.0%
Year 2027	100.0%
Year 2028	100.0%
Year 2029	100.0%
Year 2030+	100.0%

Table E1.2-Alt4-68. Annual Emissions from Tugboat Main Engine - Alternative 4

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.10	0.51	3.30	0.22	0.13	0.12
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.10	0.61	0.00	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.09	0.61	3.69	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	0.04	0.31	1.84	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.15	1.02	6.15	0.00	0.19	0.18
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.31	1.63	0.00	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.13	0.92	4.90	0.00	0.17	0.16
Containerships 3,000 - 5,000 TEU	0.04	0.31	1.63	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.22	1.53	8.17	0.01	0.29	0.26
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.16	0.65	0.00	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.07	0.51	2.03	0.00	0.09	0.08
Containerships 5,000 - 6,000 TEU	0.15	1.08	4.30	0.00	0.19	0.18
Containerships 3,000 - 5,000 TEU	0.04	0.28	1.14	0.00	0.05	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.29	2.03	8.11	0.01	0.36	0.33

Table E1.2-Alt4-69. Max Daily Emissions from Tugboat Main Engine - Alternative 4

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	118.20	0.07	3.67	3.37
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	118.2	0.1	3.7	3.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	104.77	0.07	3.67	3.37
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	104.8	0.1	3.7	3.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	77.99	0.07	3.49	3.21
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	78.0	0.1	3.5	3.2

Table E1.2-Alt4-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 4

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.04	0.21	0.02	0.01	0.01
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.23	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.12	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.07	0.39	0.00	0.01	0.01
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.02	0.11	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.06	0.34	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.11	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.11	0.57	0.00	0.02	0.02
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.04	0.15	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.08	0.31	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.08	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.14	0.58	0.00	0.02	0.02

Table E1.2-Alt4-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 4

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	7.51	0.01	0.27	0.26
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.5	0.0	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	7.32	0.01	0.27	0.26
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.3	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	5.59	0.01	0.23	0.22
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	5.6	0.0	0.2	0.2

Table E1.2-Alt4-72. Summary of Annual Marine Vessel Emissions without Mitigation

Alternative 4

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	2.8	7.7	99.9	86.2	8.9	7.1
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	8.6	20.2	235.8	162.8	20.8	16.6
Project Year 2010						
Ships - AQMD to 20 mile	3.9	9.0	116.7	68.7	9.7	7.8
Ships - 20 mile to PA	3.4	7.8	86.0	49.5	7.5	6.0
Ships - PA	1.4	3.0	24.4	13.2	2.3	1.9
Ships - Harbor Transit	1.3	1.9	15.4	7.1	1.6	1.3
Ships - Turning & Docking	1.1	1.5	12.3	5.2	1.3	1.1
Ships - Anchoring	0.3	0.9	11.9	10.4	1.1	0.9
Ships - Hoteling	3.1	8.4	108.9	94.0	9.7	7.8
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.1	6.5	0.0	0.2	0.2
Total	14.7	33.5	382.3	248.1	33.5	26.8
Project Year 2015						
Ships - AQMD to 20 mile	6.1	14.4	185.8	109.4	15.5	12.4
Ships - 20 mile to PA	5.5	12.4	136.6	78.5	12.0	9.6
Ships - PA	2.3	4.8	38.7	20.7	3.7	3.0
Ships - Harbor Transit	2.0	3.0	24.8	11.3	2.6	2.1
Ships - Turning & Docking	1.8	2.4	19.8	8.3	2.1	1.7
Ships - Anchoring	0.5	1.4	18.6	16.0	1.7	1.3
Ships - Hoteling	5.1	13.8	179.6	153.5	16.0	12.8
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.6	8.7	0.0	0.3	0.3
Total	23.6	53.8	612.7	397.7	53.8	43.1
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	8.7	20.4	264.3	155.6	22.0	17.6
Ships - 20 mile to PA	7.8	17.7	193.9	111.1	17.0	13.6
Ships - PA	3.3	6.8	54.8	29.0	5.3	4.2
Ships - Harbor Transit	2.9	4.3	35.3	15.8	3.7	2.9
Ships - Turning & Docking	2.5	3.4	28.1	11.7	3.0	2.4
Ships - Anchoring	0.7	2.0	25.6	21.9	2.3	1.8
Ships - Hoteling	5.8	15.6	203.4	172.7	18.0	14.4
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.3	2.2	8.7	0.0	0.4	0.4
Total	32.1	72.4	814.1	517.8	71.7	57.4

**Table E1.2-Alt4-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation
Alternative 4**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	76	179	2,317	2,276	257	206
Ships - 20 mile to PA	100	235	3,035	2,981	337	269
Ships - PA	30	60	486	474	66	53
Ships - Harbor Transit	26	39	327	309	51	41
Ships - Turning & Docking	23	30	260	233	42	33
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	70	190	2,516	4,621	392	313
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	126	0	4	4
Total	328	755	9,066	10,893	1,148	919
Project Year 2015						
Ships - AQMD to 20 mile	76	179	2,317	2,276	257	206
Ships - 20 mile to PA	100	235	3,035	2,981	337	269
Ships - PA	30	60	486	474	66	53
Ships - Harbor Transit	26	39	327	309	51	41
Ships - Turning & Docking	23	30	260	233	42	33
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	70	190	2,516	4,621	392	313
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	112	0	4	4
Total	328	755	9,053	10,893	1,148	919
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	76	179	2,317	2,276	257	206
Ships - 20 mile to PA	100	235	3,035	2,981	337	269
Ships - PA	30	60	486	474	66	53
Ships - Harbor Transit	26	39	327	309	51	41
Ships - Turning & Docking	23	30	260	233	42	33
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	70	190	2,516	4,621	392	313
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	84	0	4	3
Total	328	755	9,024	10,893	1,148	919

Table E1.2-Alt4-74. AMP Compliance Rates

Alternative 4 with Mitigation

Project Year	Compliance Rate
Project Year 2005	60%
Project Year 2006	70%
Project Year 2008	70%
Project Year 2009	70%
Project Year 2010	90%
Project Year 2011	100%
Project Year 2012	100%
Project Year 2015	100%
Project Year 2020	100%
Project Year 2030+	100%

Source: Stipulated Judgment & Expanded AMP.

Table E1.2-Alt4-75. Vessel Speed Reduction Program (VSRP) Compliance Rates

Alternative 4 with Mitigation

Year	Compliance Rate
Year 2005 (1)	68.0%
Year 2009+ (2)	100.0%

Notes: (1) This is the historical average compliance rate for CS for 2005 from 20 nm to the PA.

VSR was not observed beyond 20 nm. Source: POLA staff (K. Maggay, 2007).

(2) The VSR mitigation measure starting in 2009 applies from 40 nm to the PA.

**Table E1.2-Alt4-76. OGV Main Engine Slide Valve Compliance Rates
Alternative 4 with Mitigation**

<i>Year</i>	<i>Compliance Rate</i>
Year 2005	0.0%
Year 2009	25.0%
Year 2010	50.0%
Year 2012	75.0%
Year 2014	100.0%
Year 2015+	100.0%

Table E1.2-Alt4-78. OGV Main Engine Fuel Usage

Alternative 4 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt4-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit

Alternative 4 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

**Table E1.2-Alt4-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling
Alternative 4 with Mitigation**

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	71%	29%		
Project Year 2007	71%	29%		
Project Year 2009	50%	20%	30%	
Project Year 2010	36%	15%	50%	
Project Year 2011	36%	15%	50%	
Project Year 2012	36%	15%	50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt4-81. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.27	0.58	3.95	1.30	0.27	0.21
Containerships 5,000 - 6,000 TEU	1.18	2.52	17.26	5.69	1.17	0.94
Containerships 3,000 - 5,000 TEU	0.40	0.91	7.33	2.62	0.47	0.38
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.8	4.0	28.5	9.6	1.9	1.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.81	1.73	9.24	0.51	0.36	0.29
Containerships 5,000 - 6,000 TEU	1.76	3.78	20.20	1.12	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.40	0.91	5.72	0.34	0.21	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	6.4	35.2	2.0	1.4	1.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.46	0.99	5.28	0.29	0.21	0.17
Containerships 8,000 - 9,000 TEU	1.34	2.88	15.40	0.85	0.61	0.49
Containerships 5,000 - 6,000 TEU	2.08	4.45	23.79	1.32	0.94	0.75
Containerships 3,000 - 5,000 TEU	0.38	0.85	5.34	0.32	0.20	0.16
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.3	9.2	49.8	2.8	2.0	1.6

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt4-82. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.35	0.75	5.17	1.70	0.35	0.28
Containerships 5,000 - 6,000 TEU	1.54	3.30	22.61	7.45	1.53	1.23
Containerships 3,000 - 5,000 TEU	0.53	1.19	9.61	3.43	0.62	0.50
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.4	5.2	37.4	12.6	2.5	2.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.06	2.26	12.10	0.67	0.48	0.38
Containerships 5,000 - 6,000 TEU	2.31	4.95	26.46	1.47	1.04	0.83
Containerships 3,000 - 5,000 TEU	0.53	1.19	7.50	0.45	0.28	0.22
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.9	8.4	46.1	2.6	1.8	1.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.60	1.29	6.91	0.38	0.27	0.22
Containerships 8,000 - 9,000 TEU	1.76	3.77	20.17	1.12	0.80	0.64
Containerships 5,000 - 6,000 TEU	2.72	5.82	31.16	1.73	1.23	0.98
Containerships 3,000 - 5,000 TEU	0.49	1.11	7.00	0.42	0.26	0.21
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.6	12.0	65.2	3.7	2.6	2.0

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt4-83. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.38	2.25	0.66	0.16	0.13
Containerships 5,000 - 6,000 TEU	0.84	1.66	9.86	2.91	0.71	0.57
Containerships 3,000 - 5,000 TEU	0.28	0.60	4.08	1.34	0.28	0.22
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	2.6	16.2	4.9	1.1	0.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.57	1.14	5.28	0.26	0.22	0.18
Containerships 5,000 - 6,000 TEU	1.26	2.49	11.54	0.57	0.48	0.39
Containerships 3,000 - 5,000 TEU	0.28	0.60	3.18	0.18	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	20.0	1.0	0.8	0.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.33	0.65	3.01	0.15	0.13	0.10
Containerships 8,000 - 9,000 TEU	0.96	1.90	8.80	0.44	0.37	0.29
Containerships 5,000 - 6,000 TEU	1.48	2.94	13.59	0.67	0.57	0.46
Containerships 3,000 - 5,000 TEU	0.26	0.56	2.97	0.16	0.12	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	6.0	28.4	1.4	1.2	0.9

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt4-84. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.49	0.05	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.39	0.43	2.13	0.20	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.12	0.16	0.74	0.09	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	3.4	0.3	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.27	0.30	1.14	0.02	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.58	0.65	2.49	0.04	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.12	0.16	0.58	0.01	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	1.1	4.2	0.1	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.15	0.17	0.65	0.01	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.44	0.50	1.90	0.03	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.69	0.77	2.93	0.05	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.12	0.15	0.54	0.01	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	1.6	6.0	0.1	0.3	0.3

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt4-85. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.09	0.41	0.06	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.28	0.38	1.79	0.26	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.09	0.14	0.65	0.12	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.6	2.9	0.4	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.19	0.26	0.96	0.02	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.42	0.57	2.09	0.05	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.09	0.14	0.51	0.02	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.0	3.6	0.1	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.11	0.15	0.55	0.01	0.03	0.02
Containerships 8,000 - 9,000 TEU	0.32	0.44	1.60	0.04	0.08	0.07
Containerships 5,000 - 6,000 TEU	0.50	0.67	2.47	0.06	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.08	0.13	0.47	0.01	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	1.4	5.1	0.1	0.3	0.2

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt4-86. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.05	0.23	0.02	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.19	0.20	1.01	0.08	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.36	0.03	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	1.6	0.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.14	0.54	0.01	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.28	0.30	1.18	0.02	0.07	0.05
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.28	0.00	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	2.0	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.07	0.08	0.31	0.00	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.22	0.23	0.90	0.01	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.33	0.36	1.39	0.02	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.06	0.07	0.26	0.00	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.7	2.9	0.0	0.2	0.1

Mitigation measures include slide valves and low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt4-87. Annual Emissions from OGV Main Engine - Alternative 4 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.10	0.50	0.04	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.41	0.43	2.17	0.18	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.78	0.06	0.08	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	0.7	3.4	0.3	0.3	0.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.28	0.30	1.16	0.02	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.61	0.65	2.53	0.04	0.14	0.12
Containerships 3,000 - 5,000 TEU	0.15	0.16	0.61	0.01	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	1.1	4.3	0.1	0.2	0.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.16	0.17	0.66	0.01	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.46	0.50	1.93	0.03	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.72	0.77	2.98	0.04	0.17	0.14
Containerships 3,000 - 5,000 TEU	0.14	0.15	0.57	0.01	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	1.6	6.1	0.1	0.3	0.3

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt4-88. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.7	80.7	685.1	568.0	83.7	67.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.7	80.7	685.1	568.0	83.7	67.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.7	80.7	431.6	23.9	17.0	13.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.7	80.7	431.6	23.9	17.0	13.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.7	80.7	431.6	23.9	17.0	13.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.7	80.7	431.6	23.9	17.0	13.6

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt4-89. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	49.4	105.7	897.4	744.0	109.7	87.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	49.4	105.7	897.4	744.0	109.7	87.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	49.4	105.7	565.3	31.4	22.3	17.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	49.4	105.7	565.3	31.4	22.3	17.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	49.4	105.7	565.3	31.4	22.3	17.8
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	49.4	105.7	565.3	31.4	22.3	17.8

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt4-90. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	391.4	290.3	50.8	40.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	391.4	290.3	50.8	40.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	246.6	12.2	10.3	8.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	246.6	12.2	10.3	8.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	26.8	53.3	246.6	12.2	10.3	8.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	26.8	53.3	246.6	12.2	10.3	8.3

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt4-91. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	53.2	0.8	3.0	2.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	53.2	0.8	3.0	2.4
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	53.2	0.8	3.0	2.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	53.2	0.8	3.0	2.4

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt4-92. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	71.0	25.8	11.5	9.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	71.0	25.8	11.5	9.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	44.8	1.1	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	44.8	1.1	2.3	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	9.0	12.2	44.8	1.1	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.0	12.2	44.8	1.1	2.3	1.9

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-Alt4-93. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation

Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	25.3	0.4	1.4	1.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	25.3	0.4	1.4	1.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	25.3	0.4	1.4	1.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	25.3	0.4	1.4	1.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt4-94. Max Daily Emissions from OGV Main Engine - Alternative 4 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	86.0	18.0	15.1	12.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	86.0	18.0	15.1	12.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	54.2	0.8	3.1	2.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	54.2	0.8	3.1	2.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.0	13.9	54.2	0.8	3.1	2.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.0	13.9	54.2	0.8	3.1	2.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt4-95. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.82	0.38	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.14	1.90	0.26	0.21
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.19	0.55	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.1	2.8	0.4	0.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.19	2.39	0.15	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.17	0.48	6.04	0.38	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.16	0.07	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	9.6	0.6	0.2	0.2
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.04	0.10	1.28	0.08	0.03	0.02
Containerships 8,000 - 9,000 TEU	0.11	0.32	3.99	0.25	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.20	0.56	7.11	0.44	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.08	0.07	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.1	13.4	0.8	0.3	0.2

Mitigation measures include VSR and low sulfur fuel.

Table E1.2-Alt4-96. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.07	0.49	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.42	2.49	0.34	0.27
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.56	0.71	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	8.1	3.7	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.09	0.25	3.13	0.20	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.23	0.63	7.91	0.49	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.04	0.12	1.51	0.09	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	1.0	12.6	0.8	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.05	0.13	1.67	0.10	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.15	0.41	5.22	0.33	0.10	0.08
Containerships 5,000 - 6,000 TEU	0.27	0.74	9.31	0.58	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.41	0.09	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	1.4	17.6	1.1	0.4	0.3

Mitigation measures include VSR and low sulfur fuel.

Table E1.2-Alt4-97. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.54	0.19	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.72	0.98	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.78	0.28	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.0	1.5	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.59	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.12	0.32	4.00	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.77	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.4	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.85	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.64	0.17	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.14	0.37	4.72	0.29	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.72	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	8.9	0.6	0.2	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt4-98. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Harbor Transit - Inbound

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.55	0.20	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.72	0.98	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.74	0.27	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.0	1.4	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.61	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.11	0.32	3.99	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.73	0.05	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.3	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.86	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.69	0.17	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.14	0.37	4.70	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.68	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	8.9	0.6	0.2	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt4-99. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Harbor Transit - Outbound

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.04	0.48	0.17	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.38	0.85	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.65	0.23	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.5	1.3	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.41	0.09	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.10	0.28	3.49	0.22	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.63	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.5	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.06	0.75	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.07	0.19	2.35	0.15	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.12	0.33	4.11	0.26	0.08	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.59	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.8	0.5	0.2	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt4-100. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.26	0.09	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.27	0.46	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.12	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.9	0.7	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.75	0.05	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.05	0.15	1.86	0.12	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.34	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	0.2	0.1	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.40	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.25	0.08	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.17	2.19	0.14	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.32	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.2	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt4-101. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.04	0.55	0.20	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.72	0.98	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.74	0.27	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.0	1.4	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.13	1.61	0.10	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.11	0.32	3.99	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.73	0.05	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.3	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.86	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.69	0.17	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.14	0.37	4.70	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.68	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	8.9	0.6	0.2	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt4-102. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation
Hoteling**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.94	2.59	34.10	21.99	2.72	2.17
Containerships 3,000 - 5,000 TEU	0.12	0.33	4.31	2.78	0.34	0.27
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	2.9	38.4	24.8	3.1	2.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.14	1.85	0.66	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.19	0.51	6.62	2.38	0.33	0.27
Containerships 3,000 - 5,000 TEU	0.05	0.14	1.78	0.64	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.8	10.3	3.7	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Mitigation measures include AMP and low sulfur fuel (for non-AMP ships).

Table E1.2-Alt4-103. Annual Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.35	0.49	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.21	0.56	7.27	2.61	0.37	0.29
Containerships 3,000 - 5,000 TEU	0.07	0.20	2.61	0.94	0.13	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.2	4.0	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.11	0.31	3.97	0.25	0.08	0.06
Containerships 5,000 - 6,000 TEU	0.31	0.85	10.69	0.67	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.07	0.20	2.56	0.16	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	1.4	17.2	1.1	0.3	0.3
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.06	0.17	2.12	0.13	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.19	0.52	6.62	0.41	0.13	0.11
Containerships 5,000 - 6,000 TEU	0.36	1.00	12.59	0.79	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.07	0.19	2.39	0.15	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.9	23.7	1.5	0.5	0.4

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt4-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	3.7	10.2	136.4	189.6	19.2	15.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.7	10.2	136.4	189.6	19.2	15.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	3.7	10.2	129.0	8.1	2.6	2.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.7	10.2	129.0	8.1	2.6	2.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	3.7	10.2	129.0	8.1	2.6	2.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.7	10.2	129.0	8.1	2.6	2.1

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

Table E1.2-Alt4-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.9	13.4	178.7	248.3	25.2	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.9	13.4	178.7	248.3	25.2	20.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.9	13.4	169.0	10.6	3.4	2.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.9	13.4	169.0	10.6	3.4	2.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.9	13.4	169.0	10.6	3.4	2.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.9	13.4	169.0	10.6	3.4	2.7

Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.

(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.

(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt4-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	90.5	125.8	12.8	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	90.5	125.8	12.8	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	85.6	5.3	1.7	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	85.6	5.3	1.7	1.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.8	85.6	5.3	1.7	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	85.6	5.3	1.7	1.4

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt4-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Harbor Transit - Inbound

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	85.3	5.3	1.7	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	85.3	5.3	1.7	1.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	85.3	5.3	1.7	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	85.3	5.3	1.7	1.4

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt4-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	78.9	109.7	11.1	8.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.9	109.7	11.1	8.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	74.6	4.7	1.5	1.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	74.6	4.7	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.1	5.9	74.6	4.7	1.5	1.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	74.6	4.7	1.5	1.2

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt4-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	39.8	2.5	0.8	0.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	39.8	2.5	0.8	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	39.8	2.5	0.8	0.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	39.8	2.5	0.8	0.6

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt4-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	85.3	5.3	1.7	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	85.3	5.3	1.7	1.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	85.3	5.3	1.7	1.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	85.3	5.3	1.7	1.4

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt4-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation
Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	60.7	166.9	2,229.8	3,099.0	314.3	251.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	60.7	166.9	2,229.8	3,099.0	314.3	251.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel. and they do not use AMP.

(2) For 2015 and 2030, all ships are assumed to use AMP.

Table E1.2-Alt4-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 4 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-Alt4-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt4-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt4-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.09	0.56	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.08	0.01	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.13	0.45	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.23	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.8	0.1	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.19	0.12	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.3	0.2	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.03	0.02	0.01	0.00
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.10	0.07	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.22	0.14	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt4-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.12	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.05	0.03	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt4-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.03	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.11	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.05	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.04	0.03	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.05	0.03	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-Alt4-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt4-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.12	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.05	0.03	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt4-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Hoteling**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	0.33	3.34	20.63	1.08	0.86
Containerships 3,000 - 5,000 TEU	0.03	0.06	0.59	3.63	0.19	0.15
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.07	0.64	2.25	0.15	0.12
Containerships 5,000 - 6,000 TEU	0.13	0.26	2.55	8.97	0.62	0.49
Containerships 3,000 - 5,000 TEU	0.05	0.10	0.96	3.36	0.23	0.18
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.2	14.6	1.0	0.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.10	0.19	1.81	1.17	0.28	0.22
Containerships 5,000 - 6,000 TEU	0.19	0.38	3.62	2.33	0.55	0.44
Containerships 3,000 - 5,000 TEU	0.05	0.10	0.90	0.58	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	6.3	4.1	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.09	0.84	0.54	0.13	0.10
Containerships 8,000 - 9,000 TEU	0.12	0.24	2.25	1.46	0.34	0.27
Containerships 5,000 - 6,000 TEU	0.17	0.34	3.22	2.08	0.49	0.39
Containerships 3,000 - 5,000 TEU	0.03	0.07	0.64	0.42	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.7	7.0	4.5	1.1	0.8

Boilers are assumed to operate during hoteling regardless of whether the ship uses AMP.

Mitigation measures include low sulfur fuel.

Table E1.2-Alt4-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.20	1.21	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.05	0.29	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.05	0.16	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.28	0.98	0.07	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.14	0.49	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	1.6	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.13	0.09	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.02	0.04	0.40	0.26	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.13	0.09	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.7	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.07	0.05	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.22	0.15	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.03	0.05	0.48	0.31	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.13	0.08	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

Table E1.2-Alt4-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt4-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt4-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.0	2.6	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.0	2.6	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.2	0.4	4.0	2.6	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.0	2.6	0.6	0.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt4-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt4-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.9	0.6	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.9	0.6	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt4-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt4-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt4-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Hoteling

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.2	8.4	88.7	1,159.2	46.7	37.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	88.7	1,159.2	46.7	37.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.2	8.4	79.8	51.5	12.2	9.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	79.8	51.5	12.2	9.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	4.2	8.4	79.8	51.5	12.2	9.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	79.8	51.5	12.2	9.7

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt4-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 4 with Mitigation

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt4-131. Annual Emissions from Tugboat Main Engine - Alternative 4 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.5	3.3	0.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.10	0.61	0.00	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.09	0.61	3.69	0.00	0.11	0.11
Containerships 3,000 - 5,000 TEU	0.04	0.31	1.84	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	1.0	6.1	0.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.31	1.63	0.00	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.13	0.92	4.90	0.00	0.17	0.16
Containerships 3,000 - 5,000 TEU	0.04	0.31	1.63	0.00	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.5	8.2	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.16	0.65	0.00	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.07	0.51	2.03	0.00	0.09	0.08
Containerships 5,000 - 6,000 TEU	0.15	1.08	4.30	0.00	0.19	0.18
Containerships 3,000 - 5,000 TEU	0.04	0.28	1.14	0.00	0.05	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	2.0	8.1	0.0	0.4	0.3

Table E1.2-Alt4-132. Max Daily Emissions from Tugboat Main Engine - Alternative 4

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	118.20	0.07	3.67	3.37
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	118.2	0.1	3.7	3.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	104.77	0.07	3.67	3.37
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	104.8	0.1	3.7	3.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.80	19.56	77.99	0.07	3.49	3.21
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	78.0	0.1	3.5	3.2

Table E1.2-Alt4-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 4 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.0	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.23	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.12	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.4	0.0	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.02	0.11	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.01	0.06	0.34	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.11	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.04	0.15	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.08	0.31	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.08	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	0.0	0.0	0.0

Table E1.2-Alt4-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 4

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	7.51	0.01	0.27	0.26
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.5	0.0	0.3	0.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	7.32	0.01	0.27	0.26
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.3	0.0	0.3	0.3
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	1.37	5.59	0.01	0.23	0.22
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	5.6	0.0	0.2	0.2

Table E1.2-Alt4-135. Annual Emissions from AMP Electricity Consumption - Alternative 4 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.8	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.2	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.36	2.08	0.22	0.07	0.07
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	0.1	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.4	2.2	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.6	0.1	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.03	0.59	3.39	0.35	0.12	0.12
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.3	2.0	0.2	0.1	0.1
Containerships 5,000 - 6,000 TEU	0.0	0.6	3.6	0.4	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.6	0.1	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.05	1.08	6.23	0.65	0.22	0.22
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.2	0.9	0.1	0.0	0.0
Containerships 8,000 - 9,000 TEU	0.0	0.4	2.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	0.0	0.6	3.2	0.3	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.06	1.23	7.06	0.74	0.25	0.25

Note: These emissions represent regional power plant emissions associated with AMP generation.

Table E1.2-Alt4-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 4 with Mitigation

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.7	13.8	79.1	8.3	2.8	2.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	13.8	79.1	8.3	2.8	2.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.7	13.8	79.1	8.3	2.8	2.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	13.8	79.1	8.3	2.8	2.7

Notes: (1) These emissions represent regional power plant emissions associated with AMP generation.

(2) Peak day conditions do not use AMP during 2005 and 2010.

Table E1.2-Alt4-137. Summary of Annual Marine Vessel Emissions with Mitigation

Alternative 4 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						<i>PM</i>
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	1.3	3.3	42.3	49.0	4.3	3.5
AMP - Hoteling	0.0	0.4	2.1	0.2	0.1	0.1
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	7.1	16.2	180.2	125.9	16.3	13.0
Project Year 2010						
Ships - AQMD to 20 mile	2.0	4.5	34.7	12.4	2.3	1.8
Ships - 20 mile to PA	2.6	5.9	45.4	16.3	3.0	2.4
Ships - PA	1.4	3.0	20.5	7.1	1.4	1.1
Ships - Harbor Transit	1.3	1.9	13.8	3.8	1.0	0.8
Ships - Turning & Docking	1.1	1.5	11.0	2.8	0.8	0.6
Ships - Anchoring	0.3	0.9	11.7	5.7	0.7	0.5
Ships - Hoteling	0.5	1.2	14.4	18.3	1.5	1.2
AMP - Hoteling	0.0	0.6	3.4	0.4	0.1	0.1
Tugboats	0.2	1.1	6.5	0.0	0.2	0.2
Total	9.5	20.5	161.4	66.8	11.0	8.9
Project Year 2015						
Ships - AQMD to 20 mile	3.2	7.2	44.7	2.6	1.6	1.3
Ships - 20 mile to PA	4.3	9.4	58.6	3.4	2.1	1.6
Ships - PA	2.3	4.8	26.7	1.6	1.0	0.8
Ships - Harbor Transit	2.0	3.0	19.8	1.0	0.7	0.5
Ships - Turning & Docking	1.8	2.4	15.7	0.7	0.6	0.4
Ships - Anchoring	0.5	1.4	17.9	1.5	0.4	0.4
Ships - Hoteling	0.3	0.7	6.3	4.1	1.0	0.8
AMP - Hoteling	0.1	1.1	6.2	0.6	0.2	0.2
Tugboats	0.2	1.6	8.7	0.0	0.3	0.3
Total	14.8	31.5	204.7	15.6	7.8	6.3
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	4.6	10.2	63.2	3.6	2.2	1.8
Ships - 20 mile to PA	6.1	13.4	82.9	4.8	2.9	2.3
Ships - PA	3.3	6.8	37.7	2.2	1.4	1.1
Ships - Harbor Transit	2.9	4.3	28.0	1.4	1.0	0.8
Ships - Turning & Docking	2.5	3.4	22.3	1.0	0.8	0.6
Ships - Anchoring	0.7	2.0	24.6	2.1	0.6	0.5
Ships - Hoteling	0.4	0.7	7.0	4.5	1.1	0.8
AMP - Hoteling	0.1	1.2	7.1	0.7	0.2	0.2
Tugboats	0.3	2.2	8.7	0.0	0.4	0.4
Total	21.0	44.2	281.4	20.4	10.6	8.6

AMP Hoteling emissions include the emissions generated by regional power plants to generate the electricity consumed by the ships while hoteling.

**Table E1.2-Alt4-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation
Alternative 4 with Mitigation**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	41	91	821	758	103	82
Ships - 20 mile to PA	54	119	1,076	992	135	108
Ships - PA	30	60	486	474	66	53
Ships - Harbor Transit	26	39	327	309	51	41
Ships - Turning & Docking	23	30	260	233	42	33
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	65	175	2,318	4,258	361	289
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	126	0	4	4
Total	242	536	5,415	7,024	761	610
Project Year 2015						
Ships - AQMD to 20 mile	41	91	561	32	20	16
Ships - 20 mile to PA	54	119	734	42	26	21
Ships - PA	30	60	336	20	13	10
Ships - Harbor Transit	26	39	260	13	9	7
Ships - Turning & Docking	23	30	206	10	7	6
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	4	8	80	52	12	10
AMP - Hoteling	1	14	79	8	3	3
Tugboats	3	21	112	0	4	4
Total	182	383	2,368	177	93	75
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	41	91	561	32	20	16
Ships - 20 mile to PA	54	119	734	42	26	21
Ships - PA	30	60	336	20	13	10
Ships - Harbor Transit	26	39	260	13	9	7
Ships - Turning & Docking	23	30	206	10	7	6
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	4	8	80	52	12	10
AMP - Hoteling	1	14	79	8	3	3
Tugboats	3	21	84	0	4	3
Total	182	383	2,339	177	93	75

**Table E1.2-Alt4-143. Truck Trips and Mileage for the Berth 97-109 Terminal
Alternative 4**

<i>Study Year</i>	<i>Annual Trips</i>	<i>Annual VMT Off-Terminal</i>	<i>Peak Day Factor</i>
2005	417,702	11,271,936	0.00366
2010	747,164	22,866,377	0.00366
2015	1,076,627	34,460,818	0.00366
2030	1,334,084	45,186,141	0.00335
2045	1,334,084	45,186,141	0.00335

Source: Iteris 2007.

Year 2010 values are interpolated.

Table E1.2-Alt4-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Alternative 4

<i>Activity/Project Scenario</i>	<i>Idling Time/ Trip (Hrs) (2)</i>	<i>Miles/ Trip (1)</i>	<i>Idling Hrs/ Year</i>	<i>Miles/ Year</i>
<i>On-Terminal</i>				
Year 2005	0.17	0.75	69,617	313,276
Year 2010	0.17	0.75	124,527	560,373
Year 2015	0.17	0.75	179,438	807,470
Year 2030	0.17	0.75	222,347	1,000,563
Year 2045	0.17	0.75	222,347	1,000,563
<i>Off-Terminal</i>				
Year 2005	0.25	--	104,425	11,271,936
Year 2010	0.25	--	186,791	22,866,377
Year 2015	0.25	--	269,157	34,460,818
Year 2030	0.25	--	333,521	45,186,141
Year 2045	0.25	--	333,521	45,186,141

Notes: (1) On-terminal mileage/trip based upon terminal-specific data provided by Starcrest (2007). Round trip distance of 1.5 miles is divided by 2 to produce the mileage per one-way trip.

(2) Terminal-specific on-terminal idling time of 20 minutes per round trip is provided by Starcrest (2007). Idling time is divided by 2 to produce the average idling time per one-way trip.

The off-terminal idling time assumes 30 minutes of idling time per round trip (0.25 hr per one-way trip).

Table E1.2-Alt4-147. Annual Truck Emissions for the Berths 97-109 Terminal

Alternative 4

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	1.64	6.36	14.52	0.01	0.24	0.22
Year 2010 - Driving	4.27	12.08	16.65	0.02	6.14	1.84
Subtotal	5.91	18.43	31.16	0.03	6.37	2.06
<i>Project Year 2015</i>						
Year 2015 - Idling	1.91	8.63	22.67	0.01	0.19	0.18
Year 2015 - Driving	3.58	9.64	13.71	0.03	7.99	1.88
Subtotal	5.49	18.27	36.38	0.04	8.18	2.05
<i>Project Year 2030</i>						
Year 2030 - Idling	1.88	10.09	29.88	0.02	0.04	0.04
Year 2030 - Driving	1.57	4.30	6.32	0.03	9.16	1.64
Subtotal	3.45	14.39	36.20	0.05	9.20	1.68
<i>Project Year 2045</i>						
Year 2045 - Idling	1.86	10.06	29.97	0.02	0.03	0.03
Year 2045 - Driving	1.45	3.97	5.85	0.03	9.14	1.63
Subtotal	3.31	14.02	35.82	0.05	9.17	1.65
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	2.47	9.54	21.78	0.01	0.35	0.33
Year 2010 - Driving	46.56	219.53	425.63	0.48	29.40	19.32
Subtotal	49.02	229.06	447.41	0.49	29.76	19.65
<i>Project Year 2015</i>						
Year 2015 - Idling	2.86	12.95	34.00	0.02	0.29	0.27
Year 2015 - Driving	41.35	181.34	354.08	0.73	30.17	16.12
Subtotal	44.21	194.29	388.08	0.75	30.46	16.38
<i>Project Year 2030</i>						
Year 2030 - Idling	2.82	15.13	44.82	0.02	0.06	0.06
Year 2030 - Driving	21.01	86.84	164.28	0.97	25.41	8.06
Subtotal	23.84	101.97	209.10	0.99	25.47	8.12
<i>Project Year 2045</i>						
Year 2045 - Idling	2.79	15.08	44.95	0.02	0.04	0.04
Year 2045 - Driving	19.43	79.98	151.57	0.97	24.95	7.65
Subtotal	22.22	95.07	196.52	0.99	24.99	7.69

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt4-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	54.9	247.5	478.6	0.5	36.1	21.7
Year 2015	49.7	212.6	424.5	0.8	38.6	18.4
Year 2030	27.3	116.4	245.3	1.0	34.7	9.8
Year 2045	25.5	109.1	232.3	1.0	34.2	9.3

Table E1.2-Alt4-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	402	1,812	3,504	4	265	159
Year 2015	364	1,556	3,107	6	283	135
Year 2030	183	780	1,645	7	232	66
Year 2045	171	731	1,558	7	229	63

**Table E1.2-Alt4-150. Annual Truck Emissions for the Berths 97-109 Terminal
Alternative 4 with Mitigation**

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	1.26	5.88	15.90	0.01	0.10	0.09
Year 2010 - Driving	2.32	6.49	10.79	0.02	5.55	1.31
Subtotal	3.58	12.37	26.69	0.03	5.65	1.39
<i>Project Year 2015</i>						
Year 2015 - Idling	0.90	3.80	11.92	0.00	0.03	0.03
Year 2015 - Driving	0.61	1.69	3.51	0.01	7.37	1.31
Subtotal	1.51	5.48	15.42	0.01	7.40	1.34
<i>Project Year 2030</i>						
Year 2030 - Idling	1.21	3.71	14.20	0.00	0.08	0.08
Year 2030 - Driving	0.62	1.83	5.20	0.00	9.18	1.68
Subtotal	1.83	5.53	19.39	0.00	9.26	1.75
<i>Project Year 2045</i>						
Year 2045 - Idling	1.21	3.71	14.20	0.00	0.08	0.08
Year 2045 - Driving	0.62	1.83	5.20	0.00	9.18	1.68
Subtotal	1.83	5.53	19.39	0.00	9.26	1.75
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	1.89	8.82	23.85	0.01	0.14	0.13
Year 2010 - Driving	25.70	118.01	265.42	0.48	19.60	10.29
Subtotal	27.59	126.83	289.27	0.49	19.75	10.43
<i>Project Year 2015</i>						
Year 2015 - Idling	1.35	5.70	17.87	0.01	0.05	0.05
Year 2015 - Driving	14.41	47.99	115.52	0.22	18.84	5.84
Subtotal	15.76	53.68	133.40	0.22	18.89	5.89
<i>Project Year 2030</i>						
Year 2030 - Idling	1.82	5.56	21.29	0.00	0.12	0.12
Year 2030 - Driving	27.81	82.44	234.63	0.00	27.14	10.15
Subtotal	29.63	88.00	255.92	0.00	27.26	10.27
<i>Project Year 2045</i>						
Year 2045 - Idling	1.82	5.56	21.29	0.00	0.12	0.12
Year 2045 - Driving	27.81	82.44	234.63	0.00	27.14	10.15
Subtotal	29.63	88.00	255.92	0.00	27.26	10.27

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt4-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	31.2	139.2	316.0	0.5	25.4	11.8
Year 2015	17.3	59.2	148.8	0.2	26.3	7.2
Year 2030	31.5	93.5	275.3	-	36.5	12.0
Year 2045	31.5	93.5	275.3	-	36.5	12.0

Table E1.2-Alt4-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	228	1,019	2,313	4	186	87
Year 2015	126	433	1,090	2	193	53
Year 2030	211	627	1,846	-	245	81
Year 2045	211	627	1,846	-	245	81

Table E1.2-Alt4-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 4

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	1.2	13.0	1.7	0.0	1.5	0.3
Year 2010	1.3	15.3	2.0	0.0	2.8	0.5
Year 2015	1.2	14.7	1.9	0.0	4.0	0.8
Year 2030	0.8	8.8	0.9	0.0	4.7	0.9
Year 2045	0.7	7.3	0.7	0.0	4.7	0.9

Table E1.2-Alt4-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 4

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	7.7	87.1	11.5	0.1	10.1	2.0
Year 2010	8.4	102.2	13.5	0.1	18.4	3.6
Year 2015	8.0	98.3	12.9	0.1	26.7	5.2
Year 2030	5.3	58.7	6.3	0.1	31.8	6.2
Year 2045	4.5	49.0	5.0	0.1	31.8	6.2

Table E1.2-Alt4-155. Train Trips Associated with the Alternative 4

<i>Year</i>	<i>Round Trips</i>	
	<i>Annual</i>	<i>Peak Day</i>
Berths 121-131 ICTF		
2005	113	1
2010	220	1
2015	326	1
2030	361	2
2045	361	2
Off-Dock Railyards		
2005	111	1
2010	189	1
2015	267	1
2030	373	2
2045	373	2

Table E1.2-Alt4-162. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt4-163. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.27	0.19	0.01	0.01	0.01
Top Picks (1)	0.11	1.07	4.38	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.78	5.75	31.54	0.68	1.04	0.95
Line Haul Locomotive (near Port) - Road Haul	0.09	0.30	1.65	0.04	0.05	0.05
Line Haul Locomotive at Railyard	0.09	0.30	1.63	0.04	0.05	0.05
Yard Locomotive - Switching	0.05	0.16	0.65	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.60	0.07	0.00	0.00	0.00
Top Picks (1)	0.04	0.40	1.64	0.00	0.04	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.78	5.75	31.54	0.68	1.04	0.95
Line Haul Locomotive (near Port) - Road Haul	0.09	0.30	1.65	0.04	0.05	0.05
Line Haul Locomotive at Railyard	0.06	0.20	1.08	0.02	0.04	0.03
Yard Locomotive - Switching	0.05	0.16	0.65	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	3.68	0.16	0.01	0.01	0.01
Top Picks	0.15	0.93	3.82	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.22	3.96	21.75	0.47	0.71	0.66
Line Haul Locomotive at Railyard	0.08	0.26	1.40	0.03	0.05	0.04
Yard Locomotive - Switching	0.08	0.14	1.12	0.00	0.03	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.38	0.06	0.00	0.00	0.00
Top Picks	0.06	0.35	1.43	0.00	0.04	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.22	3.96	21.75	0.47	0.71	0.66
Line Haul Locomotive at Railyard	0.05	0.17	0.94	0.02	0.03	0.03
Yard Locomotive - Switching	0.08	0.14	1.12	0.00	0.03	0.03

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-164. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	6.75	0.29	0.02	0.02	0.02
Top Picks (1)	0.18	1.69	6.88	0.01	0.20	0.18
Line Haul Locomotive (SCAB) - Road Haul	2.44	8.53	43.72	0.03	1.32	1.22
Line Haul Locomotive (near Port) - Road Haul	0.13	0.45	2.29	0.00	0.07	0.06
Line Haul Locomotive at Railyard	0.13	0.44	2.26	0.00	0.07	0.06
Yard Locomotive - Switching (2)	0.07	0.24	0.96	0.00	0.03	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.53	0.11	0.01	0.01	0.01
Top Picks (1)	0.07	0.63	2.58	0.00	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	2.44	8.53	43.72	0.03	1.32	1.22
Line Haul Locomotive (near Port) - Road Haul	0.13	0.45	2.29	0.00	0.07	0.06
Line Haul Locomotive at Railyard	0.08	0.29	1.50	0.00	0.05	0.04
Yard Locomotive - Switching	0.07	0.24	0.96	0.00	0.03	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.04	5.54	0.24	0.01	0.02	0.02
Top Picks	0.15	1.39	5.64	0.00	0.16	0.15
Line Haul Locomotive (SCAB) - Road Haul	1.60	5.60	28.71	0.02	0.87	0.80
Line Haul Locomotive at Railyard	0.10	0.36	1.85	0.00	0.06	0.05
Yard Locomotive - Switching	0.10	0.20	1.38	0.00	0.04	0.04
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	2.08	0.09	0.00	0.01	0.01
Top Picks	0.06	0.52	2.12	0.00	0.06	0.06
Line Haul Locomotive (SCAB) - Road Haul	1.60	5.60	28.71	0.02	0.87	0.80
Line Haul Locomotive at Railyard	0.07	0.24	1.23	0.00	0.04	0.03
Yard Locomotive - Switching	0.10	0.20	1.38	0.00	0.04	0.04

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-165. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.48	0.33	0.02	0.02	0.02
Top Picks (1)	0.07	1.00	0.87	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.13	9.45	39.59	0.03	1.06	0.97
Line Haul Locomotive (near Port) - Road Haul	0.11	0.49	2.07	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.11	0.49	2.04	0.00	0.05	0.05
Yard Locomotive - Switching (2)	0.08	0.27	1.06	0.00	0.03	0.03
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.80	0.12	0.01	0.01	0.01
Top Picks (1)	0.03	0.37	0.32	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.13	9.45	39.59	0.03	1.06	0.97
Line Haul Locomotive (near Port) - Road Haul	0.11	0.49	2.07	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.07	0.32	1.36	0.00	0.04	0.03
Yard Locomotive - Switching	0.08	0.27	1.06	0.00	0.03	0.03
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.05	7.74	0.34	0.02	0.02	0.02
Top Picks	0.07	1.03	0.90	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.76	7.82	32.77	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.11	0.50	2.11	0.00	0.06	0.05
Yard Locomotive - Switching	0.12	0.28	1.55	0.00	0.05	0.05
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	2.90	0.13	0.01	0.01	0.01
Top Picks	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.76	7.82	32.77	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.08	0.34	1.41	0.00	0.04	0.03
Yard Locomotive - Switching	0.12	0.28	1.55	0.00	0.05	0.05

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-166. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.48	0.33	0.02	0.02	0.02
Top Picks (1)	0.07	1.00	0.87	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.91	9.45	36.73	0.03	0.90	0.83
Line Haul Locomotive (near Port) - Road Haul	0.10	0.49	1.92	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.10	0.49	1.90	0.00	0.05	0.04
Yard Locomotive - Switching (2)	0.08	0.27	1.06	0.00	0.03	0.03
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.80	0.12	0.01	0.01	0.01
Top Picks (1)	0.03	0.37	0.32	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.91	9.45	36.73	0.03	0.90	0.83
Line Haul Locomotive (near Port) - Road Haul	0.10	0.49	1.92	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.07	0.32	1.26	0.00	0.03	0.03
Yard Locomotive - Switching	0.08	0.27	1.06	0.00	0.03	0.03
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.05	7.74	0.34	0.02	0.02	0.02
Top Picks	0.07	1.03	0.90	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.58	7.82	30.41	0.03	0.74	0.68
Line Haul Locomotive at Railyard	0.10	0.50	1.96	0.00	0.05	0.04
Yard Locomotive - Switching	0.10	0.28	1.30	0.00	0.04	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	2.90	0.13	0.01	0.01	0.01
Top Picks	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.58	7.82	30.41	0.03	0.74	0.68
Line Haul Locomotive at Railyard	0.07	0.34	1.31	0.00	0.03	0.03
Yard Locomotive - Switching	0.10	0.28	1.30	0.00	0.04	0.03

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2005

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt4-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2010

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2015

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2030

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.3	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.3	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt4-172. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Table E1.2-Alt4-173. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.27	0.19	0.01	0.01	0.01
Top Picks (1)	0.11	1.07	4.38	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.78	5.75	31.54	0.68	1.04	0.95
Line Haul Locomotive (near Port) - Road Haul	0.09	0.30	1.65	0.04	0.05	0.05
Line Haul Locomotive at Railyard	0.09	0.30	1.63	0.04	0.05	0.05
Yard Locomotive - Switching	0.05	0.16	0.65	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.60	0.07	0.00	0.00	0.00
Top Picks (1)	0.04	0.40	1.64	0.00	0.04	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.78	5.75	31.54	0.68	1.04	0.95
Line Haul Locomotive (near Port) - Road Haul	0.09	0.30	1.65	0.04	0.05	0.05
Line Haul Locomotive at Railyard	0.06	0.20	1.08	0.02	0.04	0.03
Yard Locomotive - Switching	0.05	0.16	0.65	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	3.68	0.16	0.01	0.01	0.01
Top Picks	0.15	0.93	3.82	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.22	3.96	21.75	0.47	0.71	0.66
Line Haul Locomotive at Railyard	0.08	0.26	1.40	0.03	0.05	0.04
Yard Locomotive - Switching	0.08	0.14	1.12	0.00	0.03	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.38	0.06	0.00	0.00	0.00
Top Picks	0.06	0.35	1.43	0.00	0.04	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.22	3.96	21.75	0.47	0.71	0.66
Line Haul Locomotive at Railyard	0.05	0.17	0.94	0.02	0.03	0.03
Yard Locomotive - Switching	0.08	0.14	1.12	0.00	0.03	0.03

Table E1.2-Alt4-174. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.04	6.75	0.29	0.02	0.02	0.02
Top Picks (1)	0.06	0.82	0.72	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.44	8.53	43.72	0.03	1.32	1.22
Line Haul Locomotive (near Port) - Road Haul	0.13	0.45	2.29	0.00	0.07	0.06
Line Haul Locomotive at Railyard	0.13	0.44	2.26	0.00	0.07	0.06
Yard Locomotive - Switching (1)	0.07	0.24	0.96	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.53	0.11	0.01	0.01	0.01
Top Picks	0.02	0.31	0.27	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.44	8.53	43.72	0.03	1.32	1.22
Line Haul Locomotive (near Port) - Road Haul	0.13	0.45	2.29	0.00	0.07	0.06
Line Haul Locomotive at Railyard	0.08	0.29	1.50	0.00	0.05	0.04
Yard Locomotive - Switching (1)	0.07	0.24	0.96	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.04	5.54	0.24	0.01	0.02	0.02
Top Picks	0.15	1.39	5.64	0.00	0.16	0.15
Line Haul Locomotive (SCAB) - Road Haul	1.60	5.60	28.71	0.02	0.87	0.80
Line Haul Locomotive at Railyard	0.10	0.36	1.85	0.00	0.06	0.05
Yard Locomotive - Switching	0.10	0.20	1.38	0.00	0.04	0.04
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	2.08	0.09	0.00	0.01	0.01
Top Picks	0.06	0.52	2.12	0.00	0.06	0.06
Line Haul Locomotive (SCAB) - Road Haul	1.60	5.60	28.71	0.02	0.87	0.80
Line Haul Locomotive at Railyard	0.07	0.24	1.23	0.00	0.04	0.03
Yard Locomotive - Switching	0.10	0.20	1.38	0.00	0.04	0.04

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt4-175. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.48	0.33	0.02	0.02	0.02
Top Picks (1)	0.07	1.00	0.87	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	2.13	9.45	39.59	0.03	1.06	0.97
Line Haul Locomotive (near Port) - Road Haul	0.11	0.49	2.07	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.11	0.49	2.04	0.00	0.05	0.05
Yard Locomotive - Switching (1)	0.08	0.27	1.06	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.80	0.12	0.01	0.01	0.01
Top Picks	0.03	0.37	0.32	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	2.13	9.45	39.59	0.03	1.06	0.97
Line Haul Locomotive (near Port) - Road Haul	0.11	0.49	2.07	0.00	0.06	0.05
Line Haul Locomotive at Railyard	0.07	0.32	1.36	0.00	0.04	0.03
Yard Locomotive - Switching (1)	0.08	0.27	1.06	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.05	7.74	0.34	0.02	0.02	0.02
Top Picks	0.07	1.03	0.90	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.76	7.82	32.77	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.11	0.50	2.11	0.00	0.06	0.05
Yard Locomotive - Switching	0.12	0.28	1.55	0.00	0.05	0.05
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	2.90	0.13	0.01	0.01	0.01
Top Picks	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.76	7.82	32.77	0.03	0.87	0.80
Line Haul Locomotive at Railyard	0.08	0.34	1.41	0.00	0.04	0.03
Yard Locomotive - Switching	0.12	0.28	1.55	0.00	0.05	0.05

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt4-176. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.05	7.48	0.33	0.02	0.02	0.02
Top Picks (1)	0.07	1.00	0.87	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.91	9.45	36.73	0.03	0.90	0.83
Line Haul Locomotive (near Port) - Road Haul	0.10	0.49	1.92	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.10	0.49	1.90	0.00	0.05	0.04
Yard Locomotive - Switching (1)	0.08	0.27	1.06	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.02	2.80	0.12	0.01	0.01	0.01
Top Picks	0.03	0.37	0.32	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.91	9.45	36.73	0.03	0.90	0.83
Line Haul Locomotive (near Port) - Road Haul	0.10	0.49	1.92	0.00	0.05	0.04
Line Haul Locomotive at Railyard	0.07	0.32	1.26	0.00	0.03	0.03
Yard Locomotive - Switching (1)	0.08	0.27	1.06	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.05	7.74	0.34	0.02	0.02	0.02
Top Picks	0.07	1.03	0.90	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.58	7.82	30.41	0.03	0.74	0.68
Line Haul Locomotive at Railyard	0.10	0.50	1.96	0.00	0.05	0.04
Yard Locomotive - Switching	0.10	0.28	1.30	0.00	0.04	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.02	2.90	0.13	0.01	0.01	0.01
Top Picks	0.03	0.39	0.34	0.00	0.01	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.58	7.82	30.41	0.03	0.74	0.68
Line Haul Locomotive at Railyard	0.07	0.34	1.31	0.00	0.03	0.03
Yard Locomotive - Switching	0.10	0.28	1.30	0.00	0.04	0.03

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt4-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2005

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

**Table E1.2-Alt4-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 4 with Mitigation - Year 2010**

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

**Table E1.2-Alt4-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 4 with Mitigation - Year 2015**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.3	5.0	4.4	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	1.9	1.7	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Table E1.2-Alt4-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	31.4	139.7	585.5	0.5	15.6	14.4
Line Haul Locomotive (near Port) - Road Haul	1.6	7.3	30.6	0.0	0.8	0.8
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.6	7.2	30.2	0.0	0.8	0.7
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	25.2	111.7	468.4	0.4	12.5	11.5
Line Haul Locomotive at Railyard	1.1	4.8	20.1	0.0	0.5	0.5
Yard Locomotive - Switching	1.3	3.0	16.6	0.0	0.5	0.5

Table E1.2-Alt4-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 4 with Mitigation - Year 2045

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks (1)	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching (2)	0.8	3.0	11.8	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks (1)	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	28.2	139.7	543.2	0.5	13.3	12.2
Line Haul Locomotive (near Port) - Road Haul	1.5	7.3	28.4	0.0	0.7	0.6
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	0.8	3.0	11.8	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.5	82.9	3.6	0.2	0.2	0.2
Top Picks	0.8	11.1	9.6	0.1	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.5	7.2	28.0	0.0	0.7	0.6
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.2	31.1	1.4	0.1	0.1	0.1
Top Picks	0.3	4.2	3.6	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	22.6	111.7	434.6	0.4	10.6	9.8
Line Haul Locomotive at Railyard	1.0	4.8	18.7	0.0	0.5	0.4
Yard Locomotive - Switching	1.0	3.0	13.9	0.0	0.4	0.4

**Table E1.2-Alt4-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 4**

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.4	13.7	11.8	0.0	0.4	0.3
Trains	6.5	21.0	115.2	2.4	3.8	3.5
Total	7.0	34.6	126.9	2.5	4.1	3.8
<i>Project Year 2015</i>						
Railyard Equipment	0.6	21.1	18.0	0.1	0.6	0.5
Trains	8.8	30.5	156.4	0.1	4.7	4.3
Total	9.4	51.6	174.3	0.2	5.3	4.9
<i>Project Year 2030</i>						
Railyard Equipment	0.3	23.7	3.3	0.1	0.1	0.1
Trains	8.5	37.3	156.9	0.1	4.2	3.9
Total	8.9	61.0	160.2	0.2	4.3	4.0
<i>Project Year 2045</i>						
Railyard Equipment	0.3	23.7	3.3	0.1	0.1	0.1
Trains	7.7	37.3	145.4	0.1	3.6	3.3
Total	8.0	61.0	148.8	0.2	3.7	3.4

**Table E1.2-Alt4-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 4**

<i>Project Scenario/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	3.8	142.6	121.1	0.4	3.7	3.4
Trains	77.6	269.4	1,382.6	1.0	41.8	38.4
Total	81.4	411.9	1,503.7	1.3	45.5	41.9
<i>Project Year 2030</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	122.9	538.7	2,265.2	1.9	60.6	55.8
Total	126.5	797.1	2,301.5	2.6	61.7	56.8
<i>Project Year 2045</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	110.2	538.7	2,100.4	1.9	51.5	47.4
Total	113.8	797.1	2,136.7	2.6	52.6	48.4

**Table E1.2-Alt4-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 4 with Mitigation**

<i>Project Scenario/Source Activity</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.4	13.7	11.8	0.0	0.4	0.3
Trains	6.5	21.0	115.2	2.4	3.8	3.5
Total	7.0	34.6	126.9	2.5	4.1	3.8
<i>Project Year 2015</i>						
Railyard Equipment	0.4	19.9	9.5	0.1	0.3	0.3
Trains	8.8	30.5	156.4	0.1	4.7	4.3
Total	9.2	50.4	165.9	0.2	5.0	4.6
<i>Project Year 2030</i>						
Railyard Equipment	0.3	23.7	3.3	0.1	0.1	0.1
Trains	8.5	37.3	156.9	0.1	4.2	3.8
Total	8.9	61.0	160.2	0.2	4.3	3.9
<i>Project Year 2045</i>						
Railyard Equipment	0.3	23.7	3.3	0.1	0.1	0.1
Trains	7.7	37.3	145.4	0.1	3.5	3.2
Total	8.0	61.0	148.8	0.2	3.6	3.3

**Table E1.2-Alt4-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions
Alternative 4 with Mitigation**

Project Scenario/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	2.7	135.2	69.1	0.4	2.1	1.9
Trains	77.6	269.4	1,382.6	1.0	41.5	38.2
Total	80.3	404.5	1,451.7	1.3	43.6	40.1
<i>Project Year 2030</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	122.9	538.7	2,265.2	1.9	60.1	55.3
Total	126.5	797.1	2,301.5	2.6	61.2	56.3
<i>Project Year 2045</i>						
Railyard Equipment	3.7	258.4	36.3	0.7	1.1	1.0
Trains	110.2	538.7	2,100.4	1.9	51.0	46.9
Total	113.8	797.1	2,136.7	2.6	52.0	47.9

Table E1.2-Alt4-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 4

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>								
Forklift >120-175	223,897	FL175_U	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_U	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_U	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_U	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_U	0.41	1.45	4.03	0.03	0.19	0.18
Top pick >175-250	6,967,232	TH250_U	4.49	13.52	55.93	0.46	1.97	1.81
Yard tractor >120-175	23,953,325	YTD175_U	21.34	78.20	189.80	1.58	10.19	9.37
Other Equipment	165,929	OTHER_U	0.15	0.66	1.33	0.01	0.09	0.08
Total			28.1	100.8	274.0	2.3	13.3	12.2
<i>Project Year 2010</i>								
Forklift >120-175	336,068	FL175_U	0.15	1.38	3.34	0.00	0.12	0.11
Forklift >175-250	62,475	FL250_U	0.03	0.24	0.63	0.00	0.03	0.02
Forklift >25-50	111,318	FL50_U	0.16	0.86	0.83	0.00	0.08	0.07
RTG >175-250	4,665,436	RTG250_U	2.01	8.59	26.31	0.04	0.95	0.87
Side pick >120-175	638,595	SP175_U	0.31	2.26	6.27	0.00	0.24	0.22
Top pick >175-250	10,457,760	TH250_U	3.61	21.85	89.49	0.08	2.70	2.49
Yard tractor >120-175	35,953,750	YTD175_U	0.68	109.86	4.82	0.27	0.30	0.27
Other Equipment	249,058	OTHER_U	0.16	1.03	2.07	0.00	0.13	0.12
Total			7.1	146.1	133.8	0.4	4.5	4.2
<i>Project Year 2015</i>								
Forklift >120-175	591,950	FL175_U	0.18	2.55	5.99	0.00	0.22	0.21
Forklift >175-250	110,044	FL250_U	0.04	0.44	1.15	0.00	0.04	0.04
Forklift >25-50	196,075	FL50_U	0.20	1.60	1.51	0.00	0.13	0.12
RTG >175-250	8,217,704	RTG250_U	3.82	15.87	39.74	0.06	1.60	1.47
Side pick >120-175	1,124,822	SP175_U	0.38	4.19	11.51	0.01	0.44	0.40
Top pick >175-250	18,420,311	TH250_U	4.35	40.52	164.79	0.14	4.79	4.40
Yard tractor >120-175	63,328,979	YTD175_U	1.34	206.07	8.97	0.48	0.61	0.56
Other Equipment	438,691	OTHER_U	0.14	1.89	3.79	0.00	0.21	0.19
Total			10.4	273.1	237.4	0.7	8.0	7.4
<i>Project Year 2030</i>								
Forklift >120-175	772,978	FL175_U	0.07	2.60	1.21	0.01	0.01	0.01
Forklift >175-250	143,697	FL250_U	0.01	0.17	0.15	0.00	0.00	0.00
Forklift >25-50	256,038	FL50_U	0.04	1.08	0.87	0.00	0.00	0.00
RTG >175-250	10,730,811	RTG250_U	0.88	12.36	10.74	0.08	0.16	0.15
Side pick >120-175	1,468,811	SP175_U	0.15	5.07	2.34	0.01	0.02	0.02
Top pick >175-250	24,053,539	TH250_U	2.03	28.20	24.45	0.18	0.38	0.35
Yard tractor >120-175	82,696,002	YTD175_U	1.75	269.09	11.71	0.63	0.80	0.74
Other Equipment	572,850	OTHER_U	0.06	2.06	1.32	0.00	0.01	0.01
Total			5.0	320.6	52.8	0.9	1.4	1.3
<i>Project Year 2045</i>								
Forklift >120-175	772,978	FL175_U	0.07	2.60	1.21	0.01	0.01	0.01
Forklift >175-250	143,697	FL250_U	0.01	0.17	0.15	0.00	0.00	0.00
Forklift >25-50	256,038	FL50_U	0.04	1.08	0.87	0.00	0.00	0.00
RTG >175-250	10,730,811	RTG250_U	0.88	12.36	10.74	0.08	0.16	0.15
Side pick >120-175	1,468,811	SP175_U	0.15	5.07	2.34	0.01	0.02	0.02
Top pick >175-250	24,053,539	TH250_U	2.03	28.20	24.45	0.18	0.38	0.35
Yard tractor >120-175	82,696,002	YTD175_U	1.75	269.09	11.71	0.63	0.80	0.74
Other Equipment	572,850	OTHER_U	0.06	2.06	1.32	0.00	0.01	0.01
Total			5.0	320.6	52.8	0.9	1.4	1.3

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-Alt4-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 4

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2005	0.47%	0.88%	0.67%
2010	0.41%	1.68%	1.04%
2015	0.35%	1.03%	0.69%
2030	0.37%	0.90%	0.64%
2045	0.37%	0.90%	0.64%

Note: The percent of annual CHE usage on the peak day represents the average of the landside and dockside percentages. This assumes that landside and dockside CHE usages contribute equally to total CHE usage, and conservatively assumes that the peak days for landside and dockside usages occur simultaneously.

Table E1.2-A14-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 4

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	5.6	19.5	54.4	0.4	2.6	2.4
Top pick >175-250	60.5	182.2	753.8	6.2	26.6	24.4
Yard tractor >120-175	287.7	1,053.8	2,557.9	21.3	137.3	126.3
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
Total	378.6	1,359.0	3,693.2	31.0	178.8	164.5
<i>Project Year 2010</i>						
Forklift >120-175	3.2	28.7	69.8	0.1	2.6	2.4
Forklift >175-250	0.7	4.9	13.2	0.0	0.5	0.5
Forklift >25-50	3.4	17.9	17.3	0.0	1.6	1.5
RTG >175-250	41.9	179.6	549.8	0.7	19.8	18.2
Side pick >120-175	6.6	47.3	131.0	0.1	5.1	4.7
Top pick >175-250	75.4	456.7	1,870.1	1.7	56.5	52.0
Yard tractor >120-175	14.3	2,295.7	100.7	5.7	6.2	5.7
Other Equipment	3.3	21.4	43.2	0.0	2.7	2.5
Total	148.8	3,052.3	2,795.0	8.3	94.9	87.3
<i>Project Year 2015</i>						
Forklift >120-175	2.5	35.2	82.7	0.1	3.1	2.9
Forklift >175-250	0.6	6.1	15.8	0.0	0.6	0.6
Forklift >25-50	2.7	22.1	20.8	0.0	1.8	1.7
RTG >175-250	52.7	219.1	548.4	0.9	22.1	20.3
Side pick >120-175	5.2	57.8	158.9	0.1	6.0	5.5
Top pick >175-250	60.0	559.3	2,274.4	1.9	66.1	60.8
Yard tractor >120-175	18.5	2,844.3	123.8	6.6	8.5	7.8
Other Equipment	1.9	26.1	52.3	0.0	2.9	2.6
Total	144.2	3,770.0	3,277.2	9.7	111.0	102.1
<i>Project Year 2030</i>						
Forklift >120-175	0.9	33.2	15.4	0.1	0.1	0.1
Forklift >175-250	0.2	2.2	1.9	0.0	0.0	0.0
Forklift >25-50	0.5	13.8	11.1	0.0	0.0	0.0
RTG >175-250	11.2	158.0	137.3	1.0	2.1	1.9
Side pick >120-175	1.9	64.9	30.0	0.1	0.3	0.3
Top pick >175-250	25.9	360.7	312.6	2.3	4.8	4.4
Yard tractor >120-175	22.4	3,441.4	149.8	8.0	10.3	9.4
Other Equipment	0.8	26.4	16.8	0.1	0.1	0.1
Total	63.8	4,100.6	675.0	11.7	17.7	16.3
<i>Project Year 2045</i>						
Forklift >120-175	0.9	33.2	15.4	0.1	0.1	0.1
Forklift >175-250	0.2	2.2	1.9	0.0	0.0	0.0
Forklift >25-50	0.5	13.8	11.1	0.0	0.0	0.0
RTG >175-250	11.2	158.0	137.3	1.0	2.1	1.9
Side pick >120-175	1.9	64.9	30.0	0.1	0.3	0.3
Top pick >175-250	25.9	360.7	312.6	2.3	4.8	4.4
Yard tractor >120-175	22.4	3,441.4	149.8	8.0	10.3	9.4
Other Equipment	0.8	26.4	16.8	0.1	0.1	0.1
Total	63.8	4,100.6	675.0	11.7	17.7	16.3

Table E1.2-A114-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 4

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>								
Forklift >120-175	223,897	FL175_M	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_M	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_M	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_M	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_M	0.15	0.48	3.23	0.03	0.10	0.09
Top pick >175-250	6,967,232	TH250_M	1.66	4.46	44.75	0.46	0.99	0.91
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	165,929	OTHER_M	0.15	0.66	1.33	0.01	0.09	0.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	23,953,325	YTP175_M	29.72	480.39	123.81	-	1.58	1.58
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			33.4	493.0	196.1	0.7	3.6	3.4
<i>Project Year 2010</i>								
Forklift >120-175	336,068	FL175_M	0.15	1.36	3.30	0.00	0.13	0.12
Forklift >175-250	62,475	FL250_M	0.03	0.24	0.63	0.00	0.03	0.02
Forklift >25-50	111,318	FL50_M	0.16	0.86	0.83	0.00	0.08	0.07
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	638,595	SP175_M	0.20	2.26	6.27	0.00	0.22	0.20
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	249,058	OTHER_M	0.15	1.01	2.03	0.00	0.12	0.11
LPG Top pick >175-250	10,457,760	THP250_M	3.95	245.78	21.54	-	0.69	0.69
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	35,953,750	YTP175_M	65.04	1,062.68	211.39	-	2.38	2.38
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			69.7	1,314.2	246.0	0.0	3.6	3.6
<i>Project Year 2015</i>								
Forklift >120-175	591,950	FL175_M	0.05	1.81	0.85	0.00	0.01	0.01
Forklift >175-250	110,044	FL250_M	0.01	0.12	0.10	0.00	0.00	0.00
Forklift >25-50	196,075	FL50_M	0.01	0.21	0.18	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	1,124,822	SP175_M	0.09	3.45	1.57	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	438,691	OTHER_M	0.04	1.52	0.97	0.00	0.01	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	18,420,311	THN250_M	0.34	55.55	2.44	-	0.15	0.15
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	63,328,979	YTN175_M_REPL	1.18	190.99	8.39	-	0.51	0.51
Total			1.7	253.7	14.5	0.0	0.7	0.7
<i>Project Year 2030</i>								
Forklift >120-175	772,978	FL175_M	0.07	2.60	1.21	0.01	0.01	0.01
Forklift >175-250	143,697	FL250_M	0.01	0.17	0.15	0.00	0.00	0.00
Forklift >25-50	256,038	FL50_M	0.02	0.31	0.27	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	1,468,811	SP175_M	0.15	5.07	2.34	0.01	0.02	0.02
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	572,850	OTHER_M	0.06	2.06	1.32	0.00	0.01	0.01
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	24,053,539	THN250_M	0.48	75.41	3.30	-	0.21	0.21
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	82,696,002	YTN175_M_REPL	1.64	259.25	11.33	-	0.73	0.73
Total			2.4	344.9	19.9	0.0	1.0	1.0
<i>Project Year 2045</i>								
Forklift >120-175	772,978	FL175_M	0.07	2.60	1.21	0.01	0.01	0.01
Forklift >175-250	143,697	FL250_M	0.01	0.17	0.15	0.00	0.00	0.00
Forklift >25-50	256,038	FL50_M	0.02	0.31	0.27	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	1,468,811	SP175_M	0.15	5.07	2.34	0.01	0.02	0.02
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	572,850	OTHER_M	0.06	2.06	1.32	0.00	0.01	0.01
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	24,053,539	THN250_M	0.46	73.50	3.22	-	0.20	0.20
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	82,696,002	YTN175_M_REPL	1.57	252.68	11.08	-	0.68	0.68
Total			2.3	336.4	19.6	0.0	0.9	0.9

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-A14-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 4

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	2.1	6.4	43.5	0.4	1.3	1.2
Top pick >175-250	22.4	60.1	603.1	6.2	13.3	12.2
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	400.5	6,474.1	1,668.5	-	21.4	21.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	449.8	6,644.1	2,642.1	9.8	48.3	46.1
Project Year 2010						
Forklift >120-175	3.2	28.5	68.9	0.1	2.7	2.5
Forklift >175-250	0.7	4.9	13.2	0.0	0.5	0.5
Forklift >25-50	3.4	17.9	17.3	0.0	1.6	1.5
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	4.1	47.3	131.0	0.1	4.6	4.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	3.2	21.0	42.5	0.0	2.6	2.4
LPG Top pick >175-250	82.5	5,136.2	450.2	-	14.5	14.5
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	1,359.1	22,207.0	4,417.6	-	49.7	49.7
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	1,456.2	27,462.8	5,140.6	0.2	76.1	75.2
Project Year 2015						
Forklift >120-175	0.7	25.0	11.7	0.1	0.1	0.1
Forklift >175-250	0.1	1.6	1.4	0.0	0.0	0.0
Forklift >25-50	0.2	2.9	2.5	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	1.3	47.6	21.7	0.1	0.2	0.2
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.6	21.0	13.5	0.0	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	4.7	766.8	33.7	-	2.0	2.0
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	16.3	2,636.1	115.8	-	7.0	7.0
Total	23.8	3,501.0	200.4	0.3	9.4	9.4
Project Year 2030						
Forklift >120-175	0.9	33.2	15.4	0.1	0.1	0.1
Forklift >175-250	0.2	2.2	1.9	0.0	0.0	0.0
Forklift >25-50	0.3	3.9	3.4	0.0	0.1	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	1.9	64.9	30.0	0.1	0.3	0.3
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.8	26.4	16.8	0.1	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	6.1	964.4	42.2	-	2.7	2.7
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	21.0	3,315.5	145.0	-	9.4	9.4
Total	31.1	4,410.5	254.7	0.3	12.7	12.7
Project Year 2045						
Forklift >120-175	0.9	33.2	15.4	0.1	0.1	0.1
Forklift >175-250	0.2	2.2	1.9	0.0	0.0	0.0
Forklift >25-50	0.3	3.9	3.4	0.0	0.1	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	1.9	64.9	30.0	0.1	0.3	0.3
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.8	26.4	16.8	0.1	0.1	0.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	5.9	940.0	41.2	-	2.5	2.5
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	20.1	3,231.5	141.7	-	8.8	8.8
Total	30.0	4,302.1	250.5	0.3	11.9	11.9

Table E1.2-Alt4-191. Emissions from RTG Electricity Consumption - Mitigated Alternative 4

Project Scenario/Activity	Pollutant					
	VOC	CO	NOx	SOx	PM10	PM2.5
Annual Emissions (tons per year)						
Year 2005	-	-	-	-	-	-
Year 2010	0.02	0.35	2.00	0.21	0.07	0.07
Year 2015	0.03	0.61	3.52	0.37	0.12	0.12
Year 2030	0.04	0.80	4.60	0.48	0.16	0.16
Year 2045	0.04	0.80	4.60	0.48	0.16	0.16
Peak Daily Emissions (lb/day)						
Year 2005	-	-	-	-	-	-
Year 2010	0.36	7.27	41.82	4.36	1.45	1.45
Year 2015	0.42	8.46	48.65	5.08	1.69	1.69
Year 2030	0.51	10.24	58.87	6.14	2.05	2.04
Year 2045	0.51	10.24	58.87	6.14	2.05	2.04

Note: These emissions represent regional power plant emissions associated with electricity generation.

Table E1.2-Alt4-192. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	28.1	100.8	274.0	2.3	13.3	12.2
Year 2010	7.1	146.1	133.8	0.4	4.5	4.2
Year 2015	10.4	273.1	237.4	0.7	8.0	7.4
Year 2030	5.0	320.6	52.8	0.9	1.4	1.3
Year 2045	5.0	320.6	52.8	0.9	1.4	1.3

Table E1.2-Alt4-193. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 4 without Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	379	1,359	3,693	31	179	165
Year 2010	149	3,052	2,795	8	95	87
Year 2015	144	3,770	3,277	10	111	102
Year 2030	64	4,101	675	12	18	16
Year 2045	64	4,101	675	12	18	16

Table E1.2-Alt4-194. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	33.4	493.0	196.1	0.7	3.6	3.4
Year 2010	69.7	1,314.5	248.0	0.2	3.7	3.7
Year 2015	1.8	254.3	18.0	0.4	0.8	0.8
Year 2030	2.5	345.7	24.5	0.5	1.2	1.1
Year 2045	2.4	337.2	24.2	0.5	1.1	1.1

Emissions include electricity consumption by electric RTGs.

Table E1.2-Alt4-195. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 4 with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	450	6,644	2,642	10	48	46
Year 2010	1,457	27,470	5,182	5	78	77
Year 2015	24	3,509	249	5	11	11
Year 2030	32	4,421	314	6	15	15
Year 2045	30	4,312	309	6	14	14

**Table E1.2-Alt4-196. Peak Daily Operational Emissions Without Mitigation
Alternative 4**

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	379	1,359	3,693	31	179	165
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	945	3,428	12,785	5,651	1,027	824
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	784	2,822	11,262	5,622	942	747
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	453	-3,840	9,894	5,640	974	774
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	255	544	6,425	6,273	753	602
Ships - Hoteling	70	190	2,516	4,621	392	313
Tugboats	3	21	112	0	4	4
Trucks	364	1,556	3,107	6	283	135
Trains	78	269	1,383	1	42	38
Railyard Equipment	4	143	121	0	4	3
Terminal Equipment	144	3,770	3,277	10	111	102
Worker Commuter Vehicles	8	98	13	0	27	5
Total - Project Year 2015	926	6,591	16,954	10,910	1,614	1,203
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	764	5,984	15,431	10,882	1,530	1,125
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	906	4,300	16,761	10,910	1,608	1,197
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	255	544	6,425	6,273	753	602
Ships - Hoteling	70	190	2,516	4,621	392	313
Tugboats	3	21	84	0	4	3
Trucks	183	780	1,645	7	232	66
Trains	123	539	2,265	2	61	56
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	64	4,101	675	12	18	16
Worker Commuter Vehicles	5	59	6	0	32	6
Total - Project Year 2030	707	6,491	13,652	10,915	1,492	1,064
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	546	5,885	12,129	10,887	1,407	986
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	685	4,098	13,446	10,914	1,484	1,056
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	255	544	6,425	6,273	753	602
Ships - Hoteling	70	190	2,516	4,621	392	313
Tugboats	3	21	84	0	4	3
Trucks	171	731	1,558	7	229	63
Trains	110	539	2,100	2	52	47
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	64	4,101	675	12	18	16
Worker Commuter Vehicles	4	49	5	0	32	6
Total - Project Year 2045	682	6,433	13,399	10,915	1,479	1,052
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	520	5,826	11,876	10,887	1,395	974
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	660	4,097	13,195	10,914	1,472	1,045
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

**Table E1.2-Alt4-197. Average Daily Operational Emissions Without Mitigation
Alternative 4**

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	16	42	548	472	49	39
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	154	553	1,502	13	73	67
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	431	1,732	5,024	946	344	265
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	371	1,507	4,458	936	313	236
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	248	-969	3,949	942	325	246
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	100	210	2,326	1,338	206	165
Ships - Hoteling	28	76	984	841	87	70
Tugboats	1	9	48	0	2	2
Trucks	272	1,165	2,326	4	212	101
Trains	48	167	857	1	26	24
Railyard Equipment	3	116	98	0	3	3
Terminal Equipment	57	1,497	1,301	4	44	41
Worker Commuter Vehicles	7	80	11	0	22	4
Total - Project Year 2015	517	3,319	7,950	2,189	602	409
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	457	3,094	7,384	2,178	570	380
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	509	2,468	7,878	2,188	599	406
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	142	299	3,298	1,891	292	234
Ships - Hoteling	32	86	1,115	946	99	79
Tugboats	2	12	48	0	2	2
Trucks	150	638	1,344	6	190	54
Trains	47	204	860	1	23	21
Railyard Equipment	2	130	18	0	1	1
Terminal Equipment	27	1,757	289	5	8	7
Worker Commuter Vehicles	4	48	5	0	26	5
Total - Project Year 2030	406	3,173	6,977	2,849	640	402
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	346	2,948	6,411	2,839	609	373
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	397	2,284	6,901	2,849	637	399
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	142	299	3,298	1,891	292	234
Ships - Hoteling	32	86	1,115	946	99	79
Tugboats	2	12	48	0	2	2
Trucks	140	598	1,273	6	187	51
Trains	42	204	797	1	20	18
Railyard Equipment	2	130	18	0	1	1
Terminal Equipment	27	1,757	289	5	8	7
Worker Commuter Vehicles	4	40	4	0	26	5
Total - Project Year 2045	391	3,125	6,842	2,849	634	396
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	331	2,900	6,276	2,839	602	367
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	382	2,257	6,767	2,849	631	394
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-Alt4-198. Peak Daily Operational Emissions With Mitigation

Alternative 4

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	450	6,644	2,642	10	48	46
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	1,016	8,714	11,734	5,629	896	706
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	855	8,107	10,211	5,601	812	628
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	524	1,445	8,843	5,619	844	656
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	174	340	2,097	117	74	59
Ships - Hoteling	5	22	159	60	15	12
Tugboats	3	21	112	0	4	4
Trucks	126	433	1,090	2	193	53
Trains	78	269	1,383	1	42	38
Railyard Equipment	3	135	69	0	2	2
Terminal Equipment	24	3,509	249	5	11	11
Worker Commuter Vehicles	8	98	13	0	27	5
Total - Project Year 2015	421	4,828	5,171	186	367	185
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	260	4,222	3,648	157	282	107
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	401	2,537	4,978	185	360	178
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	174	340	2,097	117	74	59
Ships - Hoteling	5	22	159	60	15	12
Tugboats	3	21	84	0	4	3
Trucks	211	627	1,846	0	245	81
Trains	123	539	2,265	2	60	55
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	32	4,421	314	6	15	15
Worker Commuter Vehicles	5	59	6	0	32	6
Total - Project Year 2030	556	6,287	6,806	186	445	233
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	395	5,680	5,284	158	361	155
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	534	3,894	6,601	186	437	225
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	174	340	2,097	117	74	59
Ships - Hoteling	5	22	159	60	15	12
Tugboats	3	21	84	0	4	3
Trucks	211	627	1,846	0	245	81
Trains	110	539	2,100	2	51	47
Railyard Equipment	4	258	36	1	1	1
Terminal Equipment	30	4,312	309	6	14	14
Worker Commuter Vehicles	4	49	5	0	32	6
Total - Project Year 2045	542	6,169	6,636	186	435	224
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	380	5,562	5,113	158	351	146
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	520	3,832	6,433	186	428	216
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-Alt4-199. Average Daily Operational Emissions With Mitigation

Alternative 4

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	7	20	243	270	24	19
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	183	2,701	1,074	4	20	19
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	451	3,859	4,292	735	266	197
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	391	3,633	3,726	724	235	168
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	268	1,158	3,218	731	247	178
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	78	154	1,005	59	35	28
Ships - Hoteling	2	10	69	26	6	5
Tugboats	1	9	48	0	2	2
Trucks	95	324	815	1	144	40
Trains	48	167	857	1	26	24
Railyard Equipment	2	109	52	0	2	1
Terminal Equipment	10	1,393	99	2	4	4
Worker Commuter Vehicles	7	80	11	0	22	4
Total - Project Year 2015	242	2,247	2,955	90	240	108
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	182	2,021	2,389	79	209	79
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	235	1,395	2,884	89	238	105
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	111	220	1,418	83	49	39
Ships - Hoteling	2	11	77	29	7	6
Tugboats	2	12	48	0	2	2
Trucks	172	512	1,509	0	200	66
Trains	47	204	860	1	23	21
Railyard Equipment	2	130	18	0	1	1
Terminal Equipment	14	1,894	134	3	6	6
Worker Commuter Vehicles	4	48	5	0	26	5
Total - Project Year 2030	354	3,031	4,068	116	314	146
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	294	2,805	3,502	105	282	117
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	345	2,141	3,992	115	311	143
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	111	220	1,418	83	49	39
Ships - Hoteling	2	11	77	29	7	6
Tugboats	2	12	48	0	2	2
Trucks	172	512	1,509	0	200	66
Trains	42	204	797	1	19	18
Railyard Equipment	2	130	18	0	1	1
Terminal Equipment	13	1,848	133	3	6	6
Worker Commuter Vehicles	4	40	4	0	26	5
Total - Project Year 2045	348	2,977	4,002	116	310	142
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	288	2,751	3,436	105	279	113
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	340	2,108	3,927	115	307	140
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Table E1.2-Alt5-1. Annual Ship Visit Data - Alternative 5

<i>Project Scenario/Ship Type</i>	<i>Annual Ship Visits</i>	<i>Avg Hoteling per Ship (hr)</i>
Project Year 2005		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	42	70.0
Containerships 3,000 - 5,000 TEU	10	51.7
General Cargo Vessels	-	-
Total	52	
Project Year 2010		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	8	55.2
Containerships 5,000 - 6,000 TEU	47	36.8
Containerships 3,000 - 5,000 TEU	23	27.6
General Cargo Vessels	-	-
Total	78	
Project Year 2015		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	16	51.5
Containerships 5,000 - 6,000 TEU	47	34.4
Containerships 3,000 - 5,000 TEU	16	25.8
General Cargo Vessels	-	-
Total	78	
Project Year 2030 / 2045		
Containerships 9,000 - 11,000 TEU	8	43.6
Containerships 8,000 - 9,000 TEU	26	37.5
Containerships 5,000 - 6,000 TEU	55	25.3
Containerships 3,000 - 5,000 TEU	15	19.2
General Cargo Vessels	-	-
Total	104	

Table E1.2-Alt5-2. Peak Day Ship Visit Data - Alternative 5

Project Scenario/Ship Type	Peak Day Arrivals	Peak Day Departures	Peak Day Hoteling (hr)	
			Without Mitigation	With Mitigation
Project Year 2005				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1		20.4	20.4
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	20.4
Project Year 2010				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU	1		20.4	18.8
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	18.8
Project Year 2015				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU	1		20.4	18.8
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	18.8
Project Year 2030 / 2045				
Containerships 9,000 - 11,000 TEU	1		20.4	18.8
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	18.8

Notes: (1) Hoteling time equals 24 hours minus vessel transit time within the SCAB. Because the Vessel Speed Reduction (VSR) program increases transit time, the hoteling times are shorter when VSR is implemented as mitigation. For the Mitigated Project, VSR is assumed for 2010, 2015, 2030, and 2045. VSR is not assumed for the unmitigated project and for the 2005 mitigated project.

Table E1.2-Alt5-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP)

Alternative 5

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel</i>	<i>Load Factor (1)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	70.0	127,267
Containerships 3,000 - 5,000 TEU	6,526	0.20	51.7	67,533
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	55.2	111,831
Containerships 5,000 - 6,000 TEU	11,360	0.16	36.8	66,870
Containerships 3,000 - 5,000 TEU	6,526	0.20	27.6	35,990
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	51.5	104,251
Containerships 5,000 - 6,000 TEU	11,360	0.16	34.4	62,468
Containerships 3,000 - 5,000 TEU	6,526	0.20	25.8	33,692
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	43.6	88,308
Containerships 8,000 - 9,000 TEU	13,501	0.15	37.5	75,973
Containerships 5,000 - 6,000 TEU	11,360	0.16	25.3	46,045
Containerships 3,000 - 5,000 TEU	6,526	0.20	19.2	25,115
General Cargo Vessels	1,776	0.22	-	-

(1) Source: POLA 2005 Emission Inventory Report.

Table E1.2-Alt5-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit

Alternative 5

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel (1)</i>	<i>Load Factor (2)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	4.1	8,303
Containerships 8,000 - 9,000 TEU	13,501	0.15	4.1	8,303
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	-	-

Note: Average anchoring time was derived from actual anchoring data for China Shipping ship visits for 2004, 2005, and 2006, provided by Starcrest and POLA.

**Table E1.2-Alt5-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit
Alternative 5**

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	70.0	10.806
Containerships 3,000 - 5,000 TEU	0.1543	51.7	7.985
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	55.2	8.522
Containerships 5,000 - 6,000 TEU	0.1543	36.8	5.678
Containerships 3,000 - 5,000 TEU	0.1543	27.6	4.256
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	51.5	7.945
Containerships 5,000 - 6,000 TEU	0.1543	34.4	5.304
Containerships 3,000 - 5,000 TEU	0.1543	25.8	3.984
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	43.6	6.730
Containerships 8,000 - 9,000 TEU	0.1543	37.5	5.790
Containerships 5,000 - 6,000 TEU	0.1543	25.3	3.910
Containerships 3,000 - 5,000 TEU	0.1543	19.2	2.970
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt5-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit

Alternative 5

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	4.1	0.633
Containerships 8,000 - 9,000 TEU	0.1543	4.1	0.633
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	-	-

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt5-18. Annual Emissions from OGV Main Engine - Alternative 5

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.40	0.93	12.02	7.00	1.00	0.80
Containerships 5,000 - 6,000 TEU	1.74	4.07	52.58	30.59	4.36	3.49
Containerships 3,000 - 5,000 TEU	0.68	1.58	20.49	11.92	1.70	1.36
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	6.6	85.1	49.5	7.1	5.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.80	1.86	24.05	13.99	1.99	1.59
Containerships 5,000 - 6,000 TEU	1.74	4.07	52.58	30.59	4.36	3.49
Containerships 3,000 - 5,000 TEU	0.45	1.06	13.66	7.95	1.13	0.91
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	7.0	90.3	52.5	7.5	6.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.46	1.06	13.74	7.99	1.14	0.91
Containerships 8,000 - 9,000 TEU	1.33	3.10	40.08	23.32	3.32	2.66
Containerships 5,000 - 6,000 TEU	2.05	4.79	61.93	36.03	5.13	4.11
Containerships 3,000 - 5,000 TEU	0.42	0.99	12.75	7.42	1.06	0.85
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.3	9.9	128.5	74.8	10.6	8.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt5-19. Annual Emissions from OGV Main Engine - Alternative 5

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.35	0.77	8.31	4.56	0.72	0.57
Containerships 5,000 - 6,000 TEU	1.52	3.39	36.32	19.93	3.14	2.51
Containerships 3,000 - 5,000 TEU	0.55	1.27	14.66	8.27	1.24	0.99
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.4	5.4	59.3	32.7	5.1	4.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.69	1.55	16.61	9.11	1.44	1.15
Containerships 5,000 - 6,000 TEU	1.52	3.39	36.32	19.93	3.14	2.51
Containerships 3,000 - 5,000 TEU	0.37	0.85	9.77	5.51	0.83	0.66
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.6	5.8	62.7	34.6	5.4	4.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.40	0.88	9.49	5.21	0.82	0.66
Containerships 8,000 - 9,000 TEU	1.16	2.58	27.68	15.19	2.39	1.92
Containerships 5,000 - 6,000 TEU	1.79	3.99	42.78	23.47	3.70	2.96
Containerships 3,000 - 5,000 TEU	0.34	0.79	9.12	5.14	0.77	0.62
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.7	8.2	89.1	49.0	7.7	6.1

Assumes VSRP compliance at the 2005 level.

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt5-20. Annual Emissions from OGV Main Engine - Alternative 5

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.14	0.29	2.09	0.93	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.63	1.25	9.16	4.08	0.90	0.72
Containerships 3,000 - 5,000 TEU	0.21	0.45	3.79	1.88	0.35	0.28
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	2.0	15.0	6.9	1.4	1.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.29	0.57	4.19	1.86	0.41	0.33
Containerships 5,000 - 6,000 TEU	0.63	1.25	9.16	4.08	0.90	0.72
Containerships 3,000 - 5,000 TEU	0.14	0.30	2.52	1.25	0.23	0.19
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	2.1	15.9	7.2	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.16	0.33	2.39	1.06	0.23	0.19
Containerships 8,000 - 9,000 TEU	0.48	0.95	6.98	3.11	0.68	0.55
Containerships 5,000 - 6,000 TEU	0.74	1.47	10.79	4.80	1.05	0.84
Containerships 3,000 - 5,000 TEU	0.13	0.28	2.36	1.17	0.22	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	3.0	22.5	10.1	2.2	1.8

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt5-21. Annual Emissions from OGV Main Engine - Alternative 5

Harbor Transit - Inbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.45	0.06	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.29	0.33	1.97	0.28	0.26	0.21
Containerships 3,000 - 5,000 TEU	0.09	0.12	0.69	0.13	0.09	0.07
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	3.1	0.5	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.15	0.90	0.13	0.12	0.09
Containerships 5,000 - 6,000 TEU	0.29	0.33	1.97	0.28	0.26	0.21
Containerships 3,000 - 5,000 TEU	0.06	0.08	0.46	0.09	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.6	3.3	0.5	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.09	0.52	0.07	0.07	0.05
Containerships 8,000 - 9,000 TEU	0.22	0.25	1.51	0.21	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.34	0.38	2.33	0.33	0.30	0.24
Containerships 3,000 - 5,000 TEU	0.06	0.07	0.43	0.08	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.8	4.8	0.7	0.6	0.5

Assumes main engines use residual fuel with 2.7% sulfur content.

**Table E1.2-Alt5-22. Annual Emissions from OGV Main Engine - Alternative 5
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.07	0.38	0.08	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.21	0.29	1.66	0.36	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.07	0.10	0.61	0.17	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.5	2.6	0.6	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.10	0.13	0.76	0.17	0.09	0.07
Containerships 5,000 - 6,000 TEU	0.21	0.29	1.66	0.36	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.05	0.07	0.40	0.11	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.5	2.8	0.6	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.06	0.07	0.43	0.09	0.05	0.04
Containerships 8,000 - 9,000 TEU	0.16	0.22	1.27	0.28	0.16	0.12
Containerships 5,000 - 6,000 TEU	0.25	0.34	1.96	0.43	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.06	0.38	0.10	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.7	4.0	0.9	0.5	0.4

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt5-23. Annual Emissions from OGV Main Engine - Alternative 5

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.03	0.21	0.03	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.94	0.12	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.34	0.04	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.2	1.5	0.2	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.07	0.43	0.05	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.94	0.12	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.22	0.03	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.6	0.2	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.04	0.25	0.03	0.03	0.03
Containerships 8,000 - 9,000 TEU	0.11	0.12	0.72	0.09	0.09	0.08
Containerships 5,000 - 6,000 TEU	0.17	0.18	1.11	0.14	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.03	0.03	0.21	0.03	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.4	2.3	0.3	0.3	0.2

Assumes main engines use residual fuel with 2.7% sulfur content.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt5-24. Annual Emissions from OGV Main Engine - Alternative 5

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.46	0.06	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.30	0.33	2.01	0.25	0.27	0.21
Containerships 3,000 - 5,000 TEU	0.11	0.12	0.72	0.09	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	3.2	0.4	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.14	0.15	0.92	0.12	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.30	0.33	2.01	0.25	0.27	0.21
Containerships 3,000 - 5,000 TEU	0.07	0.08	0.48	0.06	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.6	3.4	0.4	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.09	0.53	0.07	0.07	0.06
Containerships 8,000 - 9,000 TEU	0.23	0.25	1.53	0.19	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.36	0.38	2.37	0.30	0.31	0.25
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.45	0.06	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.8	4.9	0.6	0.6	0.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt5-25. Max Daily Emissions from OGV Main Engine - Alternative 5
Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	51.1	119.2	1,541.5	1,494.7	169.6	135.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	54.7	127.7	1,651.2	1,601.0	181.7	145.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	54.7	127.7	1,651.2	1,601.0	181.7	145.3

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt5-26. Max Daily Emissions from OGV Main Engine - Alternative 5

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	66.9	156.2	2,019.3	1,957.9	222.2	177.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	71.7	167.3	2,163.0	2,097.2	238.0	190.4
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	71.7	167.3	2,163.0	2,097.2	238.0	190.4

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt5-27. Max Daily Emissions from OGV Main Engine - Alternative 5

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	268.5	199.1	34.8	27.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	268.5	199.1	34.8	27.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	19.7	39.2	287.6	213.3	37.3	29.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	19.7	39.2	287.6	213.3	37.3	29.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt5-28. Max Daily Emissions from OGV Main Engine - Alternative 5
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	18.3	20.5	124.0	29.1	21.5	17.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.3	20.5	124.0	29.1	21.5	17.2

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt5-29. Max Daily Emissions from OGV Main Engine - Alternative 5
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-30. Max Daily Emissions from OGV Main Engine - Alternative 5
Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	8.9	9.6	58.9	12.4	10.4	8.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	58.9	12.4	10.4	8.3

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt5-31. Max Daily Emissions from OGV Main Engine - Alternative 5

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	59.0	12.4	10.4	8.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	59.0	12.4	10.4	8.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	9.6	10.2	63.2	13.2	11.1	8.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.6	10.2	63.2	13.2	11.1	8.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-32. Annual Emissions from OGV Auxiliary Engines - Alternative 5
Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.02	0.32	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.63	1.36	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.51	0.42	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.5	2.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.65	0.54	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.63	1.36	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.34	0.28	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.6	2.2	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.34	0.29	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.08	0.90	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.92	1.60	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.32	0.26	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.7	3.0	0.4	0.3

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-Alt5-33. Annual Emissions from OGV Auxiliary Engines - Alternative 5

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.70	0.58	0.07	0.06
Containerships 5,000 - 6,000 TEU	0.10	0.26	3.53	2.94	0.36	0.29
Containerships 3,000 - 5,000 TEU	0.03	0.08	1.03	0.86	0.11	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	5.3	4.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.40	1.16	0.14	0.11
Containerships 5,000 - 6,000 TEU	0.10	0.26	3.53	2.94	0.36	0.29
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.69	0.57	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.6	4.7	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.06	0.75	0.62	0.08	0.06
Containerships 8,000 - 9,000 TEU	0.06	0.17	2.33	1.94	0.24	0.19
Containerships 5,000 - 6,000 TEU	0.11	0.31	4.15	3.46	0.42	0.34
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.64	0.53	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.9	6.6	0.8	0.6

Assumes VSRP compliance at the 2005 level.

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-Alt5-34. Annual Emissions from OGV Auxiliary Engines - Alternative 5

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.41	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.60	0.39	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.83	0.53	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.40	0.26	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.3	2.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.44	0.28	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.38	0.89	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.45	1.58	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.37	0.24	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.6	3.0	0.4	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt5-35. Annual Emissions from OGV Auxiliary Engines - Alternative 5
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.57	0.37	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.84	0.54	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.38	0.24	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.3	2.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.45	0.29	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.40	0.90	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.45	1.58	0.19	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.23	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.6	3.0	0.4	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt5-36. Annual Emissions from OGV Auxiliary Engines - Alternative 5
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.37	0.24	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.82	1.17	0.14	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.50	0.32	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.7	1.7	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.73	0.47	0.06	0.05
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.82	1.17	0.14	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.33	0.21	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.9	1.9	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.39	0.25	0.03	0.02
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.22	0.79	0.10	0.08
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.14	1.38	0.17	0.14
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.31	0.20	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	4.1	2.6	0.3	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-37. Annual Emissions from OGV Auxiliary Engines - Alternative 5

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.20	0.13	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.97	0.63	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.4	0.9	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.39	0.25	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.97	0.63	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.18	0.11	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.5	1.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.02	0.21	0.13	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.65	0.42	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.03	0.09	1.14	0.74	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.16	0.11	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	1.4	0.2	0.1

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-38. Annual Emissions from OGV Auxiliary Engines - Alternative 5

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.57	0.37	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.1	2.0	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.84	0.54	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.08	1.34	0.17	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.38	0.24	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.3	2.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.45	0.29	0.04	0.03
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.40	0.90	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.45	1.58	0.19	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.23	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.6	3.0	0.4	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-39. Annual Emissions from OGV Auxiliary Engines - Alternative 5

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.36	6.48	85.25	54.99	6.79	5.43
Containerships 3,000 - 5,000 TEU	0.30	0.82	10.77	6.95	0.86	0.69
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.7	7.3	96.0	61.9	7.6	6.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.38	1.06	13.91	8.97	1.11	0.89
Containerships 5,000 - 6,000 TEU	1.38	3.79	49.91	32.19	3.97	3.18
Containerships 3,000 - 5,000 TEU	0.37	1.02	13.43	8.66	1.07	0.86
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	77.3	49.8	6.2	4.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.72	1.97	25.94	16.73	2.07	1.65
Containerships 5,000 - 6,000 TEU	1.29	3.54	46.62	30.07	3.71	2.97
Containerships 3,000 - 5,000 TEU	0.23	0.64	8.38	5.41	0.67	0.53
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.2	80.9	52.2	6.4	5.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.32	0.89	11.72	7.56	0.93	0.75
Containerships 8,000 - 9,000 TEU	0.87	2.40	31.50	20.32	2.51	2.01
Containerships 5,000 - 6,000 TEU	1.12	3.08	40.48	26.11	3.22	2.58
Containerships 3,000 - 5,000 TEU	0.16	0.44	5.83	3.76	0.46	0.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.8	89.5	57.7	7.1	5.7

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-40. Annual Emissions from OGV Auxiliary Engines - Alternative 5

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.03	0.67	0.08	0.07
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.56	3.59	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.06	0.15	2.00	1.29	0.16	0.13
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.6	5.5	0.7	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.16	2.07	1.33	0.16	0.13
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.56	3.59	0.44	0.35
Containerships 3,000 - 5,000 TEU	0.04	0.10	1.33	0.86	0.11	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	9.0	5.8	0.7	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	1.10	0.71	0.09	0.07
Containerships 8,000 - 9,000 TEU	0.10	0.26	3.44	2.22	0.27	0.22
Containerships 5,000 - 6,000 TEU	0.18	0.50	6.55	4.23	0.52	0.42
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.24	0.80	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	12.3	8.0	1.0	0.8

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	41.4	57.5	5.8	4.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	41.4	57.5	5.8	4.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.1	3.1	41.4	57.5	5.8	4.7
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	41.4	57.5	5.8	4.7

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-Alt5-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5
Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.2	75.3	7.6	6.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.2	75.3	7.6	6.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	54.2	75.3	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.2	75.3	7.6	6.1

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-Alt5-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt5-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt5-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt5-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	36.4	100.1	1,338.2	1,859.9	188.6	150.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.4	100.1	1,338.2	1,859.9	188.6	150.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur and no AMP.

Table E1.2-Alt5-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt5-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt5-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt5-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.004	0.009	0.090	0.557	0.029	0.023
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.022	0.133	0.007	0.006
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.001	0.002	0.017	0.103	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.005	0.010	0.101	0.621	0.033	0.026
Containerships 3,000 - 5,000 TEU	0.002	0.005	0.050	0.310	0.016	0.013
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.0	0.1	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.002	0.003	0.034	0.207	0.011	0.009
Containerships 5,000 - 6,000 TEU	0.005	0.010	0.101	0.621	0.033	0.026
Containerships 3,000 - 5,000 TEU	0.002	0.003	0.034	0.207	0.011	0.009
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.0	0.1	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.001	0.002	0.018	0.110	0.006	0.005
Containerships 8,000 - 9,000 TEU	0.003	0.005	0.056	0.345	0.018	0.014
Containerships 5,000 - 6,000 TEU	0.006	0.012	0.119	0.731	0.038	0.031
Containerships 3,000 - 5,000 TEU	0.002	0.003	0.031	0.193	0.010	0.008
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.4	0.1	0.1

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt5-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 5
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.027	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.164	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.013	0.082	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.009	0.055	0.003	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.164	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.055	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.005	0.029	0.002	0.001
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.015	0.091	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.031	0.193	0.010	0.008
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt5-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 5
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.021	0.129	0.007	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.005	0.031	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.024	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.023	0.144	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.012	0.072	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.008	0.048	0.003	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.023	0.144	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.048	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.004	0.026	0.001	0.001
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.013	0.080	0.004	0.003
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.169	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.007	0.045	0.002	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.3	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.011	0.069	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.003	0.016	0.001	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.002	0.013	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.012	0.077	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.038	0.002	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.026	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.012	0.077	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.004	0.026	0.001	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.002	0.014	0.001	0.001
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.007	0.043	0.002	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.015	0.090	0.005	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.004	0.024	0.001	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.024	0.147	0.008	0.006
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.006	0.035	0.002	0.001
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.000	0.004	0.027	0.001	0.001
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.164	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.013	0.082	0.004	0.003
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.000	0.001	0.009	0.055	0.003	0.002
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.027	0.164	0.009	0.007
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.055	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.000	0.000	0.005	0.029	0.002	0.001
Containerships 8,000 - 9,000 TEU	0.001	0.001	0.015	0.091	0.005	0.004
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.031	0.193	0.010	0.008
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.051	0.003	0.002
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.164	0.328	3.345	20.632	1.080	0.864
Containerships 3,000 - 5,000 TEU	0.029	0.058	0.588	3.630	0.190	0.152
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.024	0.048	0.490	3.022	0.158	0.127
Containerships 5,000 - 6,000 TEU	0.096	0.192	1.958	12.079	0.632	0.506
Containerships 3,000 - 5,000 TEU	0.036	0.072	0.734	4.527	0.237	0.190
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	3.2	19.6	1.0	0.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.045	0.090	0.913	5.634	0.295	0.236
Containerships 5,000 - 6,000 TEU	0.090	0.179	1.829	11.284	0.591	0.473
Containerships 3,000 - 5,000 TEU	0.022	0.045	0.458	2.825	0.148	0.118
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	3.2	19.7	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.020	0.040	0.413	2.545	0.133	0.107
Containerships 8,000 - 9,000 TEU	0.054	0.109	1.109	6.843	0.358	0.287
Containerships 5,000 - 6,000 TEU	0.078	0.156	1.588	9.796	0.513	0.410
Containerships 3,000 - 5,000 TEU	0.016	0.031	0.319	1.966	0.103	0.082
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	3.4	21.2	1.1	0.9

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 5

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.010	0.019	0.196	1.208	0.063	0.051
Containerships 3,000 - 5,000 TEU	0.002	0.005	0.047	0.288	0.015	0.012
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.002	0.004	0.036	0.224	0.012	0.009
Containerships 5,000 - 6,000 TEU	0.011	0.021	0.218	1.346	0.070	0.056
Containerships 3,000 - 5,000 TEU	0.005	0.011	0.109	0.673	0.035	0.028
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	2.2	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.004	0.007	0.073	0.449	0.023	0.019
Containerships 5,000 - 6,000 TEU	0.011	0.021	0.218	1.346	0.070	0.056
Containerships 3,000 - 5,000 TEU	0.004	0.007	0.073	0.449	0.023	0.019
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	2.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.002	0.004	0.039	0.239	0.013	0.010
Containerships 8,000 - 9,000 TEU	0.006	0.012	0.121	0.748	0.039	0.031
Containerships 5,000 - 6,000 TEU	0.013	0.025	0.257	1.585	0.083	0.066
Containerships 3,000 - 5,000 TEU	0.003	0.007	0.068	0.419	0.022	0.018
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.5	3.0	0.2	0.1

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt5-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5
Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt5-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt5-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5

Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt5-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt5-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5

Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt5-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt5-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5

Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt5-67b. LNG Truck Mitigation Rates**Mitigated Project**

<i>Year</i>	<i>% Trucks</i>
Year 2005	0.0%
Year 2006	0.0%
Year 2007	0.0%
Year 2008	0.0%
Year 2009	0.0%
Year 2010	0.0%
Year 2011	0.0%
Year 2012	50.0%
Year 2013	50.0%
Year 2014	70.0%
Year 2015	70.0%
Year 2016	70.0%
Year 2017	70.0%
Year 2018	100.0%
Year 2019	100.0%
Year 2020	100.0%
Year 2021	100.0%
Year 2022	100.0%
Year 2023	100.0%
Year 2024	100.0%
Year 2025	100.0%
Year 2026	100.0%
Year 2027	100.0%
Year 2028	100.0%
Year 2029	100.0%
Year 2030+	100.0%

Table E1.2-Alt5-68. Annual Emissions from Tugboat Main Engine - Alternative 5

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.10	0.51	3.30	0.22	0.13	0.12
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.08	0.46	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.07	0.46	2.77	0.00	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.03	0.23	1.38	0.00	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.11	0.76	4.61	0.00	0.14	0.13
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.15	0.82	0.00	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.07	0.46	2.45	0.00	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.15	0.82	0.00	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.11	0.76	4.09	0.00	0.14	0.13
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.08	0.32	0.00	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.25	1.01	0.00	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.54	2.15	0.00	0.10	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.14	0.57	0.00	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.15	1.02	4.06	0.00	0.18	0.17

Table E1.2-Alt5-69. Max Daily Emissions from Tugboat Main Engine - Alternative 5

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	59.10	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	59.1	0.0	1.8	1.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	52.4	0.0	1.8	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	39.0	0.0	1.7	1.6

Table E1.2-Alt5-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 5

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.04	0.21	0.02	0.01	0.01
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.03	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.18	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.05	0.29	0.00	0.01	0.01
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.06	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.05	0.29	0.00	0.01	0.01
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.02	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.02	0.07	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.15	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.01	0.07	0.29	0.00	0.01	0.01

Table E1.2-Alt5-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 5

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.75	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.8	0.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.7	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	2.8	0.0	0.1	0.1

Table E1.2-Alt5-72. Summary of Annual Marine Vessel Emissions without Mitigation

Alternative 5

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	2.8	7.7	99.9	86.2	8.9	7.1
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	8.6	20.2	235.8	162.8	20.8	16.6
Project Year 2010						
Ships - AQMD to 20 mile	2.9	6.8	87.6	51.6	7.3	5.8
Ships - 20 mile to PA	2.6	5.8	64.5	37.1	5.6	4.5
Ships - PA	1.1	2.2	18.3	9.9	1.8	1.4
Ships - Harbor Transit	0.9	1.4	11.6	5.3	1.2	1.0
Ships - Turning & Docking	0.8	1.1	9.2	3.9	1.0	0.8
Ships - Anchoring	0.3	0.7	9.0	7.8	0.8	0.6
Ships - Hoteling	2.3	6.2	80.4	69.5	7.2	5.7
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.8	4.9	0.0	0.2	0.1
Total	11.0	25.0	285.5	185.0	25.0	20.0
Project Year 2015						
Ships - AQMD to 20 mile	3.1	7.2	92.9	54.7	7.7	6.2
Ships - 20 mile to PA	2.7	6.2	68.3	39.2	6.0	4.8
Ships - PA	1.2	2.4	19.3	10.4	1.9	1.5
Ships - Harbor Transit	1.0	1.5	12.4	5.6	1.3	1.0
Ships - Turning & Docking	0.9	1.2	9.9	4.1	1.1	0.9
Ships - Anchoring	0.3	0.7	9.3	8.0	0.8	0.7
Ships - Hoteling	2.4	6.5	84.1	72.0	7.5	6.0
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.1	0.8	4.4	0.0	0.2	0.1
Total	11.6	26.5	300.7	194.1	26.4	21.1
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	4.4	10.2	132.2	77.8	11.0	8.8
Ships - 20 mile to PA	3.9	8.8	96.9	55.6	8.5	6.8
Ships - PA	1.7	3.4	27.4	14.5	2.6	2.1
Ships - Harbor Transit	1.5	2.2	17.6	7.9	1.8	1.5
Ships - Turning & Docking	1.3	1.7	14.1	5.8	1.5	1.2
Ships - Anchoring	0.4	1.0	12.8	11.0	1.1	0.9
Ships - Hoteling	2.6	7.1	93.0	78.9	8.2	6.6
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.1	4.3	0.0	0.2	0.2
Total	15.8	35.5	398.3	251.5	35.1	28.1

**Table E1.2-Alt5-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation
Alternative 5**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	52	122	1,583	1,552	175	140
Ships - 20 mile to PA	68	160	2,074	2,033	230	184
Ships - PA	20	41	324	303	44	35
Ships - Harbor Transit	20	27	226	194	36	29
Ships - Turning & Docking	20	26	221	186	36	28
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	39	105	1,386	2,484	214	171
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	63	0	2	2
Total	221	492	5,877	6,753	736	589
Project Year 2015						
Ships - AQMD to 20 mile	52	122	1,583	1,552	175	140
Ships - 20 mile to PA	68	160	2,074	2,033	230	184
Ships - PA	20	41	324	303	44	35
Ships - Harbor Transit	20	27	226	194	36	29
Ships - Turning & Docking	20	26	221	186	36	28
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	39	105	1,386	2,484	214	171
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	56	0	2	2
Total	221	492	5,870	6,753	736	589
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	56	131	1,693	1,659	188	150
Ships - 20 mile to PA	73	171	2,217	2,173	246	196
Ships - PA	21	43	344	317	46	37
Ships - Harbor Transit	21	29	235	196	38	30
Ships - Turning & Docking	21	28	229	187	37	30
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	39	105	1,386	2,484	214	171
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	42	0	2	2
Total	233	517	6,145	7,016	769	616

Table E1.2-Alt5-74. AMP Compliance Rates

Alternative 5 with Mitigation

Project Year	Compliance Rate
Project Year 2005	60%
Project Year 2006	70%
Project Year 2008	70%
Project Year 2009	70%
Project Year 2010	90%
Project Year 2011	100%
Project Year 2012	100%
Project Year 2015	100%
Project Year 2020	100%
Project Year 2030+	100%

Source: Stipulated Judgment & Expanded AMP.

Table E1.2-Alt5-75. Vessel Speed Reduction Program (VSRP) Compliance Rates

Alternative 5 with Mitigation

Year	Compliance Rate
Year 2005 (1)	68.0%
Year 2009+ (2)	100.0%

Notes: (1) This is the historical average compliance rate for CS for 2005 from 20 nm to the PA.

VSR was not observed beyond 20 nm. Source: POLA staff (K. Maggay, 2007).

(2) The VSR mitigation measure starting in 2009 applies from 40 nm to the PA.

**Table E1.2-Alt5-76. OGV Main Engine Slide Valve Compliance Rates
Alternative 5 with Mitigation**

<i>Year</i>	<i>Compliance Rate</i>
Year 2005	0.0%
Year 2009	25.0%
Year 2010	50.0%
Year 2012	75.0%
Year 2014	100.0%
Year 2015+	100.0%

Table E1.2-Alt5-78. OGV Main Engine Fuel Usage

Alternative 5 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt5-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit

Alternative 5 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

**Table E1.2-Alt5-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling
Alternative 5 with Mitigation**

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	71%	29%		
Project Year 2007	71%	29%		
Project Year 2009	50%	20%	30%	
Project Year 2010	36%	15%	50%	
Project Year 2011	36%	15%	50%	
Project Year 2012	36%	15%	50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt5-81. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.56	3.65	47.19	27.45	3.91	3.13
Containerships 3,000 - 5,000 TEU	0.29	0.68	8.76	5.09	0.73	0.58
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.3	55.9	32.5	4.6	3.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.20	0.43	2.96	0.98	0.20	0.16
Containerships 5,000 - 6,000 TEU	0.88	1.89	12.94	4.27	0.88	0.70
Containerships 3,000 - 5,000 TEU	0.30	0.68	5.50	1.96	0.35	0.28
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.0	21.4	7.2	1.4	1.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.40	0.86	4.62	0.26	0.18	0.15
Containerships 5,000 - 6,000 TEU	0.88	1.89	10.10	0.56	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.20	0.45	2.86	0.17	0.11	0.09
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	3.2	17.6	1.0	0.7	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.23	0.49	2.64	0.15	0.10	0.08
Containerships 8,000 - 9,000 TEU	0.67	1.44	7.70	0.43	0.30	0.24
Containerships 5,000 - 6,000 TEU	1.04	2.22	11.89	0.66	0.47	0.38
Containerships 3,000 - 5,000 TEU	0.19	0.42	2.67	0.16	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.6	24.9	1.4	1.0	0.8

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt5-82. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.36	3.04	32.60	17.88	2.82	2.26
Containerships 3,000 - 5,000 TEU	0.24	0.54	6.26	3.53	0.53	0.42
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.6	3.6	38.9	21.4	3.4	2.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.26	0.57	3.88	1.28	0.26	0.21
Containerships 5,000 - 6,000 TEU	1.15	2.47	16.96	5.59	1.15	0.92
Containerships 3,000 - 5,000 TEU	0.39	0.89	7.21	2.57	0.46	0.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.8	3.9	28.0	9.4	1.9	1.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.53	1.13	6.05	0.34	0.24	0.19
Containerships 5,000 - 6,000 TEU	1.15	2.47	13.23	0.73	0.52	0.42
Containerships 3,000 - 5,000 TEU	0.26	0.59	3.75	0.23	0.14	0.11
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	4.2	23.0	1.3	0.9	0.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.30	0.65	3.46	0.19	0.14	0.11
Containerships 8,000 - 9,000 TEU	0.88	1.88	10.08	0.56	0.40	0.32
Containerships 5,000 - 6,000 TEU	1.36	2.91	15.58	0.86	0.61	0.49
Containerships 3,000 - 5,000 TEU	0.25	0.55	3.50	0.21	0.13	0.10
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	6.0	32.6	1.8	1.3	1.0

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt5-83. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.56	1.12	8.22	3.66	0.80	0.64
Containerships 3,000 - 5,000 TEU	0.09	0.19	1.62	0.80	0.15	0.12
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	1.3	9.8	4.5	1.0	0.8
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.14	0.29	1.69	0.50	0.12	0.10
Containerships 5,000 - 6,000 TEU	0.63	1.25	7.40	2.18	0.53	0.43
Containerships 3,000 - 5,000 TEU	0.21	0.45	3.06	1.00	0.21	0.17
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.0	2.0	12.1	3.7	0.9	0.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.29	0.57	2.64	0.13	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.63	1.25	5.77	0.29	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.14	0.30	1.59	0.09	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	2.1	10.0	0.5	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.16	0.33	1.51	0.07	0.06	0.05
Containerships 8,000 - 9,000 TEU	0.48	0.95	4.40	0.22	0.18	0.15
Containerships 5,000 - 6,000 TEU	0.74	1.47	6.80	0.34	0.28	0.23
Containerships 3,000 - 5,000 TEU	0.13	0.28	1.48	0.08	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	3.0	14.2	0.7	0.6	0.5

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt5-84. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.29	1.77	0.25	0.23	0.19
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.29	0.05	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.36	0.03	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.29	0.33	1.59	0.15	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.09	0.12	0.55	0.07	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	2.5	0.3	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.13	0.15	0.57	0.01	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.29	0.33	1.24	0.02	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.06	0.08	0.29	0.01	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.6	2.1	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.09	0.33	0.01	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.22	0.25	0.95	0.01	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.34	0.38	1.47	0.02	0.08	0.07
Containerships 3,000 - 5,000 TEU	0.06	0.07	0.27	0.01	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.8	3.0	0.0	0.2	0.1

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt5-85. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.26	1.49	0.33	0.18	0.15
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.26	0.07	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.8	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.07	0.31	0.04	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.21	0.29	1.34	0.19	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.07	0.10	0.49	0.09	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.5	2.1	0.3	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.10	0.13	0.48	0.01	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.21	0.29	1.05	0.03	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.05	0.07	0.25	0.01	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	0.5	1.8	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.06	0.07	0.27	0.01	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.16	0.22	0.80	0.02	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.25	0.34	1.23	0.03	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.04	0.06	0.24	0.01	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.7	2.5	0.1	0.1	0.1

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt5-86. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.14	0.84	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.14	0.02	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	1.0	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.03	0.17	0.01	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.76	0.06	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.27	0.02	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.2	1.2	0.1	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.07	0.27	0.00	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.59	0.01	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.03	0.04	0.14	0.00	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	1.0	0.0	0.1	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.04	0.04	0.15	0.00	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.11	0.12	0.45	0.01	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.17	0.18	0.70	0.01	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.03	0.03	0.13	0.00	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.4	1.4	0.0	0.1	0.1

Mitigation measures include slide valves and low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt5-87. Annual Emissions from OGV Main Engine - Alternative 5 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.27	0.29	1.81	0.23	0.24	0.19
Containerships 3,000 - 5,000 TEU	0.05	0.05	0.31	0.04	0.04	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.3	2.1	0.3	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.07	0.07	0.37	0.03	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.30	0.33	1.62	0.14	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.11	0.12	0.58	0.05	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.5	2.6	0.2	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.14	0.15	0.58	0.01	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.30	0.33	1.27	0.02	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.07	0.08	0.30	0.00	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.5	0.6	2.1	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.09	0.33	0.00	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.23	0.25	0.97	0.01	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.36	0.38	1.49	0.02	0.08	0.07
Containerships 3,000 - 5,000 TEU	0.07	0.07	0.28	0.00	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.7	0.8	3.1	0.0	0.2	0.1

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt5-88. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	25.8	55.3	469.9	389.6	57.4	45.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	55.3	469.9	389.6	57.4	45.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	25.8	55.3	296.1	16.4	11.7	9.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	55.3	296.1	16.4	11.7	9.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	27.7	59.3	317.1	17.6	12.5	10.0
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	27.7	59.3	317.1	17.6	12.5	10.0

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt5-89. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.9	72.5	615.6	510.4	75.2	60.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.9	72.5	615.6	510.4	75.2	60.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.9	72.5	387.8	21.5	15.3	12.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.9	72.5	387.8	21.5	15.3	12.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	36.3	77.6	415.4	23.1	16.4	13.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	36.3	77.6	415.4	23.1	16.4	13.1

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt5-90. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	268.5	199.1	34.8	27.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	268.5	199.1	34.8	27.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	18.4	36.6	169.1	8.4	7.1	5.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.4	36.6	169.1	8.4	7.1	5.7
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	19.7	39.2	181.2	9.0	7.6	6.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	19.7	39.2	181.2	9.0	7.6	6.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt5-91. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	115.8	27.1	20.1	16.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	115.8	27.1	20.1	16.1
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	17.1	19.1	72.9	1.1	4.1	3.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	17.1	19.1	72.9	1.1	4.1	3.3
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	18.3	20.5	78.1	1.2	4.4	3.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.3	20.5	78.1	1.2	4.4	3.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt5-92. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-Alt5-93. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	55.0	11.5	9.7	7.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	55.0	11.5	9.7	7.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.3	8.9	34.7	0.5	2.0	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.3	8.9	34.7	0.5	2.0	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	8.9	9.6	37.1	0.5	2.1	1.7
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	37.1	0.5	2.1	1.7

- Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.
(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt5-94. Max Daily Emissions from OGV Main Engine - Alternative 5 with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	59.0	12.4	10.4	8.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	59.0	12.4	10.4	8.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	8.9	9.6	37.1	0.5	2.1	1.7
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	8.9	9.6	37.1	0.5	2.1	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	9.6	10.2	39.8	0.6	2.3	1.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.6	10.2	39.8	0.6	2.3	1.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt5-95. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.11	1.46	1.22	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.7	1.4	0.2	0.1
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.62	0.28	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.10	1.42	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.89	0.41	0.06	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.6	2.1	0.3	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.20	0.07	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.02	0.19	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.58	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.8	0.3	0.1	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.02	0.05	0.64	0.04	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.06	0.16	1.99	0.12	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.10	0.28	3.55	0.22	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.54	0.03	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.7	0.4	0.1	0.1

Mitigation measures include VSR and low sulfur fuel.

**Table E1.2-Alt5-96. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.24	3.16	2.64	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.37	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.6	3.0	0.4	0.3
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.81	0.37	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.11	0.31	4.07	1.87	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.17	0.54	0.07	0.06
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.0	2.8	0.4	0.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.05	0.12	1.57	0.10	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.11	0.31	3.95	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.76	0.05	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.5	6.3	0.4	0.1	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.02	0.07	0.84	0.05	0.02	0.01
Containerships 8,000 - 9,000 TEU	0.08	0.21	2.61	0.16	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.13	0.37	4.66	0.29	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.71	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.7	8.8	0.6	0.2	0.1

Mitigation measures include VSR and low sulfur fuel.

Table E1.2-Alt5-97. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.87	1.21	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.40	0.15	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.04	0.73	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.59	0.21	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	1.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.79	0.05	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.00	0.13	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.38	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.2	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.42	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.10	1.32	0.08	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.36	0.15	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.36	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.5	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt5-98. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.41	0.15	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.04	0.73	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.56	0.20	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	1.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.81	0.05	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.00	0.12	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.36	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.2	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.43	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.34	0.08	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.35	0.15	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.34	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.5	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt5-99. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation

Harbor Transit - Outbound

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.12	1.63	1.05	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.14	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.8	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.36	0.13	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.78	0.64	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.49	0.17	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.6	0.9	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.71	0.04	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.75	0.11	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.32	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.8	0.2	0.1	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.38	0.02	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.03	0.09	1.18	0.07	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.06	0.13	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.30	0.02	0.01	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.9	0.2	0.1	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt5-100. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.07	0.87	0.56	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	0.6	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.19	0.07	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.95	0.34	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.26	0.09	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.4	0.5	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.38	0.02	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.93	0.06	0.02	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.17	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.5	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.02	0.20	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.63	0.04	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.03	0.09	1.10	0.07	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.16	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt5-101. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.14	1.86	1.20	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.24	0.16	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.03	0.41	0.15	0.02	0.02
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.04	0.73	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.56	0.20	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	3.0	1.1	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.06	0.81	0.05	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.00	0.12	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.36	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.3	3.2	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.03	0.43	0.03	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.34	0.08	0.03	0.02
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.35	0.15	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.34	0.02	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.4	4.5	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt5-102. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Hoteling**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.94	2.59	34.10	21.99	2.72	2.17
Containerships 3,000 - 5,000 TEU	0.12	0.33	4.31	2.78	0.34	0.27
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	2.9	38.4	24.8	3.1	2.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.11	1.36	0.49	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.89	1.76	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.04	0.10	1.32	0.47	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.6	7.6	2.7	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Mitigation measures include AMP and low sulfur fuel (for non-AMP ships).

Table E1.2-Alt5-103. Annual Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.38	4.99	3.22	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.85	0.55	0.07	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	5.8	3.8	0.5	0.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.03	0.08	1.01	0.36	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.45	1.96	0.27	0.22
Containerships 3,000 - 5,000 TEU	0.06	0.15	1.96	0.70	0.10	0.08
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.4	3.0	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.06	0.16	1.98	0.12	0.04	0.03
Containerships 5,000 - 6,000 TEU	0.15	0.42	5.34	0.33	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.04	0.10	1.28	0.08	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.7	8.6	0.5	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.03	0.08	1.06	0.07	0.02	0.02
Containerships 8,000 - 9,000 TEU	0.10	0.26	3.31	0.21	0.07	0.05
Containerships 5,000 - 6,000 TEU	0.18	0.50	6.29	0.39	0.13	0.10
Containerships 3,000 - 5,000 TEU	0.03	0.09	1.19	0.07	0.02	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.3	0.9	11.9	0.7	0.2	0.2

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt5-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.2	6.1	81.1	112.6	11.4	9.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.1	81.1	112.6	11.4	9.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.2	6.1	76.6	4.8	1.5	1.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.1	76.6	4.8	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.2	6.1	76.6	4.8	1.5	1.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.2	6.1	76.6	4.8	1.5	1.2

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt5-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.9	7.9	106.2	147.6	15.0	12.0
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	7.9	106.2	147.6	15.0	12.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.9	7.9	100.4	6.3	2.0	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	7.9	100.4	6.3	2.0	1.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.9	7.9	100.4	6.3	2.0	1.6
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.9	7.9	100.4	6.3	2.0	1.6

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt5-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	53.8	74.7	7.6	6.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	53.8	74.7	7.6	6.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.0	50.9	3.2	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	50.9	3.2	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.0	50.9	3.2	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.0	50.9	3.2	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt5-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	109.4	152.0	15.4	12.3
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	109.4	152.0	15.4	12.3
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	3.0	8.2	103.4	6.5	2.1	1.6
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	103.4	6.5	2.1	1.6
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	3.0	8.2	103.4	6.5	2.1	1.6
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	3.0	8.2	103.4	6.5	2.1	1.6

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt5-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt5-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	51.0	70.9	7.2	5.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	51.0	70.9	7.2	5.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.4	3.8	48.3	3.0	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	48.3	3.0	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.4	3.8	48.3	3.0	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.8	48.3	3.0	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt5-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	54.7	76.0	7.7	6.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	54.7	76.0	7.7	6.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.5	4.1	51.7	3.2	1.0	0.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	51.7	3.2	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.5	4.1	51.7	3.2	1.0	0.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.1	51.7	3.2	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt5-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation
Hoteling**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	33.5	92.2	1,232.5	1,712.9	173.7	139.0
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.5	92.2	1,232.5	1,712.9	173.7	139.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.
and they do not use AMP.

(2) For 2015 and 2030, all ships are assumed to use AMP.

Table E1.2-Alt5-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 5 with Mitigation Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-Alt5-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt5-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt5-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.09	0.56	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.7	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.10	0.34	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.05	0.17	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.6	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.09	0.06	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.05	0.03	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.11	0.07	0.02	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt5-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.09	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.05	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt5-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.13	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.03	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.08	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-Alt5-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.02	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt5-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.15	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.04	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.09	0.01	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.05	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt5-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Hoteling**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	0.33	3.34	20.63	1.08	0.86
Containerships 3,000 - 5,000 TEU	0.03	0.06	0.59	3.63	0.19	0.15
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	3.9	24.3	1.3	1.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.05	0.47	1.66	0.11	0.09
Containerships 5,000 - 6,000 TEU	0.10	0.19	1.89	6.63	0.45	0.36
Containerships 3,000 - 5,000 TEU	0.04	0.07	0.71	2.48	0.17	0.14
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	3.1	10.8	0.7	0.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.04	0.09	0.85	0.55	0.13	0.10
Containerships 5,000 - 6,000 TEU	0.09	0.18	1.70	1.09	0.26	0.21
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.42	0.27	0.06	0.05
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	3.0	1.9	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.02	0.04	0.38	0.25	0.06	0.05
Containerships 8,000 - 9,000 TEU	0.05	0.11	1.03	0.66	0.16	0.13
Containerships 5,000 - 6,000 TEU	0.08	0.16	1.47	0.95	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.02	0.03	0.30	0.19	0.05	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.3	3.2	2.1	0.5	0.4

Boilers are assumed to operate during hoteling regardless of whether the ship uses AMP.

Mitigation measures include low sulfur fuel.

Table E1.2-Alt5-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.20	1.21	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.05	0.29	0.02	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	1.5	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.00	0.04	0.12	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.21	0.74	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.11	0.37	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	1.2	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.07	0.04	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.20	0.13	0.03	0.02
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.3	0.2	0.1	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.00	0.04	0.02	0.01	0.00
Containerships 8,000 - 9,000 TEU	0.01	0.01	0.11	0.07	0.02	0.01
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.24	0.15	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.04	0.01	0.01
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.4	0.3	0.1	0.1

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

Table E1.2-Alt5-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt5-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt5-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.0	1.3	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.1	0.2	2.0	1.3	0.3	0.2
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.0	1.3	0.3	0.2

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt5-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt5-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt5-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt5-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt5-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation
Hoteling**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.1	4.2	44.0	575.0	23.2	18.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	44.0	575.0	23.2	18.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	2.1	4.2	39.6	25.6	6.0	4.8
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	39.6	25.6	6.0	4.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	2.1	4.2	39.6	25.6	6.0	4.8
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	4.2	39.6	25.6	6.0	4.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt5-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 5 with Mitigation Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt5-131. Annual Emissions from Tugboat Main Engine - Alternative 5 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.41	2.67	0.18	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.10	0.64	0.04	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.5	3.3	0.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.01	0.08	0.46	0.00	0.01	0.01
Containerships 5,000 - 6,000 TEU	0.07	0.46	2.77	0.00	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.03	0.23	1.38	0.00	0.04	0.04
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.8	4.6	0.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.02	0.15	0.82	0.00	0.03	0.03
Containerships 5,000 - 6,000 TEU	0.07	0.46	2.45	0.00	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.15	0.82	0.00	0.03	0.03
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.8	4.1	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.01	0.08	0.32	0.00	0.01	0.01
Containerships 8,000 - 9,000 TEU	0.04	0.25	1.01	0.00	0.05	0.04
Containerships 5,000 - 6,000 TEU	0.08	0.54	2.15	0.00	0.10	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.14	0.57	0.00	0.03	0.02
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	1.0	4.1	0.0	0.2	0.2

Table E1.2-Alt5-132. Max Daily Emissions from Tugboat Main Engine - Alternative 5

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	59.10	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	59.1	0.0	1.8	1.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	1.40	9.78	52.39	0.03	1.83	1.69
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	52.4	0.0	1.8	1.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	1.40	9.78	38.99	0.03	1.74	1.60
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	9.8	39.0	0.0	1.7	1.6

Table E1.2-Alt5-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 5 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.01	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.0	0.2	0.0	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.03	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.18	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.02	0.09	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.3	0.0	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.00	0.01	0.06	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.03	0.17	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.06	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.3	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.00	0.01	0.02	0.00	0.00	0.00
Containerships 8,000 - 9,000 TEU	0.00	0.02	0.07	0.00	0.00	0.00
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.15	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.04	0.00	0.00	0.00
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.3	0.0	0.0	0.0

Table E1.2-Alt5-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 5

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.75	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.8	0.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.08	0.69	3.66	0.00	0.13	0.13
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	3.7	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.08	0.69	2.79	0.00	0.11	0.11
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	2.8	0.0	0.1	0.1

Table E1.2-Alt5-135. Annual Emissions from AMP Electricity Consumption - Alternative 5 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.8	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.2	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.36	2.08	0.22	0.07	0.07
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.1	0.5	0.0	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.6	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.4	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.02	0.44	2.51	0.26	0.09	0.09
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.0	0.2	0.9	0.1	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.7	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.3	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.03	0.51	2.92	0.30	0.10	0.10
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.0	0.1	0.4	0.0	0.0	0.0
Containerships 8,000 - 9,000 TEU	0.0	0.2	1.1	0.1	0.0	0.0
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.5	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.2	0.0	0.0	0.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.03	0.56	3.23	0.34	0.11	0.11

Note: These emissions represent regional power plant emissions associated with AMP generation.

Table E1.2-Alt5-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 5 with Mitigation

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	0.4	7.6	43.7	4.6	1.5	1.5
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	7.6	43.7	4.6	1.5	1.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	0.4	7.6	43.7	4.6	1.5	1.5
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.4	7.6	43.7	4.6	1.5	1.5

Notes: (1) These emissions represent regional power plant emissions associated with AMP generation.

(2) Peak day conditions do not use AMP during 2005 and 2010.

Table E1.2-Alt5-137. Summary of Annual Marine Vessel Emissions with Mitigation

Alternative 5 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	1.9	4.5	57.6	33.9	4.8	3.8
Ships - 20 mile to PA	1.7	3.9	42.5	24.4	3.7	3.0
Ships - PA	0.7	1.5	12.1	6.5	1.2	0.9
Ships - Harbor Transit	0.6	0.9	7.8	3.6	0.8	0.7
Ships - Turning & Docking	0.6	0.7	6.2	2.6	0.7	0.5
Ships - Anchoring	0.2	0.5	6.1	5.3	0.5	0.4
Ships - Hoteling	1.3	3.3	42.3	49.0	4.3	3.5
AMP - Hoteling	0.0	0.4	2.1	0.2	0.1	0.1
Tugboats	0.1	0.5	3.5	0.2	0.1	0.1
Total	7.1	16.2	180.2	125.9	16.3	13.0
Project Year 2010						
Ships - AQMD to 20 mile	1.5	3.4	26.0	9.3	1.7	1.4
Ships - 20 mile to PA	2.0	4.4	34.1	12.2	2.3	1.8
Ships - PA	1.1	2.2	15.3	5.3	1.1	0.8
Ships - Harbor Transit	0.9	1.4	10.4	2.9	0.7	0.6
Ships - Turning & Docking	0.8	1.1	8.2	2.1	0.6	0.5
Ships - Anchoring	0.3	0.7	8.8	4.3	0.5	0.4
Ships - Hoteling	0.4	0.9	10.6	13.5	1.1	0.9
AMP - Hoteling	0.0	0.4	2.5	0.3	0.1	0.1
Tugboats	0.1	0.8	4.9	0.0	0.2	0.1
Total	7.1	15.3	120.9	49.9	8.2	6.6
Project Year 2015						
Ships - AQMD to 20 mile	1.6	3.6	22.4	1.3	0.8	0.6
Ships - 20 mile to PA	2.1	4.7	29.3	1.7	1.0	0.8
Ships - PA	1.2	2.4	13.3	0.8	0.5	0.4
Ships - Harbor Transit	1.0	1.5	9.9	0.5	0.3	0.3
Ships - Turning & Docking	0.9	1.2	7.9	0.4	0.3	0.2
Ships - Anchoring	0.3	0.7	8.9	0.8	0.2	0.2
Ships - Hoteling	0.2	0.3	3.0	1.9	0.5	0.4
AMP - Hoteling	0.0	0.5	2.9	0.3	0.1	0.1
Tugboats	0.1	0.8	4.4	0.0	0.2	0.1
Total	7.4	15.7	102.0	7.6	3.9	3.1
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	2.3	5.1	31.6	1.8	1.1	0.9
Ships - 20 mile to PA	3.0	6.7	41.4	2.4	1.5	1.2
Ships - PA	1.7	3.4	18.9	1.1	0.7	0.6
Ships - Harbor Transit	1.5	2.2	14.0	0.7	0.5	0.4
Ships - Turning & Docking	1.3	1.7	11.1	0.5	0.4	0.3
Ships - Anchoring	0.4	1.0	12.3	1.0	0.3	0.2
Ships - Hoteling	0.2	0.3	3.2	2.1	0.5	0.4
AMP - Hoteling	0.0	0.6	3.2	0.3	0.1	0.1
Tugboats	0.2	1.1	4.3	0.0	0.2	0.2
Total	10.5	22.0	140.1	10.0	5.3	4.2

AMP Hoteling emissions include the emissions generated by regional power plants to generate the electricity consumed by the ships while hoteling.

**Table E1.2-Alt5-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation
Alternative 5 with Mitigation**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	28	61	551	502	69	55
Ships - 20 mile to PA	37	80	722	658	90	72
Ships - PA	20	41	324	303	44	35
Ships - Harbor Transit	20	27	226	194	36	29
Ships - Turning & Docking	20	26	221	186	36	28
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	36	96	1,276	2,288	197	158
AMP - Hoteling	-	-	-	-	-	-
Tugboats	1	10	63	0	2	2
Total	162	343	3,384	4,131	473	379
Project Year 2015						
Ships - AQMD to 20 mile	28	61	373	21	13	11
Ships - 20 mile to PA	37	80	488	28	17	14
Ships - PA	20	41	222	13	8	7
Ships - Harbor Transit	20	27	177	8	6	5
Ships - Turning & Docking	20	26	173	8	6	5
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	2	4	40	26	6	5
AMP - Hoteling	0	8	44	5	2	2
Tugboats	1	10	56	0	2	2
Total	129	259	1,573	108	61	49
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	30	65	394	22	14	11
Ships - 20 mile to PA	39	86	516	29	18	15
Ships - PA	21	43	234	13	9	7
Ships - Harbor Transit	21	29	183	8	7	5
Ships - Turning & Docking	21	28	178	8	7	5
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	2	4	40	26	6	5
AMP - Hoteling	0	8	44	5	2	2
Tugboats	1	10	42	0	2	2
Total	137	273	1,629	112	64	52

**Table E1.2-Alt5-143. Truck Trips and Mileage for the Berth 97-109 Terminal
Alternative 5**

<i>Study Year</i>	<i>Annual Trips</i>	<i>Annual VMT Off-Terminal</i>	<i>Peak Day Factor</i>
2005	417,702	11,271,936	0.00366
2010	431,771	12,745,826	0.00366
2015	445,840	14,219,716	0.00366
2030	535,782	18,057,718	0.00335
2045	535,782	18,057,718	0.00335

Source: Iteris 2007.

Year 2010 values are interpolated.

Table E1.2-Alt5-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Alternative 5

<i>Activity/Project Scenario</i>	<i>Idling Time/ Trip (Hrs) (2)</i>	<i>Miles/ Trip (1)</i>	<i>Idling Hrs/ Year</i>	<i>Miles/ Year</i>
<i>On-Terminal</i>				
Year 2005	0.17	0.75	69,617	313,276
Year 2010	0.17	0.75	71,962	323,828
Year 2015	0.17	0.75	74,307	334,380
Year 2030	0.17	0.75	89,297	401,836
Year 2045	0.17	0.75	89,297	401,836
<i>Off-Terminal</i>				
Year 2005	0.25	--	104,425	11,271,936
Year 2010	0.25	--	107,943	12,745,826
Year 2015	0.25	--	111,460	14,219,716
Year 2030	0.25	--	133,945	18,057,718
Year 2045	0.25	--	133,945	18,057,718

Notes: (1) On-terminal mileage/trip based upon terminal-specific data provided by Starcrest (2007). Round trip distance of 1.5 miles is divided by 2 to produce the mileage per one-way trip.

(2) Terminal-specific on-terminal idling time of 20 minutes per round trip is provided by Starcrest (2007). Idling time is divided by 2 to produce the average idling time per one-way trip.

The off-terminal idling time assumes 30 minutes of idling time per round trip (0.25 hr per one-way trip).

Table E1.2-Alt5-147. Annual Truck Emissions for the Berths 97-109 Terminal

Alternative 5

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	0.95	3.67	8.39	0.00	0.14	0.13
Year 2010 - Driving	2.47	6.98	9.62	0.01	3.55	1.07
Subtotal	3.42	10.65	18.01	0.02	3.68	1.19
<i>Project Year 2015</i>						
Year 2015 - Idling	0.79	3.57	9.39	0.01	0.08	0.07
Year 2015 - Driving	1.48	3.99	5.68	0.01	3.31	0.78
Subtotal	2.27	7.57	15.07	0.02	3.39	0.85
<i>Project Year 2030</i>						
Year 2030 - Idling	0.76	4.05	12.00	0.01	0.02	0.02
Year 2030 - Driving	0.63	1.73	2.54	0.01	3.68	0.66
Subtotal	1.39	5.78	14.54	0.02	3.69	0.67
<i>Project Year 2045</i>						
Year 2045 - Idling	0.75	4.04	12.04	0.01	0.01	0.01
Year 2045 - Driving	0.58	1.59	2.35	0.01	3.67	0.65
Subtotal	1.33	5.63	14.38	0.02	3.68	0.66
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	1.42	5.51	12.59	0.01	0.20	0.19
Year 2010 - Driving	25.95	122.37	237.25	0.27	16.39	10.77
Subtotal	27.38	127.88	249.84	0.27	16.59	10.96
<i>Project Year 2015</i>						
Year 2015 - Idling	1.19	5.36	14.08	0.01	0.12	0.11
Year 2015 - Driving	17.06	74.83	146.10	0.30	12.45	6.65
Subtotal	18.25	80.19	160.19	0.31	12.57	6.76
<i>Project Year 2030</i>						
Year 2030 - Idling	1.13	6.08	18.00	0.01	0.02	0.02
Year 2030 - Driving	8.40	34.70	65.65	0.39	10.15	3.22
Subtotal	9.53	40.78	83.65	0.40	10.18	3.24
<i>Project Year 2045</i>						
Year 2045 - Idling	1.12	6.06	18.05	0.01	0.02	0.02
Year 2045 - Driving	7.76	31.96	60.57	0.39	9.97	3.06
Subtotal	8.88	38.02	78.62	0.40	9.99	3.07

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt5-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	30.8	138.5	267.8	0.3	20.3	12.1
Year 2015	20.5	87.8	175.3	0.3	16.0	7.6
Year 2030	10.9	46.6	98.2	0.4	13.9	3.9
Year 2045	10.2	43.7	93.0	0.4	13.7	3.7

Table E1.2-Alt5-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	225	1,014	1,961	2	148	89
Year 2015	150	642	1,283	2	117	56
Year 2030	73	312	658	3	93	26
Year 2045	68	293	624	3	92	25

**Table E1.2-Alt5-150. Annual Truck Emissions for the Berths 97-109 Terminal
Alternative 5 with Mitigation**

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.16	3.81	7.22	0.04	0.20	0.19
Year 2005 - Driving	3.02	9.21	11.73	0.09	3.78	1.35
Subtotal	4.19	13.02	18.95	0.12	3.99	1.54
<i>Project Year 2010</i>						
Year 2010 - Idling	0.73	3.40	9.19	0.00	0.06	0.05
Year 2010 - Driving	1.34	3.75	6.23	0.01	3.21	0.76
Subtotal	2.07	7.15	15.42	0.02	3.26	0.81
<i>Project Year 2015</i>						
Year 2015 - Idling	0.37	1.57	4.93	0.00	0.01	0.01
Year 2015 - Driving	0.25	0.70	1.45	0.00	3.05	0.54
Subtotal	0.63	2.27	6.39	0.00	3.07	0.56
<i>Project Year 2030</i>						
Year 2030 - Idling	0.49	1.49	5.70	0.00	0.03	0.03
Year 2030 - Driving	0.25	0.73	2.09	0.00	3.69	0.67
Subtotal	0.73	2.22	7.79	0.00	3.72	0.70
<i>Project Year 2045</i>						
Year 2045 - Idling	0.49	1.49	5.70	0.00	0.03	0.03
Year 2045 - Driving	0.25	0.73	2.09	0.00	3.69	0.67
Subtotal	0.73	2.22	7.79	0.00	3.72	0.70
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.74	5.72	10.83	0.06	0.31	0.28
Year 2005 - Driving	28.50	144.40	273.72	1.94	19.20	13.86
Subtotal	30.25	150.12	284.56	1.99	19.51	14.14
<i>Project Year 2010</i>						
Year 2010 - Idling	1.09	5.10	13.78	0.01	0.08	0.08
Year 2010 - Driving	14.32	65.78	147.95	0.27	10.93	5.74
Subtotal	15.42	70.88	161.73	0.28	11.01	5.81
<i>Project Year 2015</i>						
Year 2015 - Idling	0.56	2.36	7.40	0.00	0.02	0.02
Year 2015 - Driving	5.95	19.80	47.67	0.09	7.78	2.41
Subtotal	6.51	22.16	55.07	0.09	7.80	2.43
<i>Project Year 2030</i>						
Year 2030 - Idling	0.73	2.23	8.55	0.00	0.05	0.05
Year 2030 - Driving	11.11	32.94	93.77	0.00	10.85	4.06
Subtotal	11.84	35.18	102.32	0.00	10.89	4.10
<i>Project Year 2045</i>						
Year 2045 - Idling	0.73	2.23	8.55	0.00	0.05	0.05
Year 2045 - Driving	11.11	32.94	93.77	0.00	10.85	4.06
Subtotal	11.84	35.18	102.32	0.00	10.89	4.10

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt5-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	34.4	163.1	303.5	2.1	23.5	15.7
Year 2010	17.5	78.0	177.2	0.3	14.3	6.6
Year 2015	7.1	24.4	61.5	0.1	10.9	3.0
Year 2030	12.6	37.4	110.1	-	14.6	4.8
Year 2045	12.6	37.4	110.1	-	14.6	4.8

Table E1.2-Alt5-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	252	1,194	2,222	16	172	115
Year 2010	128	571	1,297	2	105	48
Year 2015	52	179	450	1	80	22
Year 2030	84	251	738	-	98	32
Year 2045	84	251	738	-	98	32

Table E1.2-Alt5-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 5

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	1.2	13.0	1.7	0.0	1.5	0.3
Year 2010	0.8	9.3	1.2	0.0	1.7	0.3
Year 2015	0.6	6.8	0.9	0.0	1.9	0.4
Year 2030	0.4	4.0	0.4	0.0	2.1	0.4
Year 2045	0.3	3.3	0.3	0.0	2.2	0.4

Table E1.2-Alt5-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 5

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	7.7	87.1	11.5	0.1	10.1	2.0
Year 2010	5.2	62.6	8.3	0.1	11.3	2.2
Year 2015	3.7	45.8	6.0	0.1	12.5	2.4
Year 2030	2.4	26.5	2.9	0.1	14.3	2.8
Year 2045	2.0	22.2	2.2	0.1	14.4	2.8

Table E1.2-Alt5-155. Train Trips Associated with the Alternative 5

<i>Year</i>	<i>Round Trips</i>	
	<i>Annual</i>	<i>Peak Day</i>
Berths 121-131 ICTF		
2005	113	1
2010	159	1
2015	205	1
2030	232	1
2045	232	1
Off-Dock Railyards		
2005	111	1
2010	91	1
2015	71	1
2030	100	1
2045	100	1

Table E1.2-Alt5-162. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt5-163. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.02	3.10	0.14	0.01	0.01	0.01
Top Picks (1)	0.08	0.78	3.18	0.00	0.09	0.08
Line Haul Locomotive (SCAB) - Road Haul	1.29	4.17	22.90	0.50	0.75	0.69
Line Haul Locomotive (near Port) - Road Haul	0.07	0.22	1.20	0.03	0.04	0.04
Line Haul Locomotive at Railyard	0.07	0.22	1.18	0.03	0.04	0.04
Yard Locomotive - Switching	0.03	0.12	0.47	0.00	0.01	0.01
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.16	0.05	0.00	0.00	0.00
Top Picks (1)	0.03	0.29	1.19	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.29	4.17	22.90	0.50	0.75	0.69
Line Haul Locomotive (near Port) - Road Haul	0.07	0.22	1.20	0.03	0.04	0.04
Line Haul Locomotive at Railyard	0.04	0.14	0.79	0.02	0.03	0.02
Yard Locomotive - Switching	0.03	0.12	0.47	0.00	0.01	0.01
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	1.77	0.08	0.00	0.00	0.00
Top Picks	0.07	0.45	1.84	0.00	0.06	0.05
Line Haul Locomotive (SCAB) - Road Haul	0.59	1.91	10.46	0.23	0.34	0.32
Line Haul Locomotive at Railyard	0.04	0.12	0.67	0.01	0.02	0.02
Yard Locomotive - Switching	0.04	0.07	0.54	0.00	0.02	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.00	0.66	0.03	0.00	0.00	0.00
Top Picks	0.03	0.17	0.69	0.00	0.02	0.02
Line Haul Locomotive (SCAB) - Road Haul	0.59	1.91	10.46	0.23	0.34	0.32
Line Haul Locomotive at Railyard	0.03	0.08	0.45	0.01	0.01	0.01
Yard Locomotive - Switching	0.04	0.07	0.54	0.00	0.02	0.01

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-164. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.26	0.19	0.01	0.01	0.01
Top Picks (1)	0.11	1.07	4.34	0.00	0.13	0.12
Line Haul Locomotive (SCAB) - Road Haul	1.54	5.38	27.56	0.02	0.83	0.77
Line Haul Locomotive (near Port) - Road Haul	0.08	0.28	1.44	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.08	0.28	1.42	0.00	0.04	0.04
Yard Locomotive - Switching (2)	0.04	0.15	0.61	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.60	0.07	0.00	0.00	0.00
Top Picks (1)	0.04	0.40	1.63	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.54	5.38	27.56	0.02	0.83	0.77
Line Haul Locomotive (near Port) - Road Haul	0.08	0.28	1.44	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.05	0.18	0.95	0.00	0.03	0.03
Yard Locomotive - Switching	0.04	0.15	0.61	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	1.47	0.06	0.00	0.00	0.00
Top Picks	0.04	0.37	1.50	0.00	0.04	0.04
Line Haul Locomotive (SCAB) - Road Haul	0.42	1.49	7.61	0.01	0.23	0.21
Line Haul Locomotive at Railyard	0.03	0.10	0.49	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.05	0.37	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.00	0.55	0.02	0.00	0.00	0.00
Top Picks	0.01	0.14	0.56	0.00	0.02	0.02
Line Haul Locomotive (SCAB) - Road Haul	0.42	1.49	7.61	0.01	0.23	0.21
Line Haul Locomotive at Railyard	0.02	0.06	0.33	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.05	0.37	0.00	0.01	0.01

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-165. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.81	0.21	0.01	0.01	0.01
Top Picks (1)	0.05	0.64	0.56	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.37	6.07	25.46	0.02	0.68	0.63
Line Haul Locomotive (near Port) - Road Haul	0.07	0.32	1.33	0.00	0.04	0.03
Line Haul Locomotive at Railyard	0.07	0.31	1.31	0.00	0.04	0.03
Yard Locomotive - Switching (2)	0.05	0.17	0.68	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.80	0.08	0.00	0.01	0.00
Top Picks (1)	0.02	0.24	0.21	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.37	6.07	25.46	0.02	0.68	0.63
Line Haul Locomotive (near Port) - Road Haul	0.07	0.32	1.33	0.00	0.04	0.03
Line Haul Locomotive at Railyard	0.05	0.21	0.88	0.00	0.02	0.02
Yard Locomotive - Switching	0.05	0.17	0.68	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	2.07	0.09	0.00	0.01	0.01
Top Picks	0.02	0.28	0.24	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.47	2.09	8.77	0.01	0.23	0.22
Line Haul Locomotive at Railyard	0.03	0.13	0.57	0.00	0.02	0.01
Yard Locomotive - Switching	0.03	0.07	0.42	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	0.78	0.03	0.00	0.00	0.00
Top Picks	0.01	0.10	0.09	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.47	2.09	8.77	0.01	0.23	0.22
Line Haul Locomotive at Railyard	0.02	0.09	0.38	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.07	0.42	0.00	0.01	0.01

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-166. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.81	0.21	0.01	0.01	0.01
Top Picks (1)	0.05	0.64	0.56	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.23	6.07	23.62	0.02	0.58	0.53
Line Haul Locomotive (near Port) - Road Haul	0.06	0.32	1.24	0.00	0.03	0.03
Line Haul Locomotive at Railyard	0.06	0.31	1.22	0.00	0.03	0.03
Yard Locomotive - Switching (2)	0.05	0.17	0.68	0.00	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.80	0.08	0.00	0.01	0.00
Top Picks (1)	0.02	0.24	0.21	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.23	6.07	23.62	0.02	0.58	0.53
Line Haul Locomotive (near Port) - Road Haul	0.06	0.32	1.24	0.00	0.03	0.03
Line Haul Locomotive at Railyard	0.04	0.21	0.81	0.00	0.02	0.02
Yard Locomotive - Switching	0.05	0.17	0.68	0.00	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	2.07	0.09	0.00	0.01	0.01
Top Picks	0.02	0.28	0.24	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.42	2.09	8.14	0.01	0.20	0.18
Line Haul Locomotive at Railyard	0.03	0.13	0.52	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.07	0.35	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	0.78	0.03	0.00	0.00	0.00
Top Picks	0.01	0.10	0.09	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.42	2.09	8.14	0.01	0.20	0.18
Line Haul Locomotive at Railyard	0.02	0.09	0.35	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.07	0.35	0.00	0.01	0.01

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2005

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt5-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2010

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2015

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2030

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 5 - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt5-172. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.64	2.36	5.72	0.05	0.31	0.28
Top Picks (1)	0.06	0.17	1.72	0.02	0.04	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.09	0.26	1.76	0.12	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.24	0.88	2.15	0.02	0.12	0.11
Top Picks (1)	0.02	0.06	0.64	0.01	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.07	2.97	20.44	1.36	0.71	0.66
Line Haul Locomotive (near Port) - Road Haul	0.06	0.16	1.07	0.07	0.04	0.03
Line Haul Locomotive at Railyard	0.04	0.10	0.70	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.80	0.01	0.02	0.02
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.63	2.31	5.60	0.05	0.30	0.28
Top Picks	0.17	0.51	2.10	0.02	0.07	0.07
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.09	0.25	1.72	0.11	0.06	0.06
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.24	0.87	2.10	0.02	0.11	0.10
Top Picks	0.06	0.19	0.79	0.01	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.84	2.33	16.02	1.07	0.56	0.51
Line Haul Locomotive at Railyard	0.04	0.10	0.69	0.05	0.02	0.02
Yard Locomotive - Switching	0.05	0.08	0.79	0.01	0.02	0.02

**Table E1.2-Alt5-173. Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation - Year 2010**

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.02	3.10	0.14	0.01	0.01	0.01
Top Picks (1)	0.08	0.78	3.18	0.00	0.09	0.08
Line Haul Locomotive (SCAB) - Road Haul	1.29	4.17	22.90	0.50	0.75	0.69
Line Haul Locomotive (near Port) - Road Haul	0.07	0.22	1.20	0.03	0.04	0.04
Line Haul Locomotive at Railyard	0.07	0.22	1.18	0.03	0.04	0.04
Yard Locomotive - Switching	0.03	0.12	0.47	0.00	0.01	0.01
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.16	0.05	0.00	0.00	0.00
Top Picks (1)	0.03	0.29	1.19	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	1.29	4.17	22.90	0.50	0.75	0.69
Line Haul Locomotive (near Port) - Road Haul	0.07	0.22	1.20	0.03	0.04	0.04
Line Haul Locomotive at Railyard	0.04	0.14	0.79	0.02	0.03	0.02
Yard Locomotive - Switching	0.03	0.12	0.47	0.00	0.01	0.01
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	1.77	0.08	0.00	0.00	0.00
Top Picks	0.07	0.45	1.84	0.00	0.06	0.05
Line Haul Locomotive (SCAB) - Road Haul	0.59	1.91	10.46	0.23	0.34	0.32
Line Haul Locomotive at Railyard	0.04	0.12	0.67	0.01	0.02	0.02
Yard Locomotive - Switching	0.04	0.07	0.54	0.00	0.02	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.00	0.66	0.03	0.00	0.00	0.00
Top Picks	0.03	0.17	0.69	0.00	0.02	0.02
Line Haul Locomotive (SCAB) - Road Haul	0.59	1.91	10.46	0.23	0.34	0.32
Line Haul Locomotive at Railyard	0.03	0.08	0.45	0.01	0.01	0.01
Yard Locomotive - Switching	0.04	0.07	0.54	0.00	0.02	0.01

Table E1.2-Alt5-174. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 with Mitigation - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.26	0.19	0.01	0.01	0.01
Top Picks (1)	0.03	0.51	0.45	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.54	5.38	27.56	0.02	0.83	0.77
Line Haul Locomotive (near Port) - Road Haul	0.08	0.28	1.44	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.08	0.28	1.42	0.00	0.04	0.04
Yard Locomotive - Switching (1)	0.04	0.15	0.61	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.60	0.07	0.00	0.00	0.00
Top Picks	0.01	0.19	0.17	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.54	5.38	27.56	0.02	0.83	0.77
Line Haul Locomotive (near Port) - Road Haul	0.08	0.28	1.44	0.00	0.04	0.04
Line Haul Locomotive at Railyard	0.05	0.18	0.95	0.00	0.03	0.03
Yard Locomotive - Switching (1)	0.04	0.15	0.61	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	1.47	0.06	0.00	0.00	0.00
Top Picks	0.04	0.37	1.50	0.00	0.04	0.04
Line Haul Locomotive (SCAB) - Road Haul	0.42	1.49	7.61	0.01	0.23	0.21
Line Haul Locomotive at Railyard	0.03	0.10	0.49	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.05	0.37	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.00	0.55	0.02	0.00	0.00	0.00
Top Picks	0.01	0.14	0.56	0.00	0.02	0.02
Line Haul Locomotive (SCAB) - Road Haul	0.42	1.49	7.61	0.01	0.23	0.21
Line Haul Locomotive at Railyard	0.02	0.06	0.33	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.05	0.37	0.00	0.01	0.01

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt5-175. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.81	0.21	0.01	0.01	0.01
Top Picks (1)	0.05	0.64	0.56	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.37	6.07	25.46	0.02	0.68	0.63
Line Haul Locomotive (near Port) - Road Haul	0.07	0.32	1.33	0.00	0.04	0.03
Line Haul Locomotive at Railyard	0.07	0.31	1.31	0.00	0.04	0.03
Yard Locomotive - Switching (1)	0.05	0.17	0.68	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.80	0.08	0.00	0.01	0.00
Top Picks	0.02	0.24	0.21	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.37	6.07	25.46	0.02	0.68	0.63
Line Haul Locomotive (near Port) - Road Haul	0.07	0.32	1.33	0.00	0.04	0.03
Line Haul Locomotive at Railyard	0.05	0.21	0.88	0.00	0.02	0.02
Yard Locomotive - Switching (1)	0.05	0.17	0.68	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	2.07	0.09	0.00	0.01	0.01
Top Picks	0.02	0.28	0.24	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.47	2.09	8.77	0.01	0.23	0.22
Line Haul Locomotive at Railyard	0.03	0.13	0.57	0.00	0.02	0.01
Yard Locomotive - Switching	0.03	0.07	0.42	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	0.78	0.03	0.00	0.00	0.00
Top Picks	0.01	0.10	0.09	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.47	2.09	8.77	0.01	0.23	0.22
Line Haul Locomotive at Railyard	0.02	0.09	0.38	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.07	0.42	0.00	0.01	0.01

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt5-176. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 5 with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.03	4.81	0.21	0.01	0.01	0.01
Top Picks (1)	0.05	0.64	0.56	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.23	6.07	23.62	0.02	0.58	0.53
Line Haul Locomotive (near Port) - Road Haul	0.06	0.32	1.24	0.00	0.03	0.03
Line Haul Locomotive at Railyard	0.06	0.31	1.22	0.00	0.03	0.03
Yard Locomotive - Switching (1)	0.05	0.17	0.68	0.00	0.00	0.00
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.01	1.80	0.08	0.00	0.01	0.00
Top Picks	0.02	0.24	0.21	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.23	6.07	23.62	0.02	0.58	0.53
Line Haul Locomotive (near Port) - Road Haul	0.06	0.32	1.24	0.00	0.03	0.03
Line Haul Locomotive at Railyard	0.04	0.21	0.81	0.00	0.02	0.02
Yard Locomotive - Switching (1)	0.05	0.17	0.68	0.00	0.00	0.00
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.01	2.07	0.09	0.00	0.01	0.01
Top Picks	0.02	0.28	0.24	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.42	2.09	8.14	0.01	0.20	0.18
Line Haul Locomotive at Railyard	0.03	0.13	0.52	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.07	0.35	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	0.78	0.03	0.00	0.00	0.00
Top Picks	0.01	0.10	0.09	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	0.42	2.09	8.14	0.01	0.20	0.18
Line Haul Locomotive at Railyard	0.02	0.09	0.35	0.00	0.01	0.01
Yard Locomotive - Switching	0.03	0.07	0.35	0.00	0.01	0.01

(1) DPF on yard locomotives at the on-dock railyard.

**Table E1.2-Alt5-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation - Year 2005**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks (1)	1.1	3.0	30.3	0.3	0.7	0.6
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Berths 121-131/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks (1)	0.4	1.1	11.4	0.1	0.3	0.2
Line Haul Locomotive (SCAB) - Road Haul	25.1	69.8	481.0	32.0	16.8	15.4
Line Haul Locomotive (near Port) - Road Haul	1.3	3.7	25.1	1.7	0.9	0.8
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.1	0.1	0.4	0.3
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

**Table E1.2-Alt5-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation - Year 2010**

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks (1)	1.0	9.7	39.9	0.0	1.1	1.0
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks (1)	0.4	3.7	15.0	0.0	0.4	0.4
Line Haul Locomotive (SCAB) - Road Haul	21.6	69.8	383.2	8.3	12.6	11.6
Line Haul Locomotive (near Port) - Road Haul	1.1	3.7	20.0	0.4	0.7	0.6
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.2	0.1
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

**Table E1.2-Alt5-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation - Year 2015**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.3	5.0	4.4	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	1.9	1.7	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	19.9	69.8	357.9	0.2	10.8	10.0
Line Haul Locomotive (near Port) - Road Haul	1.0	3.7	18.7	0.0	0.6	0.5
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

**Table E1.2-Alt5-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation - Year 2030**

<i>ICTF/Train Direction/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	15.7	69.8	292.7	0.2	7.8	7.2
Line Haul Locomotive (near Port) - Road Haul	0.8	3.7	15.3	0.0	0.4	0.4
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2

**Table E1.2-Alt5-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation - Year 2045**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks (1)	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching (2)	0.4	1.5	5.9	0.0	0.0	0.0
<i>Berths 121-131/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks (1)	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	14.1	69.8	271.6	0.2	6.6	6.1
Line Haul Locomotive (near Port) - Road Haul	0.7	3.7	14.2	0.0	0.3	0.3
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.4	1.5	5.9	0.0	0.0	0.0
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2

**Table E1.2-Alt5-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 5**

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.3	8.4	7.2	0.0	0.2	0.2
Trains	4.1	13.1	71.8	1.5	2.3	2.2
Total	4.3	21.5	79.0	1.5	2.6	2.4
<i>Project Year 2015</i>						
Railyard Equipment	0.3	9.8	8.4	0.0	0.3	0.2
Trains	4.2	14.8	75.5	0.1	2.3	2.1
Total	4.5	24.6	83.8	0.1	2.5	2.3
<i>Project Year 2030</i>						
Railyard Equipment	0.2	10.7	1.5	0.0	0.0	0.0
Trains	4.0	17.6	73.8	0.1	2.0	1.8
Total	4.2	28.3	75.3	0.1	2.0	1.9
<i>Project Year 2045</i>						
Railyard Equipment	0.2	10.7	1.5	0.0	0.0	0.0
Trains	3.6	17.6	68.5	0.1	1.7	1.5
Total	3.8	28.3	70.0	0.1	1.7	1.6

**Table E1.2-Alt5-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 5**

<i>Project Scenario/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	3.8	142.6	121.1	0.4	3.7	3.4
Trains	77.6	269.4	1,382.6	1.0	41.8	38.4
Total	81.4	411.9	1,503.7	1.3	45.5	41.9
<i>Project Year 2030</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	61.4	269.4	1,132.6	1.0	30.3	27.9
Total	63.3	398.6	1,150.7	1.3	30.9	28.4
<i>Project Year 2045</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	55.1	269.4	1,050.2	1.0	25.8	23.7
Total	56.9	398.6	1,068.3	1.3	26.3	24.2

**Table E1.2-Alt5-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation**

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	2.1	7.3	20.8	0.2	1.0	0.9
Trains	4.2	11.6	81.0	5.2	2.8	2.6
Total	6.3	19.0	101.8	5.4	3.8	3.5
<i>Project Year 2010</i>						
Railyard Equipment	0.3	8.4	7.2	0.0	0.2	0.2
Trains	4.1	13.1	71.8	1.5	2.3	2.2
Total	4.3	21.5	79.0	1.5	2.6	2.4
<i>Project Year 2015</i>						
Railyard Equipment	0.2	9.1	3.0	0.0	0.1	0.1
Trains	4.2	14.8	75.5	0.1	2.3	2.1
Total	4.4	23.8	78.5	0.1	2.3	2.2
<i>Project Year 2030</i>						
Railyard Equipment	0.2	10.7	1.5	0.0	0.0	0.0
Trains	4.0	17.6	73.8	0.1	1.9	1.8
Total	4.2	28.3	75.3	0.1	2.0	1.8
<i>Project Year 2045</i>						
Railyard Equipment	0.2	10.7	1.5	0.0	0.0	0.0
Trains	3.6	17.6	68.5	0.1	1.6	1.5
Total	3.8	28.3	70.0	0.1	1.7	1.6

**Table E1.2-Alt5-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions
Alternative 5 with Mitigation**

<i>Project Scenario/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	37.0	131.1	371.4	3.2	17.7	16.2
Trains	99.7	274.2	1,904.0	123.6	65.8	60.5
Total	136.7	405.3	2,275.4	126.7	83.4	76.8
<i>Project Year 2010</i>						
Railyard Equipment	4.3	134.0	115.1	0.4	3.4	3.2
Trains	83.8	269.4	1,480.8	31.4	48.5	44.6
Total	88.1	403.4	1,596.0	31.7	51.9	47.8
<i>Project Year 2015</i>						
Railyard Equipment	2.7	135.2	69.1	0.4	2.1	1.9
Trains	77.6	269.4	1,382.6	1.0	41.5	38.2
Total	80.3	404.5	1,451.7	1.3	43.6	40.1
<i>Project Year 2030</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	61.4	269.4	1,132.6	1.0	30.0	27.6
Total	63.3	398.6	1,150.7	1.3	30.6	28.1
<i>Project Year 2045</i>						
Railyard Equipment	1.8	129.2	18.2	0.4	0.5	0.5
Trains	55.1	269.4	1,050.2	1.0	25.5	23.4
Total	56.9	398.6	1,068.3	1.3	26.0	23.9

Table E1.2-AIt5-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 5

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>								
Forklift >120-175	223,897	FL175_U	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_U	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_U	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_U	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_U	0.41	1.45	4.03	0.03	0.19	0.18
Top pick >175-250	6,967,232	TH250_U	4.49	13.52	55.93	0.46	1.97	1.81
Yard tractor >120-175	23,953,325	YTD175_U	21.34	78.20	189.80	1.58	10.19	9.37
Other Equipment	165,929	OTHER_U	0.15	0.66	1.33	0.01	0.09	0.08
Total			28.1	100.8	274.0	2.3	13.3	12.2
<i>Project Year 2010</i>								
Forklift >120-175	247,886	FL175_U	0.11	1.01	2.46	0.00	0.09	0.08
Forklift >175-250	46,082	FL250_U	0.02	0.17	0.47	0.00	0.02	0.02
Forklift >25-50	82,109	FL50_U	0.12	0.63	0.61	0.00	0.06	0.05
RTG >175-250	3,441,260	RTG250_U	1.48	6.34	19.41	0.03	0.70	0.64
Side pick >120-175	471,032	SP175_U	0.23	1.67	4.62	0.00	0.18	0.16
Top pick >175-250	7,713,721	TH250_U	2.66	16.12	66.01	0.06	1.99	1.83
Yard tractor >120-175	26,519,752	YTD175_U	0.50	81.03	3.55	0.20	0.22	0.20
Other Equipment	183,707	OTHER_U	0.12	0.76	1.53	0.00	0.09	0.09
Total			5.3	107.7	98.7	0.3	3.4	3.1
<i>Project Year 2015</i>								
Forklift >120-175	275,873	FL175_U	0.09	1.19	2.79	0.00	0.10	0.10
Forklift >175-250	51,285	FL250_U	0.02	0.21	0.53	0.00	0.02	0.02
Forklift >25-50	91,379	FL50_U	0.09	0.75	0.70	0.00	0.06	0.06
RTG >175-250	3,829,789	RTG250_U	1.78	7.40	18.52	0.03	0.75	0.69
Side pick >120-175	524,213	SP175_U	0.18	1.95	5.36	0.00	0.20	0.19
Top pick >175-250	8,584,625	TH250_U	2.03	18.89	76.80	0.07	2.23	2.05
Yard tractor >120-175	29,513,918	YTD175_U	0.62	96.04	4.18	0.22	0.29	0.26
Other Equipment	204,448	OTHER_U	0.06	0.88	1.77	0.00	0.10	0.09
Total			4.9	127.3	110.7	0.3	3.7	3.4
<i>Project Year 2030</i>								
Forklift >120-175	349,839	FL175_U	0.03	1.18	0.55	0.00	0.01	0.00
Forklift >175-250	65,035	FL250_U	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	115,879	FL50_U	0.02	0.49	0.39	0.00	0.00	0.00
RTG >175-250	4,856,617	RTG250_U	0.40	5.59	4.86	0.04	0.07	0.07
Side pick >120-175	664,763	SP175_U	0.07	2.30	1.06	0.01	0.01	0.01
Top pick >175-250	10,886,300	TH250_U	0.92	12.76	11.06	0.08	0.17	0.16
Yard tractor >120-175	37,427,070	YTD175_U	0.79	121.79	5.30	0.28	0.36	0.33
Other Equipment	259,264	OTHER_U	0.03	0.93	0.60	0.00	0.00	0.00
Total			2.3	145.1	23.9	0.4	0.6	0.6
<i>Project Year 2045</i>								
Forklift >120-175	349,839	FL175_U	0.03	1.18	0.55	0.00	0.01	0.00
Forklift >175-250	65,035	FL250_U	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	115,879	FL50_U	0.02	0.49	0.39	0.00	0.00	0.00
RTG >175-250	4,856,617	RTG250_U	0.40	5.59	4.86	0.04	0.07	0.07
Side pick >120-175	664,763	SP175_U	0.07	2.30	1.06	0.01	0.01	0.01
Top pick >175-250	10,886,300	TH250_U	0.92	12.76	11.06	0.08	0.17	0.16
Yard tractor >120-175	37,427,070	YTD175_U	0.79	121.79	5.30	0.28	0.36	0.33
Other Equipment	259,264	OTHER_U	0.03	0.93	0.60	0.00	0.00	0.00
Total			2.3	145.1	23.9	0.4	0.6	0.6

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-Alt5-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 5

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2005	0.47%	0.88%	0.67%
2010	0.43%	1.01%	0.72%
2015	0.40%	0.98%	0.69%
2030	0.36%	0.89%	0.62%
2045	0.36%	0.89%	0.62%

Note: The percent of annual CHE usage on the peak day represents the average of the landside and dockside percentages. This assumes that landside and dockside CHE usages contribute equally to total CHE usage, and conservatively assumes that the peak days for landside and dockside usages occur simultaneously.

Table E1.2-A15-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 5

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	5.6	19.5	54.4	0.4	2.6	2.4
Top pick >175-250	60.5	182.2	753.8	6.2	26.6	24.4
Yard tractor >120-175	287.7	1,053.8	2,557.9	21.3	137.3	126.3
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
Total	378.6	1,359.0	3,693.2	31.0	178.8	164.5
<i>Project Year 2010</i>						
Forklift >120-175	1.6	14.7	35.6	0.0	1.3	1.2
Forklift >175-250	0.4	2.5	6.7	0.0	0.3	0.3
Forklift >25-50	1.7	9.1	8.8	0.0	0.8	0.7
RTG >175-250	21.4	91.7	280.6	0.4	10.1	9.3
Side pick >120-175	3.3	24.1	66.9	0.1	2.6	2.4
Top pick >175-250	38.5	233.1	954.3	0.8	28.8	26.5
Yard tractor >120-175	7.3	1,171.5	51.4	2.9	3.2	2.9
Other Equipment	1.7	10.9	22.1	0.0	1.4	1.3
Total	75.9	1,557.6	1,426.3	4.3	48.4	44.6
<i>Project Year 2015</i>						
Forklift >120-175	1.2	16.4	38.5	0.0	1.4	1.3
Forklift >175-250	0.3	2.9	7.4	0.0	0.3	0.3
Forklift >25-50	1.3	10.3	9.7	0.0	0.9	0.8
RTG >175-250	24.6	102.1	255.5	0.4	10.3	9.5
Side pick >120-175	2.4	26.9	74.0	0.1	2.8	2.6
Top pick >175-250	28.0	260.6	1,059.7	0.9	30.8	28.3
Yard tractor >120-175	8.6	1,325.2	57.7	3.1	3.9	3.6
Other Equipment	0.9	12.2	24.4	0.0	1.3	1.2
Total	67.2	1,756.5	1,526.9	4.5	51.7	47.6
<i>Project Year 2030</i>						
Forklift >120-175	0.4	14.7	6.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.0	0.8	0.0	0.0	0.0
Forklift >25-50	0.2	6.1	4.9	0.0	0.0	0.0
RTG >175-250	5.0	69.8	60.6	0.5	0.9	0.8
Side pick >120-175	0.8	28.6	13.2	0.1	0.1	0.1
Top pick >175-250	11.5	159.3	138.0	1.0	2.1	2.0
Yard tractor >120-175	9.9	1,519.6	66.1	3.5	4.5	4.2
Other Equipment	0.3	11.6	7.4	0.0	0.0	0.0
Total	28.2	1,810.6	298.0	5.2	7.8	7.2
<i>Project Year 2045</i>						
Forklift >120-175	0.4	14.7	6.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.0	0.8	0.0	0.0	0.0
Forklift >25-50	0.2	6.1	4.9	0.0	0.0	0.0
RTG >175-250	5.0	69.8	60.6	0.5	0.9	0.8
Side pick >120-175	0.8	28.6	13.2	0.1	0.1	0.1
Top pick >175-250	11.5	159.3	138.0	1.0	2.1	2.0
Yard tractor >120-175	9.9	1,519.6	66.1	3.5	4.5	4.2
Other Equipment	0.3	11.6	7.4	0.0	0.0	0.0
Total	28.2	1,810.6	298.0	5.2	7.8	7.2

Table E1.2-AH5-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 5

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>								
Forklift >120-175	223,897	FL175_M	0.20	0.86	2.13	0.01	0.10	0.09
Forklift >175-250	41,623	FL250_M	0.04	0.15	0.41	0.00	0.02	0.02
Forklift >25-50	74,163	FL50_M	0.21	0.54	0.54	0.01	0.06	0.06
RTG >175-250	3,108,235	RTG250_M	1.24	5.48	19.86	0.20	0.65	0.59
Side pick >120-175	425,449	SP175_M	0.15	0.48	3.23	0.03	0.10	0.09
Top pick >175-250	6,967,232	TH250_M	1.66	4.46	44.75	0.46	0.99	0.91
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	165,929	OTHER_M	0.15	0.66	1.33	0.01	0.09	0.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	23,953,325	YTP175_M	29.72	480.39	123.81	-	1.58	1.58
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			33.4	493.0	196.1	0.7	3.6	3.4
<i>Project Year 2010</i>								
Forklift >120-175	247,886	FL175_M	0.11	1.00	2.43	0.00	0.10	0.09
Forklift >175-250	46,082	FL250_M	0.02	0.17	0.47	0.00	0.02	0.02
Forklift >25-50	82,109	FL50_M	0.12	0.63	0.61	0.00	0.06	0.05
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	471,032	SP175_M	0.15	1.67	4.62	0.00	0.16	0.15
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	183,707	OTHER_M	0.11	0.74	1.50	0.00	0.09	0.08
LPG Top pick >175-250	7,713,721	THP250_M	2.91	181.29	15.89	-	0.51	0.51
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175	26,519,752	YTP175_M	47.97	783.84	155.93	-	1.75	1.75
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			51.4	969.4	181.4	0.0	2.7	2.7
<i>Project Year 2015</i>								
Forklift >120-175	275,873	FL175_M	0.02	0.85	0.40	0.00	0.00	0.00
Forklift >175-250	51,285	FL250_M	0.00	0.05	0.05	0.00	0.00	0.00
Forklift >25-50	91,379	FL50_M	0.01	0.10	0.09	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	524,213	SP175_M	0.04	1.61	0.73	0.00	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	204,448	OTHER_M	0.02	0.71	0.45	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	8,584,625	THN250_M	0.16	25.89	1.14	-	0.07	0.07
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	29,513,918	YTN175_M_REPL	0.55	89.01	3.91	-	0.24	0.24
Total			0.8	118.2	6.8	0.0	0.3	0.3
<i>Project Year 2030</i>								
Forklift >120-175	349,839	FL175_M	0.03	1.18	0.55	0.00	0.01	0.00
Forklift >175-250	65,035	FL250_M	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	115,879	FL50_M	0.01	0.14	0.12	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	664,763	SP175_M	0.07	2.30	1.06	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	259,264	OTHER_M	0.03	0.93	0.60	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	10,886,300	THN250_M	0.22	34.13	1.49	-	0.10	0.10
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	37,427,070	YTN175_M_REPL	0.74	117.33	5.13	-	0.33	0.33
Total			1.1	156.1	9.0	0.0	0.4	0.4
<i>Project Year 2045</i>								
Forklift >120-175	349,839	FL175_M	0.03	1.18	0.55	0.00	0.01	0.00
Forklift >175-250	65,035	FL250_M	0.01	0.08	0.07	0.00	0.00	0.00
Forklift >25-50	115,879	FL50_M	0.01	0.14	0.12	0.00	0.00	0.00
RTG >175-250		RTG250_M	-	-	-	-	-	-
Side pick >120-175	664,763	SP175_M	0.07	2.30	1.06	0.01	0.01	0.01
Top pick >175-250		TH250_M	-	-	-	-	-	-
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	259,264	OTHER_M	0.03	0.93	0.60	0.00	0.00	0.00
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250	10,886,300	THN250_M	0.21	33.26	1.46	-	0.09	0.09
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	37,427,070	YTN175_M_REPL	0.71	114.36	5.02	-	0.31	0.31
Total			1.1	152.2	8.9	0.0	0.4	0.4

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-Alt5-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 5

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	2.7	11.6	28.8	0.2	1.4	1.3
Forklift >175-250	0.6	2.0	5.5	0.0	0.3	0.3
Forklift >25-50	2.8	7.3	7.2	0.1	0.8	0.7
RTG >175-250	16.7	73.8	267.7	2.8	8.7	8.0
Side pick >120-175	2.1	6.4	43.5	0.4	1.3	1.2
Top pick >175-250	22.4	60.1	603.1	6.2	13.3	12.2
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	2.0	8.8	17.9	0.2	1.2	1.1
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	400.5	6,474.1	1,668.5	-	21.4	21.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	449.8	6,644.1	2,642.1	9.8	48.3	46.1
<i>Project Year 2010</i>						
Forklift >120-175	1.6	14.5	35.2	0.0	1.4	1.3
Forklift >175-250	0.4	2.5	6.7	0.0	0.3	0.3
Forklift >25-50	1.7	9.1	8.8	0.0	0.8	0.7
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	2.1	24.1	66.9	0.1	2.3	2.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	1.6	10.7	21.7	0.0	1.3	1.2
LPG Top pick >175-250	42.1	2,621.0	229.7	-	7.4	7.4
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	693.5	11,332.4	2,254.3	-	25.4	25.4
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	743.1	14,014.5	2,623.3	0.1	38.8	38.4
<i>Project Year 2015</i>						
Forklift >120-175	0.3	11.7	5.5	0.0	0.0	0.0
Forklift >175-250	0.1	0.8	0.7	0.0	0.0	0.0
Forklift >25-50	0.1	1.3	1.2	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	0.6	22.2	10.1	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	9.8	6.3	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.2	357.2	15.7	-	0.9	0.9
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	7.6	1,228.2	54.0	-	3.3	3.3
Total	11.1	1,631.1	93.3	0.1	4.4	4.4
<i>Project Year 2030</i>						
Forklift >120-175	0.4	14.7	6.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.0	0.8	0.0	0.0	0.0
Forklift >25-50	0.1	1.7	1.5	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	0.8	28.6	13.2	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	11.6	7.4	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.7	425.8	18.6	-	1.2	1.2
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	9.3	1,464.0	64.0	-	4.1	4.1
Total	13.8	1,947.4	112.4	0.1	5.6	5.6
<i>Project Year 2045</i>						
Forklift >120-175	0.4	14.7	6.8	0.0	0.1	0.1
Forklift >175-250	0.1	1.0	0.8	0.0	0.0	0.0
Forklift >25-50	0.1	1.7	1.5	0.0	0.0	0.0
RTG >175-250	-	-	-	-	-	-
Side pick >120-175	0.8	28.6	13.2	0.1	0.1	0.1
Top pick >175-250	-	-	-	-	-	-
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	0.3	11.6	7.4	0.0	0.0	0.0
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	2.6	415.0	18.2	-	1.1	1.1
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	8.9	1,426.9	62.6	-	3.9	3.9
Total	13.2	1,899.6	110.6	0.1	5.3	5.2

Table E1.2-Alt5-191. Emissions from RTG Electricity Consumption - Mitigated Alternative 5

Project Scenario/Activity	Pollutant					
	VOC	CO	NOx	SOx	PM10	PM2.5
Annual Emissions (tons per year)						
Year 2005	-	-	-	-	-	-
Year 2010	0.01	0.26	1.48	0.15	0.05	0.05
Year 2015	0.01	0.29	1.64	0.17	0.06	0.06
Year 2030	0.02	0.36	2.08	0.22	0.07	0.07
Year 2045	0.02	0.36	2.08	0.22	0.07	0.07
Peak Daily Emissions (lb/day)						
Year 2005	-	-	-	-	-	-
Year 2010	0.19	3.71	21.34	2.23	0.74	0.74
Year 2015	0.20	3.94	22.67	2.37	0.79	0.79
Year 2030	0.23	4.52	25.99	2.71	0.90	0.90
Year 2045	0.23	4.52	25.99	2.71	0.90	0.90

Note: These emissions represent regional power plant emissions associated with electricity generation.

Table E1.2-Alt5-192. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NO _x	SO _x	PM10	PM2.5
Year 2005	28.1	100.8	274.0	2.3	13.3	12.2
Year 2010	5.3	107.7	98.7	0.3	3.4	3.1
Year 2015	4.9	127.3	110.7	0.3	3.7	3.4
Year 2030	2.3	145.1	23.9	0.4	0.6	0.6
Year 2045	2.3	145.1	23.9	0.4	0.6	0.6

Table E1.2-Alt5-193. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 5 without Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NO _x	SO _x	PM10	PM2.5
Year 2005	379	1,359	3,693	31	179	165
Year 2010	76	1,558	1,426	4	48	45
Year 2015	67	1,756	1,527	5	52	48
Year 2030	28	1,811	298	5	8	7
Year 2045	28	1,811	298	5	8	7

Table E1.2-A115-194. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	33.4	493.0	196.1	0.7	3.6	3.4
Year 2010	51.4	969.6	182.9	0.2	2.7	2.7
Year 2015	0.8	118.5	8.4	0.2	0.4	0.4
Year 2030	1.1	156.4	11.1	0.2	0.5	0.5
Year 2045	1.1	152.6	10.9	0.2	0.5	0.5

Emissions include electricity consumption by electric RTGs.

Table E1.2-A115-195. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 5 with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	450	6,644	2,642	10	48	46
Year 2010	743	14,018	2,645	2	40	39
Year 2015	11	1,635	116	2	5	5
Year 2030	14	1,952	138	3	7	6
Year 2045	13	1,904	137	3	6	6

Table E1.2-Alt5-196. Peak Daily Operational Emissions Without Mitigation

Alternative 5

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	379	1,359	3,693	31	179	165
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	945	3,428	12,785	5,651	1,027	824
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	784	2,822	11,262	5,622	942	747
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	453	-3,840	9,894	5,640	974	774
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	181	377	4,428	4,268	521	416
Ships - Hoteling	39	105	1,386	2,484	214	171
Tugboats	1	10	56	0	2	2
Trucks	150	642	1,283	2	117	56
Trains	78	269	1,383	1	42	38
Railyard Equipment	4	143	121	0	4	3
Terminal Equipment	67	1,756	1,527	5	52	48
Worker Commuter Vehicles	4	46	6	0	12	2
Total - Project Year 2015	524	3,349	10,190	6,761	963	737
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	362	2,742	8,667	6,733	878	659
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	504	1,058	9,997	6,760	956	730
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	193	402	4,717	4,532	554	443
Ships - Hoteling	39	105	1,386	2,484	214	171
Tugboats	1	10	42	0	2	2
Trucks	73	312	658	3	93	26
Trains	61	269	1,133	1	30	28
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	28	1,811	298	5	8	7
Worker Commuter Vehicles	2	27	3	0	14	3
Total - Project Year 2030	400	3,065	8,255	7,025	915	680
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	239	2,458	6,732	6,997	831	603
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	378	672	8,049	7,025	908	673
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	193	402	4,717	4,532	554	443
Ships - Hoteling	39	105	1,386	2,484	214	171
Tugboats	1	10	42	0	2	2
Trucks	68	293	624	3	92	25
Trains	55	269	1,050	1	26	24
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	28	1,811	298	5	8	7
Worker Commuter Vehicles	2	22	2	0	14	3
Total - Project Year 2045	389	3,041	8,137	7,025	910	675
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	227	2,435	6,614	6,997	825	597
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	367	705	7,934	7,025	902	668
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-Alt5-197. Average Daily Operational Emissions Without Mitigation
Alternative 5

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	16	42	548	472	49	39
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	154	553	1,502	13	73	67
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	431	1,732	5,024	946	344	265
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	371	1,507	4,458	936	313	236
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	248	-969	3,949	942	325	246
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	50	105	1,163	669	103	82
Ships - Hoteling	13	35	461	394	41	33
Tugboats	1	4	24	0	1	1
Trucks	112	481	960	2	87	42
Trains	23	81	414	0	12	11
Railyard Equipment	1	54	46	0	1	1
Terminal Equipment	27	698	606	2	21	19
Worker Commuter Vehicles	3	37	5	0	10	2
Total - Project Year 2015	231	1,496	3,679	1,067	277	191
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	171	1,270	3,113	1,057	245	162
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	223	644	3,607	1,067	274	189
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	71	149	1,649	946	146	117
Ships - Hoteling	14	39	509	432	45	36
Tugboats	1	6	24	0	1	1
Trucks	60	255	538	2	76	21
Trains	22	96	404	0	11	10
Railyard Equipment	1	59	8	0	0	0
Terminal Equipment	12	795	131	2	3	3
Worker Commuter Vehicles	2	22	2	0	12	2
Total - Project Year 2030	184	1,422	3,266	1,383	294	191
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	124	1,196	2,700	1,373	263	162
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	175	532	3,190	1,383	292	188
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	71	149	1,649	946	146	117
Ships - Hoteling	14	39	509	432	45	36
Tugboats	1	6	24	0	1	1
Trucks	56	239	510	2	75	20
Trains	20	96	375	0	9	8
Railyard Equipment	1	59	8	0	0	0
Terminal Equipment	12	795	131	2	3	3
Worker Commuter Vehicles	2	18	2	0	12	2
Total - Project Year 2045	177	1,402	3,208	1,383	292	189
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	117	1,177	2,642	1,373	260	160
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	169	534	3,133	1,383	289	186
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes

**Table E1.2-A15-198. Peak Daily Operational Emissions With Mitigation
Alternative 5**

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	252	1,194	2,222	16	172	115
Trains	100	274	1,904	124	66	61
Railyard Equipment	37	131	371	3	18	16
Terminal Equipment	450	6,644	2,642	10	48	46
Worker Commuter Vehicles	8	87	12	0	10	2
Total - Project Year 2005	1,016	8,714	11,734	5,629	896	706
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	855	8,107	10,211	5,601	812	628
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	524	1,445	8,843	5,619	844	656
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	125	237	1,433	78	51	41
Ships - Hoteling	2	12	83	30	8	6
Tugboats	1	10	56	0	2	2
Trucks	52	179	450	1	80	22
Trains	78	269	1,383	1	42	38
Railyard Equipment	3	135	69	0	2	2
Terminal Equipment	11	1,635	116	2	5	5
Worker Commuter Vehicles	4	46	6	0	12	2
Total - Project Year 2015	277	2,523	3,596	113	202	119
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	115	1,916	2,073	85	117	41
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	256	232	3,403	112	195	112
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	No	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	133	251	1,504	82	54	44
Ships - Hoteling	2	12	83	30	8	6
Tugboats	1	10	42	0	2	2
Trucks	84	251	738	0	98	32
Trains	61	269	1,133	1	30	28
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	14	1,952	138	3	7	6
Worker Commuter Vehicles	2	27	3	0	14	3
Total - Project Year 2030	301	2,901	3,659	116	213	121
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	140	2,294	2,137	88	129	43
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	279	508	3,454	115	206	114
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	No	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	133	251	1,504	82	54	44
Ships - Hoteling	2	12	83	30	8	6
Tugboats	1	10	42	0	2	2
Trucks	84	251	738	0	98	32
Trains	55	269	1,050	1	25	23
Railyard Equipment	2	129	18	0	1	0
Terminal Equipment	13	1,904	137	3	6	6
Worker Commuter Vehicles	2	22	2	0	14	3
Total - Project Year 2045	294	2,849	3,575	116	208	117
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	132	2,242	2,052	88	124	39
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	272	513	3,371	115	201	110
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	No	Yes	Yes

Table E1.2-A15-199. Average Daily Operational Emissions With Mitigation
Alternative 5

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	31	65	725	419	64	51
Ships - Hoteling	7	20	243	270	24	19
Tugboats	1	3	19	1	1	1
Trucks	189	894	1,663	12	129	86
Trains	23	64	444	29	15	14
Railyard Equipment	11	40	114	1	5	5
Terminal Equipment	183	2,701	1,074	4	20	19
Worker Commuter Vehicles	6	71	9	0	8	2
Total - Project Year 2005	451	3,859	4,292	735	266	197
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	391	3,633	3,726	724	235	168
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	268	1,158	3,218	731	247	178
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	39	77	502	30	17	14
Ships - Hoteling	1	5	32	12	3	3
Tugboats	1	4	24	0	1	1
Trucks	39	134	337	1	60	16
Trains	23	81	414	0	12	11
Railyard Equipment	1	50	17	0	1	0
Terminal Equipment	4	649	46	1	2	2
Worker Commuter Vehicles	3	37	5	0	10	2
Total - Project Year 2015	111	1,037	1,377	44	106	49
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	51	812	811	33	74	20
Thresholds	55	550	55	150	150	55
Significant?	No	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	104	186	1,305	44	103	47
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	No	No	No
Project Year 2030						
Ships - Transit and Anchoring	55	110	709	41	24	20
Ships - Hoteling	1	5	35	13	3	3
Tugboats	1	6	24	0	1	1
Trucks	69	205	603	0	80	26
Trains	22	96	404	0	11	10
Railyard Equipment	1	59	8	0	0	0
Terminal Equipment	6	857	61	1	3	3
Worker Commuter Vehicles	2	22	2	0	12	2
Total - Project Year 2030	157	1,360	1,847	56	134	65
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	97	1,134	1,281	46	103	36
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	149	470	1,771	56	131	62
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	No	No	Yes
Project Year 2045						
Ships - Transit and Anchoring	55	110	709	41	24	20
Ships - Hoteling	1	5	35	13	3	3
Tugboats	1	6	24	0	1	1
Trucks	69	205	603	0	80	26
Trains	20	96	375	0	9	8
Railyard Equipment	1	59	8	0	0	0
Terminal Equipment	6	836	60	1	3	3
Worker Commuter Vehicles	2	18	2	0	12	2
Total - Project Year 2045	154	1,335	1,816	56	133	63
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	94	1,109	1,250	46	101	34
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	No	No
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	146	467	1,741	56	130	60
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	No	No	Yes

Table E1.2-Alt6-1. Annual Ship Visit Data - Alternative 6

<i>Project Scenario/Ship Type</i>	<i>Annual Ship Visits</i>	<i>Avg Hoteling per Ship (hr)</i>
Project Year 2005		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	21	54.2
Containerships 3,000 - 5,000 TEU	5	40.3
General Cargo Vessels	52	49.2
Total	78	
Project Year 2010		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	35	30.2
Containerships 3,000 - 5,000 TEU	17	22.8
General Cargo Vessels	78	49.2
Total	130	
Project Year 2015		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	59	32.4
Containerships 3,000 - 5,000 TEU	20	24.4
General Cargo Vessels	156	49.2
Total	234	
Project Year 2030 / 2045		
Containerships 9,000 - 11,000 TEU	-	-
Containerships 8,000 - 9,000 TEU	-	-
Containerships 5,000 - 6,000 TEU	62	33.6
Containerships 3,000 - 5,000 TEU	16	25.2
General Cargo Vessels	286	49.2
Total	364	

Table E1.2-Alt6-2. Peak Day Ship Visit Data - Alternative 6

Project Scenario/Ship Type	Peak Day Arrivals	Peak Day Departures	Peak Day Hoteling (hr)	
			Without Mitigation	With Mitigation
Project Year 2005				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU	1		20.4	20.4
Containerships 3,000 - 5,000 TEU			-	-
General Cargo Vessels			-	-
Total	1	-	20.4	20.4
Project Year 2010				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU	1	1	40.8	37.9
General Cargo Vessels			-	-
Total	1	1	40.8	37.9
Project Year 2015				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU	1	1	40.8	37.9
General Cargo Vessels			-	-
Total	1	1	40.8	37.9
Project Year 2030 / 2045				
Containerships 9,000 - 11,000 TEU			-	-
Containerships 8,000 - 9,000 TEU			-	-
Containerships 5,000 - 6,000 TEU			-	-
Containerships 3,000 - 5,000 TEU	1	1	40.8	37.9
General Cargo Vessels			-	-
Total	1	1	40.8	37.9

Notes: (1) Hoteling time equals 24 hours minus vessel transit time within the SCAB. Because the Vessel Speed Reduction (VSR) program increases transit time, the hoteling times are shorter when VSR is implemented as mitigation. For the Mitigated Project, VSR is assumed for 2010, 2015, 2030, and 2045. VSR is not assumed for the unmitigated project and for the 2005 mitigated project.

Table E1.2-Alt6-5. OGV Hoteling Aux. Gen. Usage per Ship Visit (Assuming No AMP)

Alternative 6

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel</i>	<i>Load Factor (1)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	54.2	98,578
Containerships 3,000 - 5,000 TEU	6,526	0.20	40.3	52,550
General Cargo Vessels	1,776	0.22	49.2	19,223
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	30.2	54,918
Containerships 3,000 - 5,000 TEU	6,526	0.20	22.8	29,749
General Cargo Vessels	1,776	0.22	49.2	19,223
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	32.4	58,814
Containerships 3,000 - 5,000 TEU	6,526	0.20	24.4	31,784
General Cargo Vessels	1,776	0.22	49.2	19,223
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	33.6	61,050
Containerships 3,000 - 5,000 TEU	6,526	0.20	25.2	32,951
General Cargo Vessels	1,776	0.22	49.2	19,223

(1) Source: POLA 2005 Emission Inventory Report.

**Table E1.2-Alt6-6. OGV Anchoring Auxiliary Generator Usage per Ship Visit
Alternative 6**

<i>Vessel Type</i>	<i>Auxiliary kW per Vessel (1)</i>	<i>Load Factor (2)</i>	<i>Hours/ Visit</i>	<i>kW-Hrs/ Visit</i>
Project Year 2005				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	4.1	1,602
Project Year 2010				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	4.1	1,602
Project Year 2015				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	4.1	1,602
Project Year 2030				
Containerships 9,000 - 11,000 TEU	13,501	0.15	-	-
Containerships 8,000 - 9,000 TEU	13,501	0.15	-	-
Containerships 5,000 - 6,000 TEU	11,360	0.16	4.1	7,452
Containerships 3,000 - 5,000 TEU	6,526	0.20	4.1	5,351
General Cargo Vessels	1,776	0.22	4.1	1,602

Note: Average anchoring time was derived from actual anchoring data for China Shipping ship visits for 2004, 2005, and 2006, provided by Starcrest and POLA.

Table E1.2-Alt6-8. OGV Hoteling Auxiliary Boiler Usage per Ship Visit

Alternative 6

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	54.2	8.370
Containerships 3,000 - 5,000 TEU	0.1543	40.3	6.214
General Cargo Vessels	0.0323	49.2	1.591
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	30.2	4.663
Containerships 3,000 - 5,000 TEU	0.1543	22.8	3.518
General Cargo Vessels	0.0323	49.2	1.591
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	32.4	4.994
Containerships 3,000 - 5,000 TEU	0.1543	24.4	3.758
General Cargo Vessels	0.0323	49.2	1.591
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	33.6	5.184
Containerships 3,000 - 5,000 TEU	0.1543	25.2	3.896
General Cargo Vessels	0.0323	49.2	1.591

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt6-9. OGV Anchoring Auxiliary Boiler Usage per Ship Visit

Alternative 6

<i>Vessel Type</i>	<i>Fuel Use (tonne/hr) (1)</i>	<i>Hours/ Visit</i>	<i>Fuel Use/ Visit (tonne)</i>
Project Year 2005			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	4.1	0.133
Project Year 2010			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	4.1	0.133
Project Year 2015			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	4.1	0.133
Project Year 2030			
Containerships 9,000 - 11,000 TEU	0.1543	-	-
Containerships 8,000 - 9,000 TEU	0.1543	-	-
Containerships 5,000 - 6,000 TEU	0.1543	4.1	0.633
Containerships 3,000 - 5,000 TEU	0.1543	4.1	0.633
General Cargo Vessels	0.0323	4.1	0.133

(1) Tonnes = metric tons = 1,000 kg.

Table E1.2-Alt6-18. Annual Emissions from OGV Main Engine - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.78	1.83	23.60	13.73	1.96	1.56
Containerships 3,000 - 5,000 TEU	0.15	0.34	4.38	2.55	0.36	0.29
General Cargo Vessels	0.53	1.24	16.08	9.35	1.33	1.07
Subtotal	1.5	3.4	44.0	25.6	3.7	2.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.29	3.01	38.95	22.66	3.23	2.58
Containerships 3,000 - 5,000 TEU	0.50	1.17	15.18	8.83	1.26	1.01
General Cargo Vessels	0.80	1.87	24.11	14.03	2.00	1.60
Subtotal	2.6	6.1	78.2	45.5	6.5	5.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.18	5.08	65.73	38.24	5.45	4.36
Containerships 3,000 - 5,000 TEU	0.57	1.32	17.07	9.93	1.42	1.13
General Cargo Vessels	1.60	3.73	48.23	28.06	4.00	3.20
Subtotal	4.3	10.1	131.0	76.2	10.9	8.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.30	5.36	69.33	40.33	5.75	4.60
Containerships 3,000 - 5,000 TEU	0.47	1.10	14.27	8.30	1.18	0.95
General Cargo Vessels	2.93	6.84	88.41	51.44	7.33	5.86
Subtotal	5.7	13.3	172.0	100.1	14.3	11.4

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt6-19. Annual Emissions from OGV Main Engine - Alternative 6

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.68	1.52	16.30	8.94	1.41	1.13
Containerships 3,000 - 5,000 TEU	0.12	0.27	3.13	1.77	0.27	0.21
General Cargo Vessels	0.53	1.23	15.85	9.22	1.31	1.05
Subtotal	1.3	3.0	35.3	19.9	3.0	2.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.12	2.51	26.90	14.76	2.33	1.86
Containerships 3,000 - 5,000 TEU	0.41	0.94	10.86	6.12	0.92	0.74
General Cargo Vessels	0.79	1.84	23.78	13.83	1.97	1.58
Subtotal	2.3	5.3	61.5	34.7	5.2	4.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.89	4.23	45.40	24.91	3.93	3.14
Containerships 3,000 - 5,000 TEU	0.46	1.06	12.21	6.89	1.04	0.83
General Cargo Vessels	1.58	3.68	47.55	27.66	3.94	3.15
Subtotal	3.9	9.0	105.2	59.5	8.9	7.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.00	4.46	47.89	26.27	4.14	3.31
Containerships 3,000 - 5,000 TEU	0.39	0.88	10.21	5.76	0.87	0.69
General Cargo Vessels	2.89	6.74	87.18	50.72	7.22	5.78
Subtotal	5.3	12.1	145.3	82.7	12.2	9.8

Assumes VSRP compliance at the 2005 level.

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt6-20. Annual Emissions from OGV Main Engine - Alternative 6

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.28	0.56	4.11	1.83	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.04	0.10	0.81	0.40	0.07	0.06
General Cargo Vessels	0.13	0.30	3.58	2.04	0.30	0.24
Subtotal	0.5	1.0	8.5	4.3	0.8	0.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.47	0.92	6.78	3.02	0.66	0.53
Containerships 3,000 - 5,000 TEU	0.16	0.33	2.81	1.39	0.26	0.21
General Cargo Vessels	0.20	0.45	5.37	3.05	0.45	0.36
Subtotal	0.8	1.7	15.0	7.5	1.4	1.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.79	1.56	11.45	5.09	1.12	0.90
Containerships 3,000 - 5,000 TEU	0.18	0.37	3.16	1.56	0.29	0.23
General Cargo Vessels	0.39	0.91	10.74	6.11	0.90	0.72
Subtotal	1.4	2.8	25.3	12.8	2.3	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.83	1.64	12.07	5.37	1.18	0.94
Containerships 3,000 - 5,000 TEU	0.15	0.31	2.64	1.31	0.24	0.19
General Cargo Vessels	0.72	1.67	19.68	11.20	1.66	1.33
Subtotal	1.7	3.6	34.4	17.9	3.1	2.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt6-21. Annual Emissions from OGV Main Engine - Alternative 6

Harbor Transit - Inbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.15	0.89	0.12	0.12	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.03	0.15	0.03	0.02	0.01
General Cargo Vessels	0.07	0.09	0.52	0.11	0.06	0.05
Subtotal	0.2	0.3	1.6	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.22	0.24	1.46	0.21	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.07	0.09	0.51	0.09	0.06	0.05
General Cargo Vessels	0.10	0.13	0.78	0.16	0.10	0.08
Subtotal	0.4	0.5	2.8	0.5	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.36	0.41	2.47	0.35	0.32	0.26
Containerships 3,000 - 5,000 TEU	0.08	0.10	0.57	0.11	0.07	0.06
General Cargo Vessels	0.21	0.27	1.56	0.32	0.19	0.16
Subtotal	0.6	0.8	4.6	0.8	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.38	0.43	2.60	0.37	0.34	0.27
Containerships 3,000 - 5,000 TEU	0.06	0.08	0.48	0.09	0.06	0.05
General Cargo Vessels	0.38	0.49	2.87	0.58	0.36	0.28
Subtotal	0.8	1.0	5.9	1.0	0.8	0.6

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt6-22. Annual Emissions from OGV Main Engine - Alternative 6

Harbor Transit - Outbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.13	0.75	0.16	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.13	0.04	0.02	0.01
General Cargo Vessels	0.03	0.06	0.52	0.27	0.05	0.04
Subtotal	0.1	0.2	1.4	0.5	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	0.21	1.23	0.27	0.15	0.12
Containerships 3,000 - 5,000 TEU	0.05	0.08	0.45	0.12	0.05	0.04
General Cargo Vessels	0.04	0.09	0.78	0.41	0.07	0.06
Subtotal	0.2	0.4	2.5	0.8	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.36	2.08	0.45	0.25	0.20
Containerships 3,000 - 5,000 TEU	0.06	0.09	0.50	0.14	0.06	0.05
General Cargo Vessels	0.08	0.17	1.57	0.81	0.14	0.11
Subtotal	0.4	0.6	4.1	1.4	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.28	0.38	2.19	0.48	0.27	0.21
Containerships 3,000 - 5,000 TEU	0.05	0.07	0.42	0.12	0.05	0.04
General Cargo Vessels	0.14	0.31	2.87	1.49	0.26	0.21
Subtotal	0.5	0.8	5.5	2.1	0.6	0.5

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt6-23. Annual Emissions from OGV Main Engine - Alternative 6

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.07	0.42	0.05	0.06	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.07	0.01	0.01	0.01
General Cargo Vessels	0.03	0.03	0.18	0.02	0.02	0.02
Subtotal	0.1	0.1	0.7	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.11	0.70	0.09	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.04	0.04	0.25	0.03	0.03	0.03
General Cargo Vessels	0.04	0.04	0.28	0.03	0.04	0.03
Subtotal	0.2	0.2	1.2	0.2	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.18	0.19	1.17	0.15	0.16	0.12
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.28	0.04	0.04	0.03
General Cargo Vessels	0.08	0.09	0.55	0.07	0.07	0.06
Subtotal	0.3	0.3	2.0	0.3	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.20	1.24	0.16	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.04	0.04	0.23	0.03	0.03	0.02
General Cargo Vessels	0.15	0.16	1.01	0.13	0.13	0.11
Subtotal	0.4	0.4	2.5	0.3	0.3	0.3

Assumes main engines use residual fuel with 2.7% sulfur content.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt6-24. Annual Emissions from OGV Main Engine - Alternative 6

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.90	0.11	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.15	0.02	0.02	0.02
General Cargo Vessels	0.06	0.06	0.39	0.05	0.05	0.04
Subtotal	0.2	0.2	1.5	0.2	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.23	0.24	1.49	0.19	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.08	0.09	0.53	0.07	0.07	0.06
General Cargo Vessels	0.09	0.10	0.59	0.07	0.08	0.06
Subtotal	0.4	0.4	2.6	0.3	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.38	0.41	2.51	0.32	0.33	0.27
Containerships 3,000 - 5,000 TEU	0.09	0.10	0.60	0.08	0.08	0.06
General Cargo Vessels	0.18	0.19	1.18	0.15	0.16	0.13
Subtotal	0.6	0.7	4.3	0.5	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.40	0.43	2.65	0.33	0.35	0.28
Containerships 3,000 - 5,000 TEU	0.08	0.08	0.50	0.06	0.07	0.05
General Cargo Vessels	0.33	0.35	2.16	0.27	0.29	0.23
Subtotal	0.8	0.9	5.3	0.7	0.7	0.6

Assumes main engines use residual fuel with 2.7% sulfur content.

Table E1.2-Alt6-25. Max Daily Emissions from OGV Main Engine - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	58.1	135.5	1,751.3	1,698.1	192.7	154.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	58.1	135.5	1,751.3	1,698.1	192.7	154.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	58.1	135.5	1,751.3	1,698.1	192.7	154.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	58.1	135.5	1,751.3	1,698.1	192.7	154.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	58.1	135.5	1,751.3	1,698.1	192.7	154.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	58.1	135.5	1,751.3	1,698.1	192.7	154.1

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt6-26. Max Daily Emissions from OGV Main Engine - Alternative 6

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	76.0	177.4	2,294.1	2,224.4	252.4	201.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	76.0	177.4	2,294.1	2,224.4	252.4	201.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	76.0	177.4	2,294.1	2,224.4	252.4	201.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	76.0	177.4	2,294.1	2,224.4	252.4	201.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	76.0	177.4	2,294.1	2,224.4	252.4	201.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	76.0	177.4	2,294.1	2,224.4	252.4	201.9

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes no VSR

Table E1.2-Alt6-27. Max Daily Emissions from OGV Main Engine - Alternative 6

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	18.0	38.4	323.7	267.3	39.6	31.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.0	38.4	323.7	267.3	39.6	31.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	18.0	38.4	323.7	267.3	39.6	31.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.0	38.4	323.7	267.3	39.6	31.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	18.0	38.4	323.7	267.3	39.6	31.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.0	38.4	323.7	267.3	39.6	31.7

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-28. Max Daily Emissions from OGV Main Engine - Alternative 6
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	7.9	10.0	58.6	18.2	9.8	7.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.9	10.0	58.6	18.2	9.8	7.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	7.9	10.0	58.6	18.2	9.8	7.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.9	10.0	58.6	18.2	9.8	7.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	7.9	10.0	58.6	18.2	9.8	7.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.9	10.0	58.6	18.2	9.8	7.8

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-29. Max Daily Emissions from OGV Main Engine - Alternative 6
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	5.8	8.8	51.7	23.8	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.8	8.8	51.7	23.8	8.0	6.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	5.8	8.8	51.7	23.8	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.8	8.8	51.7	23.8	8.0	6.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	5.8	8.8	51.7	23.8	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.8	8.8	51.7	23.8	8.0	6.4

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-30. Max Daily Emissions from OGV Main Engine - Alternative 6
Turning**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.4	4.7	28.8	6.0	5.1	4.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.4	4.7	28.8	6.0	5.1	4.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.4	4.7	28.8	6.0	5.1	4.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.4	4.7	28.8	6.0	5.1	4.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.4	4.7	28.8	6.0	5.1	4.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.4	4.7	28.8	6.0	5.1	4.0

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt6-31. Max Daily Emissions from OGV Main Engine - Alternative 6

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	9.3	10.0	61.6	12.9	10.8	8.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.3	10.0	61.6	12.9	10.8	8.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	9.3	10.0	61.6	12.9	10.8	8.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.3	10.0	61.6	12.9	10.8	8.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	9.3	10.0	61.6	12.9	10.8	8.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.3	10.0	61.6	12.9	10.8	8.7

Notes: (1) Max Daily emissions assume the main engines are not equipped with slide valves.

(2) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-32. Annual Emissions from OGV Auxiliary Engines - Alternative 6
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.05	0.73	0.61	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.09	0.01	0.01
General Cargo Vessels	0.02	0.04	0.58	0.48	0.06	0.05
Subtotal	0.0	0.1	1.4	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.09	1.21	1.01	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.38	0.31	0.04	0.03
General Cargo Vessels	0.02	0.06	0.87	0.72	0.09	0.07
Subtotal	0.1	0.2	2.5	2.0	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.15	2.04	1.70	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.35	0.04	0.03
General Cargo Vessels	0.05	0.13	1.74	1.45	0.18	0.14
Subtotal	0.1	0.3	4.2	3.5	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.16	2.15	1.79	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.30	0.04	0.03
General Cargo Vessels	0.09	0.24	3.18	2.65	0.32	0.26
Subtotal	0.2	0.4	5.7	4.7	0.6	0.5

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-Alt6-33. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.58	1.32	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	0.02	0.07	0.89	0.74	0.09	0.07
Subtotal	0.1	0.2	2.7	2.2	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.61	2.18	0.27	0.21
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.76	0.64	0.08	0.06
General Cargo Vessels	0.04	0.10	1.33	1.11	0.14	0.11
Subtotal	0.1	0.4	4.7	3.9	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.12	0.33	4.41	3.68	0.45	0.36
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.86	0.72	0.09	0.07
General Cargo Vessels	0.07	0.20	2.66	2.22	0.27	0.22
Subtotal	0.2	0.6	7.9	6.6	0.8	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.35	4.65	3.88	0.47	0.38
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.72	0.60	0.07	0.06
General Cargo Vessels	0.13	0.37	4.89	4.07	0.50	0.40
Subtotal	0.3	0.8	10.3	8.5	1.0	0.8

Assumes VSRP compliance at the 2005 level.

All aux engines are assumed to use residual fuel in the fairway.

Table E1.2-Alt6-34. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.94	0.60	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.13	0.08	0.01	0.01
General Cargo Vessels	0.02	0.04	0.58	0.37	0.05	0.04
Subtotal	0.0	0.1	1.6	1.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.54	1.00	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.44	0.29	0.04	0.03
General Cargo Vessels	0.02	0.07	0.87	0.56	0.07	0.06
Subtotal	0.1	0.2	2.9	1.8	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.61	1.68	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.50	0.32	0.04	0.03
General Cargo Vessels	0.05	0.13	1.74	1.12	0.14	0.11
Subtotal	0.1	0.4	4.8	3.1	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.75	1.77	0.22	0.18
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
General Cargo Vessels	0.09	0.24	3.18	2.05	0.25	0.20
Subtotal	0.2	0.5	6.3	4.1	0.5	0.4

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt6-35. Annual Emissions from OGV Auxiliary Engines - Alternative 6
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.93	0.60	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.12	0.08	0.01	0.01
General Cargo Vessels	0.01	0.04	0.46	0.30	0.04	0.03
Subtotal	0.0	0.1	1.5	1.0	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.54	0.99	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
General Cargo Vessels	0.02	0.05	0.70	0.45	0.06	0.04
Subtotal	0.1	0.2	2.7	1.7	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.60	1.67	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.47	0.30	0.04	0.03
General Cargo Vessels	0.04	0.11	1.39	0.90	0.11	0.09
Subtotal	0.1	0.3	4.5	2.9	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.74	1.77	0.22	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.39	0.25	0.03	0.03
General Cargo Vessels	0.07	0.19	2.55	1.65	0.20	0.16
Subtotal	0.2	0.4	5.7	3.7	0.5	0.4

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-36. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Harbor Transit - Outbound

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.06	0.82	0.53	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	0.01	0.02	0.29	0.19	0.02	0.02
Subtotal	0.0	0.1	1.2	0.8	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.35	0.87	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.37	0.24	0.03	0.02
General Cargo Vessels	0.01	0.03	0.43	0.28	0.03	0.03
Subtotal	0.1	0.2	2.1	1.4	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.17	2.27	1.47	0.18	0.14
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.41	0.27	0.03	0.03
General Cargo Vessels	0.02	0.07	0.87	0.56	0.07	0.06
Subtotal	0.1	0.3	3.6	2.3	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.40	1.55	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.35	0.22	0.03	0.02
General Cargo Vessels	0.04	0.12	1.59	1.03	0.13	0.10
Subtotal	0.1	0.3	4.3	2.8	0.3	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-37. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.43	0.28	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.06	0.04	0.00	0.00
General Cargo Vessels	0.00	0.01	0.15	0.10	0.01	0.01
Subtotal	0.0	0.0	0.6	0.4	0.1	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.05	0.72	0.46	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.20	0.13	0.02	0.01
General Cargo Vessels	0.01	0.02	0.23	0.15	0.02	0.01
Subtotal	0.0	0.1	1.1	0.7	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.09	1.21	0.78	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.14	0.02	0.01
General Cargo Vessels	0.01	0.04	0.46	0.30	0.04	0.03
Subtotal	0.1	0.1	1.9	1.2	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.28	0.82	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.18	0.12	0.01	0.01
General Cargo Vessels	0.02	0.06	0.85	0.55	0.07	0.05
Subtotal	0.1	0.2	2.3	1.5	0.2	0.1

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-38. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.93	0.60	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.12	0.08	0.01	0.01
General Cargo Vessels	0.01	0.03	0.33	0.21	0.03	0.02
Subtotal	0.0	0.1	1.4	0.9	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.54	0.99	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.42	0.27	0.03	0.03
General Cargo Vessels	0.01	0.04	0.50	0.32	0.04	0.03
Subtotal	0.1	0.2	2.5	1.6	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.60	1.67	0.21	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.47	0.30	0.04	0.03
General Cargo Vessels	0.03	0.08	0.99	0.64	0.08	0.06
Subtotal	0.1	0.3	4.1	2.6	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.74	1.77	0.22	0.17
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.39	0.25	0.03	0.03
General Cargo Vessels	0.05	0.14	1.82	1.18	0.15	0.12
Subtotal	0.1	0.4	5.0	3.2	0.4	0.3

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-39. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.91	2.51	33.01	21.30	2.63	2.10
Containerships 3,000 - 5,000 TEU	0.12	0.32	4.19	2.70	0.33	0.27
General Cargo Vessels	0.44	1.21	15.94	10.28	1.27	1.02
Subtotal	1.5	4.0	53.1	34.3	4.2	3.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.84	2.31	30.36	19.59	2.42	1.93
Containerships 3,000 - 5,000 TEU	0.23	0.63	8.22	5.30	0.65	0.52
General Cargo Vessels	0.66	1.82	23.91	15.42	1.90	1.52
Subtotal	1.7	4.8	62.5	40.3	5.0	4.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.52	4.17	54.87	35.39	4.37	3.50
Containerships 3,000 - 5,000 TEU	0.27	0.75	9.88	6.38	0.79	0.63
General Cargo Vessels	1.32	3.64	47.83	30.85	3.81	3.05
Subtotal	3.1	8.6	112.6	72.6	9.0	7.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.66	4.57	60.07	38.75	4.78	3.83
Containerships 3,000 - 5,000 TEU	0.24	0.65	8.56	5.52	0.68	0.55
General Cargo Vessels	2.42	6.67	87.68	56.56	6.98	5.59
Subtotal	4.3	11.9	156.3	100.8	12.4	10.0

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-40. Annual Emissions from OGV Auxiliary Engines - Alternative 6

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.50	1.61	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.43	0.28	0.03	0.03
General Cargo Vessels	0.04	0.10	1.33	0.86	0.11	0.08
Subtotal	0.1	0.3	4.3	2.7	0.3	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.31	4.12	2.66	0.33	0.26
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.48	0.95	0.12	0.09
General Cargo Vessels	0.06	0.15	1.99	1.29	0.16	0.13
Subtotal	0.2	0.6	7.6	4.9	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.53	6.95	4.48	0.55	0.44
Containerships 3,000 - 5,000 TEU	0.05	0.13	1.66	1.07	0.13	0.11
General Cargo Vessels	0.11	0.30	3.99	2.57	0.32	0.25
Subtotal	0.3	1.0	12.6	8.1	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.20	0.56	7.33	4.73	0.58	0.47
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.39	0.90	0.11	0.09
General Cargo Vessels	0.20	0.56	7.31	4.71	0.58	0.47
Subtotal	0.4	1.2	16.0	10.3	1.3	1.0

Assumes 71% of aux engines use residual fuel with 2.7% sulfur content, and 29% of aux engines use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-41. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6
Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.3	43.5	60.4	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.3	43.5	60.4	6.1	4.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.3	43.5	60.4	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.3	43.5	60.4	6.1	4.9
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.3	43.5	60.4	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.3	43.5	60.4	6.1	4.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

Table E1.2-Alt6-42. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.5	4.3	57.0	79.2	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.3	57.0	79.2	8.0	6.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.5	4.3	57.0	79.2	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.3	57.0	79.2	8.0	6.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.5	4.3	57.0	79.2	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.5	4.3	57.0	79.2	8.0	6.4

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes no VSR

**Table E1.2-Alt6-43. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.4	3.9	52.0	72.3	7.3	5.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.9	52.0	72.3	7.3	5.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.4	3.9	52.0	72.3	7.3	5.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.9	52.0	72.3	7.3	5.9
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.4	3.9	52.0	72.3	7.3	5.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.9	52.0	72.3	7.3	5.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-44. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6
Harbor Transit - Inbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-45. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.2	43.0	59.8	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.2	43.0	59.8	6.1	4.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.2	43.0	59.8	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.2	43.0	59.8	6.1	4.9
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.2	43.0	59.8	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.2	43.0	59.8	6.1	4.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-46. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6
Turning**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.6	1.7	22.9	31.9	3.2	2.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.7	22.9	31.9	3.2	2.6
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.6	1.7	22.9	31.9	3.2	2.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.7	22.9	31.9	3.2	2.6
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.6	1.7	22.9	31.9	3.2	2.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.7	22.9	31.9	3.2	2.6

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt6-47. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt6-48. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	46.9	129.1	1,725.1	2,397.6	243.2	194.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	46.9	129.1	1,725.1	2,397.6	243.2	194.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	46.9	129.1	1,725.1	2,397.6	243.2	194.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	46.9	129.1	1,725.1	2,397.6	243.2	194.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	46.9	129.1	1,725.1	2,397.6	243.2	194.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	46.9	129.1	1,725.1	2,397.6	243.2	194.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur and no AMP.

Table E1.2-Alt6-49. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt6-50. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt6-51. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Fairway: 20-Mile to Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Assumes auxiliary boilers are not operated in the fairway.

Table E1.2-Alt6-52. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.002	0.004	0.045	0.279	0.015	0.012
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.011	0.066	0.003	0.003
General Cargo Vessels	0.001	0.003	0.029	0.177	0.009	0.007
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.004	0.007	0.075	0.460	0.024	0.019
Containerships 3,000 - 5,000 TEU	0.002	0.004	0.037	0.230	0.012	0.010
General Cargo Vessels	0.002	0.004	0.043	0.265	0.014	0.011
Subtotal	0.0	0.0	0.2	1.0	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.006	0.012	0.126	0.776	0.041	0.033
Containerships 3,000 - 5,000 TEU	0.002	0.004	0.042	0.259	0.014	0.011
General Cargo Vessels	0.004	0.008	0.086	0.530	0.028	0.022
Subtotal	0.0	0.0	0.3	1.6	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.007	0.013	0.133	0.819	0.043	0.034
Containerships 3,000 - 5,000 TEU	0.002	0.003	0.035	0.216	0.011	0.009
General Cargo Vessels	0.008	0.015	0.157	0.971	0.051	0.041
Subtotal	0.0	0.0	0.3	2.0	0.1	0.1

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt6-53. Annual Emissions from OGV Auxiliary Boilers - Alternative 6
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.012	0.074	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.003	0.018	0.001	0.001
General Cargo Vessels	0.000	0.001	0.009	0.053	0.003	0.002
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.020	0.122	0.006	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.010	0.061	0.003	0.003
General Cargo Vessels	0.001	0.001	0.013	0.080	0.004	0.003
Subtotal	0.0	0.0	0.0	0.3	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.033	0.205	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.011	0.068	0.004	0.003
General Cargo Vessels	0.001	0.003	0.026	0.160	0.008	0.007
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.216	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.057	0.003	0.002
General Cargo Vessels	0.002	0.005	0.048	0.294	0.015	0.012
Subtotal	0.0	0.0	0.1	0.6	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

**Table E1.2-Alt6-54. Annual Emissions from OGV Auxiliary Boilers - Alternative 6
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.010	0.064	0.003	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.002	0.015	0.001	0.001
General Cargo Vessels	0.000	0.001	0.005	0.033	0.002	0.001
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.017	0.106	0.006	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.053	0.003	0.002
General Cargo Vessels	0.000	0.001	0.008	0.050	0.003	0.002
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.003	0.029	0.180	0.009	0.008
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.010	0.060	0.003	0.003
General Cargo Vessels	0.001	0.002	0.016	0.100	0.005	0.004
Subtotal	0.0	0.0	0.1	0.3	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.031	0.189	0.010	0.008
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.008	0.050	0.003	0.002
General Cargo Vessels	0.001	0.003	0.030	0.184	0.010	0.008
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-55. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.000	0.001	0.006	0.034	0.002	0.001
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.001	0.008	0.000	0.000
General Cargo Vessels	0.000	0.000	0.003	0.018	0.001	0.001
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.000	0.001	0.009	0.057	0.003	0.002
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.005	0.028	0.001	0.001
General Cargo Vessels	0.000	0.000	0.004	0.027	0.001	0.001
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.016	0.096	0.005	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.005	0.032	0.002	0.001
General Cargo Vessels	0.000	0.001	0.009	0.053	0.003	0.002
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.016	0.101	0.005	0.004
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.004	0.027	0.001	0.001
General Cargo Vessels	0.001	0.002	0.016	0.098	0.005	0.004
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0

Turning occurs during only one trip segment (arrival or departure).

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-56. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.001	0.012	0.074	0.004	0.003
Containerships 3,000 - 5,000 TEU	0.000	0.000	0.003	0.018	0.001	0.001
General Cargo Vessels	0.000	0.001	0.006	0.038	0.002	0.002
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.001	0.002	0.020	0.122	0.006	0.005
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.010	0.061	0.003	0.003
General Cargo Vessels	0.000	0.001	0.009	0.057	0.003	0.002
Subtotal	0.0	0.0	0.0	0.2	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.033	0.205	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.001	0.001	0.011	0.068	0.004	0.003
General Cargo Vessels	0.001	0.002	0.019	0.115	0.006	0.005
Subtotal	0.0	0.0	0.1	0.4	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.002	0.003	0.035	0.216	0.011	0.009
Containerships 3,000 - 5,000 TEU	0.000	0.001	0.009	0.057	0.003	0.002
General Cargo Vessels	0.002	0.003	0.034	0.210	0.011	0.009
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-57. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.064	0.127	1.295	7.990	0.418	0.335
Containerships 3,000 - 5,000 TEU	0.011	0.022	0.229	1.412	0.074	0.059
General Cargo Vessels	0.030	0.060	0.610	3.760	0.197	0.157
Subtotal	0.1	0.2	2.1	13.2	0.7	0.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.058	0.117	1.191	7.348	0.385	0.308
Containerships 3,000 - 5,000 TEU	0.022	0.044	0.449	2.772	0.145	0.116
General Cargo Vessels	0.045	0.090	0.914	5.640	0.295	0.236
Subtotal	0.1	0.3	2.6	15.8	0.8	0.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.106	0.211	2.153	13.280	0.695	0.556
Containerships 3,000 - 5,000 TEU	0.026	0.053	0.540	3.331	0.174	0.140
General Cargo Vessels	0.090	0.179	1.829	11.280	0.591	0.472
Subtotal	0.2	0.4	4.5	27.9	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.116	0.231	2.357	14.539	0.761	0.609
Containerships 3,000 - 5,000 TEU	0.023	0.046	0.468	2.887	0.151	0.121
General Cargo Vessels	0.164	0.329	3.353	20.680	1.083	0.866
Subtotal	0.3	0.6	6.2	38.1	2.0	1.6

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-58. Annual Emissions from OGV Auxiliary Boilers - Alternative 6

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.005	0.010	0.098	0.604	0.032	0.025
Containerships 3,000 - 5,000 TEU	0.001	0.002	0.023	0.144	0.008	0.006
General Cargo Vessels	0.002	0.005	0.051	0.313	0.016	0.013
Subtotal	0.0	0.0	0.2	1.1	0.1	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.008	0.016	0.162	0.997	0.052	0.042
Containerships 3,000 - 5,000 TEU	0.004	0.008	0.081	0.499	0.026	0.021
General Cargo Vessels	0.004	0.007	0.076	0.470	0.025	0.020
Subtotal	0.0	0.0	0.3	2.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.013	0.027	0.273	1.683	0.088	0.070
Containerships 3,000 - 5,000 TEU	0.004	0.009	0.091	0.561	0.029	0.023
General Cargo Vessels	0.007	0.015	0.152	0.940	0.049	0.039
Subtotal	0.0	0.1	0.5	3.2	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.014	0.028	0.288	1.775	0.093	0.074
Containerships 3,000 - 5,000 TEU	0.004	0.007	0.076	0.469	0.025	0.020
General Cargo Vessels	0.014	0.027	0.279	1.723	0.090	0.072
Subtotal	0.0	0.1	0.6	4.0	0.2	0.2

Assumes 71% of boilers use residual fuel with 2.7% sulfur content, and 29% of boilers use MDO with 0.5% sulfur content (POLA 2005 Emission Inventory Report).

Table E1.2-Alt6-59. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Fairway: AQMD Overwater Boundary to 20-Mile

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt6-60. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Fairway: 20-Mile to Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt6-61. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-62. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

**Table E1.2-Alt6-63. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt6-64. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

(2) Assumes turning occurs during arrivals only.

Table E1.2-Alt6-65. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt6-66. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Hoteling

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.5	9.1	95.5	1,248.9	50.3	40.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.5	9.1	95.5	1,248.9	50.3	40.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.5	9.1	95.5	1,248.9	50.3	40.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.5	9.1	95.5	1,248.9	50.3	40.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.5	9.1	95.5	1,248.9	50.3	40.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.5	9.1	95.5	1,248.9	50.3	40.2

Notes: (1) Assumes worst case fuel with 4.5% sulfur.

Table E1.2-Alt6-67a. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6

Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt6-67b. LNG Truck Mitigation Rates
Mitigated Project

<i>Year</i>	<i>% Trucks</i>
Year 2005	0.0%
Year 2006	0.0%
Year 2007	0.0%
Year 2008	0.0%
Year 2009	0.0%
Year 2010	0.0%
Year 2011	0.0%
Year 2012	50.0%
Year 2013	50.0%
Year 2014	70.0%
Year 2015	70.0%
Year 2016	70.0%
Year 2017	70.0%
Year 2018	100.0%
Year 2019	100.0%
Year 2020	100.0%
Year 2021	100.0%
Year 2022	100.0%
Year 2023	100.0%
Year 2024	100.0%
Year 2025	100.0%
Year 2026	100.0%
Year 2027	100.0%
Year 2028	100.0%
Year 2029	100.0%
Year 2030+	100.0%

Table E1.2-Alt6-68. Annual Emissions from Tugboat Main Engine - Alternative 6

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.21	1.33	0.09	0.05	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.05	0.32	0.02	0.01	0.01
General Cargo Vessels	0.12	0.63	4.07	0.27	0.16	0.15
Subtotal	0.18	0.88	5.72	0.38	0.23	0.21
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.34	2.05	0.00	0.06	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.17	1.02	0.00	0.03	0.03
General Cargo Vessels	0.13	0.94	5.67	0.00	0.18	0.16
Subtotal	0.21	1.45	8.75	0.00	0.27	0.25
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.57	3.06	0.00	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.03	0.19	1.02	0.00	0.04	0.03
General Cargo Vessels	0.27	1.88	10.06	0.01	0.35	0.32
Subtotal	0.38	2.64	14.14	0.01	0.50	0.46
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.60	2.41	0.00	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.16	0.64	0.00	0.03	0.03
General Cargo Vessels	0.49	3.44	13.73	0.01	0.61	0.56
Subtotal	0.60	4.20	16.77	0.01	0.75	0.69

Table E1.2-Alt6-69. Max Daily Emissions from Tugboat Main Engine - Alternative 6

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.80	19.56	118.20	0.07	3.67	3.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	118.2	0.1	3.7	3.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.80	19.56	104.77	0.07	3.67	3.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	104.8	0.1	3.7	3.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.80	19.56	77.99	0.07	3.49	3.21
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	78.0	0.1	3.5	3.2

Table E1.2-Alt6-70. Annual Emissions from Tugboat Auxiliary Engines - Alternative 6

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.08	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.00	0.00	0.00
General Cargo Vessels	0.01	0.04	0.26	0.02	0.01	0.01
Subtotal	0.01	0.06	0.36	0.03	0.02	0.02
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.02	0.13	0.00	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.00	0.00	0.00
General Cargo Vessels	0.01	0.07	0.36	0.00	0.01	0.01
Subtotal	0.01	0.10	0.56	0.00	0.02	0.02
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.21	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.00	0.00	0.00
General Cargo Vessels	0.02	0.13	0.70	0.00	0.03	0.03
Subtotal	0.02	0.19	0.99	0.00	0.04	0.04
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.17	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
General Cargo Vessels	0.03	0.24	0.98	0.00	0.04	0.04
Subtotal	0.03	0.30	1.20	0.00	0.05	0.05

Table E1.2-Alt6-71. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 6

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.16	1.37	7.51	0.01	0.27	0.26
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.5	0.0	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.16	1.37	7.32	0.01	0.27	0.26
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.3	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.16	1.37	5.59	0.01	0.23	0.22
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	5.6	0.0	0.2	0.2

Table E1.2-Alt6-72. Summary of Annual Marine Vessel Emissions without Mitigation

Alternative 6

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	1.5	3.5	45.5	26.8	3.8	3.0
Ships - 20 mile to PA	1.4	3.2	38.0	22.2	3.3	2.6
Ships - PA	0.5	1.1	10.2	5.8	0.9	0.7
Ships - Harbor Transit	0.4	0.7	5.7	2.7	0.6	0.5
Ships - Turning & Docking	0.4	0.5	4.2	1.8	0.5	0.4
Ships - Anchoring	0.1	0.3	4.4	3.8	0.4	0.3
Ships - Hoteling	1.6	4.3	55.3	47.4	4.9	3.9
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	0.9	6.1	0.4	0.2	0.2
Total	6.1	14.5	169.4	111.0	14.6	11.7
Project Year 2010						
Ships - AQMD to 20 mile	2.7	6.2	80.7	47.6	6.7	5.4
Ships - 20 mile to PA	2.4	5.6	66.2	38.6	5.7	4.6
Ships - PA	0.9	1.9	18.0	10.3	1.7	1.3
Ships - Harbor Transit	0.8	1.2	10.1	4.8	1.0	0.8
Ships - Turning & Docking	0.7	0.9	7.5	3.2	0.8	0.7
Ships - Anchoring	0.2	0.6	7.9	6.9	0.7	0.6
Ships - Hoteling	1.9	5.0	65.1	56.1	5.8	4.6
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	1.5	9.3	0.0	0.3	0.3
Total	9.8	23.1	264.8	167.4	22.7	18.2
Project Year 2015						
Ships - AQMD to 20 mile	4.5	10.4	135.2	79.7	11.3	9.0
Ships - 20 mile to PA	4.1	9.6	113.1	66.1	9.7	7.8
Ships - PA	1.5	3.2	30.4	17.5	2.8	2.2
Ships - Harbor Transit	1.3	2.0	16.9	8.1	1.7	1.4
Ships - Turning & Docking	1.1	1.5	12.4	5.2	1.3	1.1
Ships - Anchoring	0.4	1.0	13.1	11.3	1.2	0.9
Ships - Hoteling	3.3	9.0	117.1	100.5	10.4	8.3
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.4	2.8	15.1	0.0	0.5	0.5
Total	16.6	39.6	453.4	288.4	39.0	31.2
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	5.9	13.7	177.7	104.8	14.8	11.9
Ships - 20 mile to PA	5.6	12.9	155.5	91.3	13.3	10.6
Ships - PA	1.9	4.1	41.1	24.0	3.7	3.0
Ships - Harbor Transit	1.6	2.5	21.6	10.6	2.2	1.7
Ships - Turning & Docking	1.4	1.8	15.2	6.4	1.6	1.3
Ships - Anchoring	0.5	1.3	16.7	14.3	1.5	1.2
Ships - Hoteling	4.6	12.5	162.5	138.9	14.4	11.6
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.6	4.5	18.0	0.0	0.8	0.7
Total	22.0	53.4	608.2	390.3	52.4	42.0

**Table E1.2-Alt6-73. Summary of Maximum Daily Marine Vessel Emissions without Mitigation
Alternative 6**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	59	139	1,795	1,758	199	159
Ships - 20 mile to PA	78	182	2,351	2,304	260	208
Ships - PA	20	43	380	397	49	39
Ships - Harbor Transit	16	26	205	199	32	26
Ships - Turning & Docking	16	20	164	142	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	51	138	1,821	3,646	293	235
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	126	0	4	4
Total	243	568	6,841	8,446	865	692
Project Year 2015						
Ships - AQMD to 20 mile	59	139	1,795	1,758	199	159
Ships - 20 mile to PA	78	182	2,351	2,304	260	208
Ships - PA	20	43	380	397	49	39
Ships - Harbor Transit	16	26	205	199	32	26
Ships - Turning & Docking	16	20	164	142	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	51	138	1,821	3,646	293	235
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	112	0	4	4
Total	243	568	6,828	8,446	865	692
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	59	139	1,795	1,758	199	159
Ships - 20 mile to PA	78	182	2,351	2,304	260	208
Ships - PA	20	43	380	397	49	39
Ships - Harbor Transit	16	26	205	199	32	26
Ships - Turning & Docking	16	20	164	142	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	51	138	1,821	3,646	293	235
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	84	0	4	3
Total	243	568	6,799	8,446	865	692

Table E1.2-Alt6-74. AMP Compliance Rates

Alternative 6 with Mitigation

Project Year	Compliance Rate
Project Year 2005	0%
Project Year 2006	0%
Project Year 2008	0%
Project Year 2009	0%
Project Year 2010	10%
Project Year 2011	10%
Project Year 2012	10%
Project Year 2015	40%
Project Year 2020	80%
Project Year 2030+	80%

Source: Stipulated Judgment & Expanded AMP.

Table E1.2-Alt6-75. Vessel Speed Reduction Program (VSRP) Compliance Rates

Alternative 6 with Mitigation

Year	Compliance Rate
Year 2005 (1)	68.0%
Year 2009+ (2)	100.0%

Notes: (1) This is the historical average compliance rate for CS for 2005 from 20 nm to the PA.

VSR was not observed beyond 20 nm. Source: POLA staff (K. Maggay, 2007).

(2) The VSR mitigation measure starting in 2009 applies from 40 nm to the PA.

**Table E1.2-Alt6-76. OGV Main Engine Slide Valve Compliance Rates
Alternative 6 with Mitigation**

<i>Year</i>	<i>Compliance Rate</i>
Year 2005	0.0%
Year 2009	25.0%
Year 2010	50.0%
Year 2012	75.0%
Year 2014	100.0%
Year 2015+	100.0%

Table E1.2-Alt6-78. OGV Main Engine Fuel Usage

Alternative 6 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt6-79. OGV Auxiliary Engine and Boiler Fuel Usage - Fairway Transit

Alternative 6 with Mitigation

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	100%			
Project Year 2007	100%			
Project Year 2009	70%		30%	
Project Year 2010	50%		50%	
Project Year 2011	50%		50%	
Project Year 2012	50%		50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

**Table E1.2-Alt6-80. OGV Auxiliary Engine and Boiler Fuel Usage - Precautionary Area, Harbor Transit, Hoteling
Alternative 6 with Mitigation**

Project Year	Residual 2.7% Sulfur	MDO 0.5% Sulfur	MGO 0.2% Sulfur	MGO 0.1% Sulfur
Project Year 2005	71%	29%		
Project Year 2007	71%	29%		
Project Year 2009	50%	20%	30%	
Project Year 2010	36%	15%	50%	
Project Year 2011	36%	15%	50%	
Project Year 2012	36%	15%	50%	
Project Year 2013			100%	
Project Year 2014			100%	
Project Year 2015			100%	
Project Year 2030+			100%	

Mitigation applies from 40 nm to the berth.

Table E1.2-Alt6-81. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation

Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.78	1.83	23.60	13.73	1.96	1.56
Containerships 3,000 - 5,000 TEU	0.15	0.34	4.38	2.55	0.36	0.29
General Cargo Vessels	0.53	1.24	16.08	9.35	1.33	1.07
Subtotal	1.5	3.4	44.0	25.6	3.7	2.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.65	1.40	9.59	3.16	0.65	0.52
Containerships 3,000 - 5,000 TEU	0.22	0.50	4.07	1.46	0.26	0.21
General Cargo Vessels	0.51	1.19	12.39	4.78	0.76	0.61
Subtotal	1.4	3.1	26.1	9.4	1.7	1.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.10	2.36	12.62	0.70	0.50	0.40
Containerships 3,000 - 5,000 TEU	0.25	0.57	3.58	0.21	0.13	0.11
General Cargo Vessels	1.02	2.37	19.33	1.25	0.69	0.55
Subtotal	2.4	5.3	35.5	2.2	1.3	1.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.16	2.49	13.31	0.74	0.53	0.42
Containerships 3,000 - 5,000 TEU	0.21	0.47	2.99	0.18	0.11	0.09
General Cargo Vessels	1.87	4.35	35.45	2.30	1.26	1.01
Subtotal	3.2	7.3	51.8	3.2	1.9	1.5

Mitigation measures include VSR, slide valves, low sulfur fuel.

**Table E1.2-Alt6-82. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.68	1.52	16.30	8.94	1.41	1.13
Containerships 3,000 - 5,000 TEU	0.12	0.27	3.13	1.77	0.27	0.21
General Cargo Vessels	0.53	1.23	15.85	9.22	1.31	1.05
Subtotal	1.3	3.0	35.3	19.9	3.0	2.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.86	1.83	12.56	4.14	0.85	0.68
Containerships 3,000 - 5,000 TEU	0.29	0.66	5.34	1.91	0.34	0.28
General Cargo Vessels	0.67	1.55	16.23	6.26	0.99	0.79
Subtotal	1.8	4.0	34.1	12.3	2.2	1.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.44	3.09	16.54	0.92	0.65	0.52
Containerships 3,000 - 5,000 TEU	0.33	0.74	4.68	0.28	0.18	0.14
General Cargo Vessels	1.33	3.11	25.33	1.64	0.90	0.72
Subtotal	3.1	6.9	46.5	2.8	1.7	1.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.52	3.26	17.44	0.97	0.69	0.55
Containerships 3,000 - 5,000 TEU	0.27	0.62	3.92	0.24	0.15	0.12
General Cargo Vessels	2.44	5.70	46.43	3.01	1.65	1.32
Subtotal	4.2	9.6	67.8	4.2	2.5	2.0

Mitigation measures include VSR, slide valves, low sulfur fuel.

Table E1.2-Alt6-83. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.28	0.56	4.11	1.83	0.40	0.32
Containerships 3,000 - 5,000 TEU	0.04	0.10	0.81	0.40	0.07	0.06
General Cargo Vessels	0.13	0.30	3.58	2.04	0.30	0.24
Subtotal	0.5	1.0	8.5	4.3	0.8	0.6
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.47	0.92	5.48	1.62	0.39	0.32
Containerships 3,000 - 5,000 TEU	0.16	0.33	2.27	0.74	0.15	0.12
General Cargo Vessels	0.20	0.45	4.34	1.63	0.27	0.22
Subtotal	0.8	1.7	12.1	4.0	0.8	0.7
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.79	1.56	7.21	0.36	0.30	0.24
Containerships 3,000 - 5,000 TEU	0.18	0.37	1.99	0.11	0.08	0.06
General Cargo Vessels	0.39	0.91	6.76	0.43	0.24	0.20
Subtotal	1.4	2.8	16.0	0.9	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.83	1.64	7.61	0.38	0.32	0.25
Containerships 3,000 - 5,000 TEU	0.15	0.31	1.66	0.09	0.07	0.05
General Cargo Vessels	0.72	1.67	12.40	0.79	0.45	0.36
Subtotal	1.7	3.6	21.7	1.3	0.8	0.7

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt6-84. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation

Harbor Transit - Inbound

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.13	0.15	0.89	0.12	0.12	0.09
Containerships 3,000 - 5,000 TEU	0.02	0.03	0.15	0.03	0.02	0.01
General Cargo Vessels	0.07	0.09	0.52	0.11	0.06	0.05
Subtotal	0.2	0.3	1.6	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.22	0.24	1.18	0.11	0.11	0.09
Containerships 3,000 - 5,000 TEU	0.07	0.09	0.41	0.05	0.04	0.03
General Cargo Vessels	0.10	0.13	0.63	0.08	0.06	0.05
Subtotal	0.4	0.5	2.2	0.2	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.36	0.41	1.56	0.02	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.08	0.10	0.36	0.01	0.02	0.02
General Cargo Vessels	0.21	0.27	0.99	0.02	0.05	0.04
Subtotal	0.6	0.8	2.9	0.1	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.38	0.43	1.64	0.03	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.06	0.08	0.30	0.01	0.02	0.01
General Cargo Vessels	0.38	0.49	1.81	0.04	0.10	0.08
Subtotal	0.8	1.0	3.7	0.1	0.2	0.2

Mitigation measures include slide valves and low sulfur fuel.

**Table E1.2-Alt6-85. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.13	0.75	0.16	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.13	0.04	0.02	0.01
General Cargo Vessels	0.03	0.06	0.52	0.27	0.05	0.04
Subtotal	0.1	0.2	1.4	0.5	0.2	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.16	0.21	0.99	0.14	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.05	0.08	0.36	0.07	0.03	0.02
General Cargo Vessels	0.04	0.09	0.63	0.22	0.04	0.03
Subtotal	0.2	0.4	2.0	0.4	0.2	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.26	0.36	1.31	0.03	0.07	0.05
Containerships 3,000 - 5,000 TEU	0.06	0.09	0.32	0.01	0.02	0.01
General Cargo Vessels	0.08	0.17	0.99	0.06	0.04	0.03
Subtotal	0.4	0.6	2.6	0.1	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.28	0.38	1.38	0.03	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.05	0.07	0.27	0.01	0.01	0.01
General Cargo Vessels	0.14	0.31	1.81	0.10	0.07	0.06
Subtotal	0.5	0.8	3.5	0.1	0.2	0.1

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt6-86. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation

Turning

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.07	0.42	0.05	0.06	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.07	0.01	0.01	0.01
General Cargo Vessels	0.03	0.03	0.18	0.02	0.02	0.02
Subtotal	0.1	0.1	0.7	0.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.11	0.56	0.05	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.04	0.04	0.20	0.02	0.02	0.02
General Cargo Vessels	0.04	0.04	0.22	0.02	0.02	0.02
Subtotal	0.2	0.2	1.0	0.1	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.18	0.19	0.74	0.01	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.04	0.05	0.18	0.00	0.01	0.01
General Cargo Vessels	0.08	0.09	0.35	0.00	0.02	0.02
Subtotal	0.3	0.3	1.3	0.0	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.20	0.78	0.01	0.04	0.04
Containerships 3,000 - 5,000 TEU	0.04	0.04	0.15	0.00	0.01	0.01
General Cargo Vessels	0.15	0.16	0.64	0.01	0.04	0.03
Subtotal	0.4	0.4	1.6	0.0	0.1	0.1

Mitigation measures include slide valves and low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt6-87. Annual Emissions from OGV Main Engine - Alternative 6 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.15	0.90	0.11	0.12	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.02	0.15	0.02	0.02	0.02
General Cargo Vessels	0.06	0.06	0.39	0.05	0.05	0.04
Subtotal	0.2	0.2	1.5	0.2	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.23	0.24	1.20	0.10	0.12	0.09
Containerships 3,000 - 5,000 TEU	0.08	0.09	0.43	0.04	0.04	0.03
General Cargo Vessels	0.09	0.10	0.48	0.04	0.05	0.04
Subtotal	0.4	0.4	2.1	0.2	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.38	0.41	1.58	0.02	0.09	0.07
Containerships 3,000 - 5,000 TEU	0.09	0.10	0.38	0.01	0.02	0.02
General Cargo Vessels	0.18	0.19	0.74	0.01	0.04	0.03
Subtotal	0.6	0.7	2.7	0.0	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.40	0.43	1.67	0.02	0.09	0.08
Containerships 3,000 - 5,000 TEU	0.08	0.08	0.32	0.00	0.02	0.01
General Cargo Vessels	0.33	0.35	1.36	0.02	0.08	0.06
Subtotal	0.8	0.9	3.4	0.0	0.2	0.2

Mitigation measures include slide valves and low sulfur fuel.

Table E1.2-Alt6-88. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	37.2	86.9	1,123.6	1,089.4	123.6	98.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	25.8	58.2	582.2	522.9	67.7	54.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	58.2	582.2	522.9	67.7	54.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	25.8	58.2	366.8	22.1	13.8	11.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	58.2	366.8	22.1	13.8	11.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	25.8	58.2	366.8	22.1	13.8	11.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	25.8	58.2	366.8	22.1	13.8	11.0

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt6-89. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	48.8	113.8	1,471.8	1,427.1	161.9	129.5
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	33.7	76.2	762.6	685.0	88.6	70.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.7	76.2	762.6	685.0	88.6	70.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	33.7	76.2	480.5	28.9	18.0	14.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.7	76.2	480.5	28.9	18.0	14.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	33.7	76.2	480.5	28.9	18.0	14.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	33.7	76.2	480.5	28.9	18.0	14.4

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-Alt6-90. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation

Precautionary Area

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	13.4	26.6	195.7	145.1	25.4	20.3
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	13.4	26.6	195.7	145.1	25.4	20.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	18.0	38.4	323.7	267.3	39.6	31.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.0	38.4	323.7	267.3	39.6	31.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	18.0	38.4	203.9	11.3	8.1	6.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.0	38.4	203.9	11.3	8.1	6.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	18.0	38.4	203.9	11.3	8.1	6.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	18.0	38.4	203.9	11.3	8.1	6.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt6-91. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	12.4	13.9	84.4	19.8	14.7	11.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	12.4	13.9	84.4	19.8	14.7	11.7
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	7.9	10.0	58.6	18.2	9.8	7.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.9	10.0	58.6	18.2	9.8	7.8
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	7.9	10.0	36.9	0.8	2.0	1.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.9	10.0	36.9	0.8	2.0	1.6
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	7.9	10.0	36.9	0.8	2.0	1.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	7.9	10.0	36.9	0.8	2.0	1.6

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt6-92. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	5.8	8.8	51.7	23.8	8.0	6.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.8	8.8	51.7	23.8	8.0	6.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	5.8	8.8	32.6	1.0	1.6	1.3
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.8	8.8	32.6	1.0	1.6	1.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	5.8	8.8	32.6	1.0	1.6	1.3
General Cargo Vessels	-	-	-	-	-	-
Subtotal	5.8	8.8	32.6	1.0	1.6	1.3

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

Table E1.2-Alt6-93. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.1	6.5	40.1	8.4	7.1	5.6
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.1	6.5	40.1	8.4	7.1	5.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.4	4.7	28.8	6.0	5.1	4.0
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.4	4.7	28.8	6.0	5.1	4.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.4	4.7	18.1	0.3	1.0	0.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.4	4.7	18.1	0.3	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.4	4.7	18.1	0.3	1.0	0.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.4	4.7	18.1	0.3	1.0	0.8

- Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.
(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.
(3) Assumes turning occurs during arrivals only.

Table E1.2-Alt6-94. Max Daily Emissions from OGV Main Engine - Alternative 6 with Mitigation

Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	6.5	7.0	43.0	9.0	7.6	6.0
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	6.5	7.0	43.0	9.0	7.6	6.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	9.3	10.0	61.6	12.9	10.8	8.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.3	10.0	61.6	12.9	10.8	8.7
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	9.3	10.0	38.8	0.5	2.2	1.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.3	10.0	38.8	0.5	2.2	1.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	9.3	10.0	38.8	0.5	2.2	1.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	9.3	10.0	38.8	0.5	2.2	1.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the main engines use 4.5% S residual fuel, and main engines do not have slide valves.

(2) For 2015 and 2030, max Daily emissions assume the main engines use 0.2% S distillate fuel, and main engines are equipped with slide valves.

**Table E1.2-Alt6-95. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.05	0.73	0.61	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.09	0.01	0.01
General Cargo Vessels	0.02	0.04	0.58	0.48	0.06	0.05
Subtotal	0.0	0.1	1.4	1.2	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.18	2.30	1.06	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.66	0.30	0.04	0.03
General Cargo Vessels	0.03	0.08	1.06	0.49	0.07	0.05
Subtotal	0.1	0.3	4.0	1.8	0.2	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.30	3.77	0.24	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.72	0.05	0.01	0.01
General Cargo Vessels	0.06	0.16	2.06	0.13	0.04	0.03
Subtotal	0.2	0.5	6.6	0.4	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.31	3.98	0.25	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.60	0.04	0.01	0.01
General Cargo Vessels	0.11	0.30	3.77	0.24	0.08	0.06
Subtotal	0.2	0.7	8.4	0.5	0.2	0.1

Mitigation measures include VSR and low sulfur fuel.

**Table E1.2-Alt6-96. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.58	1.32	0.16	0.13
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.22	0.18	0.02	0.02
General Cargo Vessels	0.02	0.07	0.89	0.74	0.09	0.07
Subtotal	0.1	0.2	2.7	2.2	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.23	3.01	1.38	0.19	0.15
Containerships 3,000 - 5,000 TEU	0.02	0.07	0.87	0.40	0.05	0.04
General Cargo Vessels	0.04	0.11	1.39	0.64	0.09	0.07
Subtotal	0.1	0.4	5.3	2.4	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.14	0.39	4.94	0.31	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.03	0.07	0.95	0.06	0.02	0.02
General Cargo Vessels	0.08	0.21	2.69	0.17	0.05	0.04
Subtotal	0.2	0.7	8.6	0.5	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.15	0.41	5.21	0.33	0.10	0.08
Containerships 3,000 - 5,000 TEU	0.02	0.06	0.79	0.05	0.02	0.01
General Cargo Vessels	0.14	0.39	4.94	0.31	0.10	0.08
Subtotal	0.3	0.9	10.9	0.7	0.2	0.2

Mitigation measures include VSR and low sulfur fuel.

Table E1.2-Alt6-97. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation

Precautionary Area

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.94	0.60	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.13	0.08	0.01	0.01
General Cargo Vessels	0.02	0.04	0.58	0.37	0.05	0.04
Subtotal	0.0	0.1	1.6	1.1	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.51	0.54	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.43	0.16	0.02	0.02
General Cargo Vessels	0.02	0.07	0.85	0.31	0.04	0.03
Subtotal	0.1	0.2	2.8	1.0	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.50	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.48	0.03	0.01	0.01
General Cargo Vessels	0.05	0.13	1.67	0.10	0.03	0.03
Subtotal	0.1	0.4	4.7	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.64	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.40	0.03	0.01	0.01
General Cargo Vessels	0.09	0.24	3.06	0.19	0.06	0.05
Subtotal	0.2	0.5	6.1	0.4	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt6-98. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.93	0.60	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.12	0.08	0.01	0.01
General Cargo Vessels	0.01	0.04	0.46	0.30	0.04	0.03
Subtotal	0.0	0.1	1.5	1.0	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.51	0.54	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.41	0.15	0.02	0.02
General Cargo Vessels	0.02	0.05	0.68	0.25	0.03	0.03
Subtotal	0.1	0.2	2.6	0.9	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.49	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.45	0.03	0.01	0.01
General Cargo Vessels	0.04	0.11	1.34	0.08	0.03	0.02
Subtotal	0.1	0.3	4.3	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.63	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.38	0.02	0.01	0.01
General Cargo Vessels	0.07	0.19	2.45	0.15	0.05	0.04
Subtotal	0.2	0.4	5.5	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt6-99. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.06	0.82	0.53	0.06	0.05
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.11	0.07	0.01	0.01
General Cargo Vessels	0.01	0.02	0.29	0.19	0.02	0.02
Subtotal	0.0	0.1	1.2	0.8	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.32	0.47	0.07	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.36	0.13	0.02	0.01
General Cargo Vessels	0.01	0.03	0.43	0.15	0.02	0.02
Subtotal	0.1	0.2	2.1	0.8	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.17	2.18	0.14	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.40	0.02	0.01	0.01
General Cargo Vessels	0.02	0.07	0.84	0.05	0.02	0.01
Subtotal	0.1	0.3	3.4	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.18	2.30	0.14	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.33	0.02	0.01	0.01
General Cargo Vessels	0.04	0.12	1.53	0.10	0.03	0.02
Subtotal	0.1	0.3	4.2	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt6-100. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.43	0.28	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.06	0.04	0.00	0.00
General Cargo Vessels	0.00	0.01	0.15	0.10	0.01	0.01
Subtotal	0.0	0.0	0.6	0.4	0.1	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.02	0.05	0.70	0.25	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.19	0.07	0.01	0.01
General Cargo Vessels	0.01	0.02	0.23	0.08	0.01	0.01
Subtotal	0.0	0.1	1.1	0.4	0.1	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.09	1.16	0.07	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.21	0.01	0.00	0.00
General Cargo Vessels	0.01	0.04	0.45	0.03	0.01	0.01
Subtotal	0.1	0.1	1.8	0.1	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.10	1.23	0.08	0.02	0.02
Containerships 3,000 - 5,000 TEU	0.01	0.01	0.18	0.01	0.00	0.00
General Cargo Vessels	0.02	0.06	0.82	0.05	0.02	0.01
Subtotal	0.1	0.2	2.2	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt6-101. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.03	0.07	0.93	0.60	0.07	0.06
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.12	0.08	0.01	0.01
General Cargo Vessels	0.01	0.03	0.33	0.21	0.03	0.02
Subtotal	0.0	0.1	1.4	0.9	0.1	0.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.12	1.51	0.54	0.08	0.06
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.41	0.15	0.02	0.02
General Cargo Vessels	0.01	0.04	0.49	0.18	0.02	0.02
Subtotal	0.1	0.2	2.4	0.9	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.20	2.49	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.04	0.45	0.03	0.01	0.01
General Cargo Vessels	0.03	0.08	0.96	0.06	0.02	0.02
Subtotal	0.1	0.3	3.9	0.2	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.21	2.63	0.16	0.05	0.04
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.38	0.02	0.01	0.01
General Cargo Vessels	0.05	0.14	1.75	0.11	0.03	0.03
Subtotal	0.1	0.4	4.8	0.3	0.1	0.1

Mitigation measures include low sulfur fuel.

Table E1.2-Alt6-102. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.91	2.51	33.01	21.30	2.63	2.10
Containerships 3,000 - 5,000 TEU	0.12	0.32	4.19	2.70	0.33	0.27
General Cargo Vessels	0.44	1.21	15.94	10.28	1.27	1.02
Subtotal	1.5	4.0	53.1	34.3	4.2	3.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.76	2.08	26.79	9.63	1.35	1.08
Containerships 3,000 - 5,000 TEU	0.20	0.56	7.26	2.61	0.37	0.29
General Cargo Vessels	0.60	1.64	21.10	7.59	1.06	0.85
Subtotal	1.6	4.3	55.1	19.8	2.8	2.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.91	2.50	31.63	1.98	0.63	0.50
Containerships 3,000 - 5,000 TEU	0.16	0.45	5.70	0.36	0.11	0.09
General Cargo Vessels	0.79	2.18	27.57	1.72	0.55	0.44
Subtotal	1.9	5.1	64.9	4.1	1.3	1.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.33	0.91	11.54	0.72	0.23	0.18
Containerships 3,000 - 5,000 TEU	0.05	0.13	1.65	0.10	0.03	0.03
General Cargo Vessels	0.48	1.33	16.85	1.05	0.34	0.27
Subtotal	0.9	2.4	30.0	1.9	0.6	0.5

Mitigation measures include AMP and low sulfur fuel (for non-AMP ships).

Table E1.2-Alt6-103. Annual Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.07	0.19	2.50	1.61	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.01	0.03	0.43	0.28	0.03	0.03
General Cargo Vessels	0.04	0.10	1.33	0.86	0.11	0.08
Subtotal	0.1	0.3	4.3	2.7	0.3	0.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.31	4.04	1.45	0.20	0.16
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.45	0.52	0.07	0.06
General Cargo Vessels	0.06	0.15	1.95	0.70	0.10	0.08
Subtotal	0.2	0.6	7.4	2.7	0.4	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.19	0.53	6.68	0.42	0.13	0.11
Containerships 3,000 - 5,000 TEU	0.05	0.13	1.60	0.10	0.03	0.03
General Cargo Vessels	0.11	0.30	3.83	0.24	0.08	0.06
Subtotal	0.3	1.0	12.1	0.8	0.2	0.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.20	0.56	7.05	0.44	0.14	0.11
Containerships 3,000 - 5,000 TEU	0.04	0.11	1.34	0.08	0.03	0.02
General Cargo Vessels	0.20	0.56	7.02	0.44	0.14	0.11
Subtotal	0.4	1.2	15.4	1.0	0.3	0.2

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt6-104. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.9	2.6	34.8	48.4	4.9	3.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.9	2.6	34.8	48.4	4.9	3.9
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.1	5.9	78.4	108.9	11.0	8.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	78.4	108.9	11.0	8.8
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.1	5.9	74.1	4.6	1.5	1.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	74.1	4.6	1.5	1.2
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.1	5.9	74.1	4.6	1.5	1.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.1	5.9	74.1	4.6	1.5	1.2

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt6-105. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.6	63.4	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.6	63.4	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.8	7.7	102.6	142.7	14.5	11.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	7.7	102.6	142.7	14.5	11.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.8	7.7	97.1	6.1	1.9	1.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	7.7	97.1	6.1	1.9	1.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.8	7.7	97.1	6.1	1.9	1.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	7.7	97.1	6.1	1.9	1.5

- Notes: (1) For 2005, max Daily emissions assume the ship does not use VSR, and aux engines use 4.5% S residual fuel.
- (2) For 2010, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 4.5% S residual fuel.
- (3) For 2015 and 2030, max Daily emissions assume the ship observes VSR from 40 nm to the berth, and aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt6-106. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Precautionary Area**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.2	62.9	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.2	62.9	6.4	5.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.4	3.9	52.0	72.3	7.3	5.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.9	52.0	72.3	7.3	5.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.4	3.9	49.2	3.1	1.0	0.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.9	49.2	3.1	1.0	0.8
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.4	3.9	49.2	3.1	1.0	0.8
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.4	3.9	49.2	3.1	1.0	0.8

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt6-107. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.5	6.7	90.2	125.4	12.7	10.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.5	6.7	90.2	125.4	12.7	10.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	46.5	2.9	0.9	0.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	46.5	2.9	0.9	0.7
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	46.5	2.9	0.9	0.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	46.5	2.9	0.9	0.7

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

**Table E1.2-Alt6-108. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.2	43.0	59.8	6.1	4.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.2	43.0	59.8	6.1	4.9
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.2	40.7	2.5	0.8	0.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.2	40.7	2.5	0.8	0.6
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.2	3.2	40.7	2.5	0.8	0.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.2	40.7	2.5	0.8	0.6

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt6-109. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Turning

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.1	3.1	42.1	58.5	5.9	4.7
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.1	3.1	42.1	58.5	5.9	4.7
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.6	1.7	22.9	31.9	3.2	2.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.7	22.9	31.9	3.2	2.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.6	1.7	21.7	1.4	0.4	0.3
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.7	21.7	1.4	0.4	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.6	1.7	21.7	1.4	0.4	0.3
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.6	1.7	21.7	1.4	0.4	0.3

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt6-110. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Docking

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.2	3.4	45.1	62.7	6.4	5.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.2	3.4	45.1	62.7	6.4	5.1
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	49.2	68.3	6.9	5.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	49.2	68.3	6.9	5.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	46.5	2.9	0.9	0.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	46.5	2.9	0.9	0.7
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	1.3	3.7	46.5	2.9	0.9	0.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.3	3.7	46.5	2.9	0.9	0.7

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S distillate fuel.

Table E1.2-Alt6-111. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation

Hoteling

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	32.7	89.9	1,201.1	1,669.3	169.3	135.4
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	43.6	119.8	1,601.2	2,225.3	225.7	180.6
General Cargo Vessels	-	-	-	-	-	-
Subtotal	43.6	119.8	1,601.2	2,225.3	225.7	180.6
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	43.6	119.8	1,514.1	94.5	30.2	24.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	43.6	119.8	1,514.1	94.5	30.2	24.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	43.6	119.8	1,514.1	94.5	30.2	24.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	43.6	119.8	1,514.1	94.5	30.2	24.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the aux engines use 4.5% S residual fuel. and they do not use AMP.

(2) For 2015 and 2030, max Daily emissions assume the aux engines use 0.2% S residual fuel. and they do not use AMP.

Table E1.2-Alt6-112. Max Daily Emissions from OGV Auxiliary Engines - Alternative 6 with Mitigation Anchoring

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

**Table E1.2-Alt6-113. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt6-114. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Fairway: 20-Mile to Precautionary Area**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Auxiliary boilers are assumed not to operate in the fairway.

Table E1.2-Alt6-115. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation

Precautionary Area

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.05	0.28	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
General Cargo Vessels	0.00	0.00	0.03	0.18	0.01	0.01
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.07	0.25	0.02	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.04	0.13	0.01	0.01
General Cargo Vessels	0.00	0.00	0.04	0.15	0.01	0.01
Subtotal	0.0	0.0	0.1	0.5	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.12	0.08	0.02	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.04	0.03	0.01	0.00
General Cargo Vessels	0.00	0.01	0.08	0.05	0.01	0.01
Subtotal	0.0	0.0	0.2	0.2	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.01	0.12	0.08	0.02	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
General Cargo Vessels	0.01	0.02	0.15	0.09	0.02	0.02
Subtotal	0.0	0.0	0.3	0.2	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt6-116. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Harbor Transit - Inbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.05	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.04	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	0.00	0.00	0.02	0.02	0.00	0.00
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	0.00	0.00	0.04	0.03	0.01	0.01
Subtotal	0.0	0.0	0.1	0.1	0.0	0.0

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt6-117. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Harbor Transit - Outbound**

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.06	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.03	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.06	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.03	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	0.00	0.00	0.02	0.01	0.00	0.00
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.00	0.00	0.00
General Cargo Vessels	0.00	0.00	0.03	0.02	0.00	0.00
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-Alt6-118. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Turning

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.01	0.00	0.00
General Cargo Vessels	0.00	0.00	0.00	0.02	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	0.00	0.00	0.00	0.01	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.01	0.00	0.00
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.00	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.01	0.00	0.00
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Turning occurs during only one trip segment (arrival or departure).

Table E1.2-Alt6-119. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation

Docking

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.01	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.00	0.02	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.04	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.02	0.07	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.03	0.00	0.00
General Cargo Vessels	0.00	0.00	0.01	0.03	0.00	0.00
Subtotal	0.0	0.0	0.0	0.1	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	0.00	0.00	0.02	0.01	0.00	0.00
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.00	0.03	0.02	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.01	0.01	0.00	0.00
General Cargo Vessels	0.00	0.00	0.03	0.02	0.00	0.00
Subtotal	0.0	0.0	0.1	0.0	0.0	0.0

Mitigation measures include low sulfur fuel.

Table E1.2-Alt6-120. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation

Hoteling

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.13	1.30	7.99	0.42	0.33
Containerships 3,000 - 5,000 TEU	0.01	0.02	0.23	1.41	0.07	0.06
General Cargo Vessels	0.03	0.06	0.61	3.76	0.20	0.16
Subtotal	0.1	0.2	2.1	13.2	0.7	0.6
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.06	0.12	1.15	4.03	0.28	0.22
Containerships 3,000 - 5,000 TEU	0.02	0.04	0.43	1.52	0.10	0.08
General Cargo Vessels	0.04	0.09	0.88	3.09	0.21	0.17
Subtotal	0.1	0.3	2.5	8.6	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.21	2.00	1.29	0.30	0.24
Containerships 3,000 - 5,000 TEU	0.03	0.05	0.50	0.32	0.08	0.06
General Cargo Vessels	0.09	0.18	1.69	1.09	0.26	0.21
Subtotal	0.2	0.4	4.2	2.7	0.6	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.12	0.23	2.18	1.41	0.33	0.27
Containerships 3,000 - 5,000 TEU	0.02	0.05	0.43	0.28	0.07	0.05
General Cargo Vessels	0.16	0.33	3.11	2.01	0.47	0.38
Subtotal	0.3	0.6	5.7	3.7	0.9	0.7

Boilers are assumed to operate during hoteling regardless of whether the ship uses AMP.

Mitigation measures include low sulfur fuel.

Table E1.2-Alt6-121. Annual Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation

Anchoring

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.10	0.60	0.03	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.14	0.01	0.01
General Cargo Vessels	0.00	0.00	0.05	0.31	0.02	0.01
Subtotal	0.0	0.0	0.2	1.1	0.1	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.02	0.16	0.55	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.08	0.27	0.02	0.02
General Cargo Vessels	0.00	0.01	0.07	0.26	0.02	0.01
Subtotal	0.0	0.0	0.3	1.1	0.1	0.1
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.25	0.16	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.08	0.05	0.01	0.01
General Cargo Vessels	0.01	0.01	0.14	0.09	0.02	0.02
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.01	0.03	0.27	0.17	0.04	0.03
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.05	0.01	0.01
General Cargo Vessels	0.01	0.03	0.26	0.17	0.04	0.03
Subtotal	0.0	0.1	0.6	0.4	0.1	0.1

AMP mitigation would not apply during anchoring.

Mitigation measures include low sulfur fuel.

**Table E1.2-Alt6-122. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Fairway: AQMD Overwater Boundary to 20-Mile**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt6-123. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Fairway: 20-Mile to Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Auxiliary boilers are assumed not to operate in the fairway.

**Table E1.2-Alt6-124. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Precautionary Area**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.2	2.2	29.0	1.2	0.9
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.2	2.2	29.0	1.2	0.9
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.2	0.4	4.4	57.9	2.3	1.9
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.4	57.9	2.3	1.9
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.2	0.4	4.0	2.6	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.0	2.6	0.6	0.5
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.2	0.4	4.0	2.6	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	0.4	4.0	2.6	0.6	0.5

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt6-125. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Harbor Transit - Inbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt6-126. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Harbor Transit - Outbound**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	1.0	13.4	0.5	0.4
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	1.0	13.4	0.5	0.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.9	0.6	0.1	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.9	0.6	0.1	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.9	0.6	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt6-127. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Turning

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	7.1	0.3	0.2
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	7.1	0.3	0.2
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.0	0.1	0.5	0.3	0.1	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.5	0.3	0.1	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt6-128. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation

Docking

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.6	7.7	0.3	0.2
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.0	0.1	0.6	7.7	0.3	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.2	15.3	0.6	0.5
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.2	15.3	0.6	0.5
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.1	0.1	1.1	0.7	0.2	0.1
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.1	1.1	0.7	0.2	0.1

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

**Table E1.2-Alt6-129. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation
Hoteling**

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	2.3	4.5	47.8	624.4	25.1	20.1
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.3	4.5	47.8	624.4	25.1	20.1
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.2	8.4	88.7	1,159.2	46.7	37.3
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	88.7	1,159.2	46.7	37.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.2	8.4	79.8	51.5	12.2	9.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	79.8	51.5	12.2	9.7
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	4.2	8.4	79.8	51.5	12.2	9.7
General Cargo Vessels	-	-	-	-	-	-
Subtotal	4.2	8.4	79.8	51.5	12.2	9.7

Notes: (1) For 2005 and 2010, max Daily emissions assume the boilers use 4.5% S residual fuel.

(2) For 2015 and 2030, max Daily emissions assume the boilers use 0.2% S distillate fuel.

Table E1.2-Alt6-130. Max Daily Emissions from OGV Auxiliary Boilers - Alternative 6 with Mitigation Anchoring

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) Peak day ship activities are assumed not to include anchoring. Other ship activities would produce greater peak daily emissions.

Table E1.2-Alt6-131. Annual Emissions from Tugboat Main Engine - Alternative 6 with Mitigation

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.04	0.21	1.33	0.09	0.05	0.05
Containerships 3,000 - 5,000 TEU	0.01	0.05	0.32	0.02	0.01	0.01
General Cargo Vessels	0.12	0.63	4.07	0.27	0.16	0.15
Subtotal	0.2	0.9	5.7	0.4	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.05	0.34	2.05	0.00	0.06	0.06
Containerships 3,000 - 5,000 TEU	0.02	0.17	1.02	0.00	0.03	0.03
General Cargo Vessels	0.13	0.94	5.67	0.00	0.18	0.16
Subtotal	0.2	1.4	8.7	0.0	0.3	0.2
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.08	0.57	3.06	0.00	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.03	0.19	1.02	0.00	0.04	0.03
General Cargo Vessels	0.27	1.88	10.06	0.01	0.35	0.32
Subtotal	0.4	2.6	14.1	0.0	0.5	0.5
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.09	0.60	2.41	0.00	0.11	0.10
Containerships 3,000 - 5,000 TEU	0.02	0.16	0.64	0.00	0.03	0.03
General Cargo Vessels	0.49	3.44	13.73	0.01	0.61	0.56
Subtotal	0.6	4.2	16.8	0.0	0.8	0.7

Table E1.2-Alt6-132. Max Daily Emissions from Tugboat Main Engine - Alternative 6

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	1.95	9.78	63.55	4.22	2.55	2.34
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	1.9	9.8	63.5	4.2	2.5	2.3
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.80	19.56	118.20	0.07	3.67	3.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	118.2	0.1	3.7	3.4
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.80	19.56	104.77	0.07	3.67	3.37
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	104.8	0.1	3.7	3.4
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	2.80	19.56	77.99	0.07	3.49	3.21
General Cargo Vessels	-	-	-	-	-	-
Subtotal	2.8	19.6	78.0	0.1	3.5	3.2

Table E1.2-Alt6-133. Annual Emissions from Tugboat Auxiliary Engines - Alternative 6 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.01	0.08	0.01	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.00	0.02	0.00	0.00	0.00
General Cargo Vessels	0.01	0.04	0.26	0.02	0.01	0.01
Subtotal	0.0	0.1	0.4	0.0	0.0	0.0
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.02	0.13	0.00	0.00	0.00
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.00	0.00	0.00
General Cargo Vessels	0.01	0.07	0.36	0.00	0.01	0.01
Subtotal	0.0	0.1	0.6	0.0	0.0	0.0
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.21	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.07	0.00	0.00	0.00
General Cargo Vessels	0.02	0.13	0.70	0.00	0.03	0.03
Subtotal	0.0	0.2	1.0	0.0	0.0	0.0
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.00	0.04	0.17	0.00	0.01	0.01
Containerships 3,000 - 5,000 TEU	0.00	0.01	0.05	0.00	0.00	0.00
General Cargo Vessels	0.03	0.24	0.98	0.00	0.04	0.04
Subtotal	0.0	0.3	1.2	0.0	0.0	0.0

Table E1.2-Alt6-134. Max Daily Emissions from Tugboat Auxiliary Engines - Alternative 6

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.11	0.69	4.04	0.34	0.19	0.18
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.1	0.7	4.0	0.3	0.2	0.2
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.16	1.37	7.51	0.01	0.27	0.26
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.5	0.0	0.3	0.3
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.16	1.37	7.32	0.01	0.27	0.26
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	7.3	0.0	0.3	0.3
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	0.16	1.37	5.59	0.01	0.23	0.22
General Cargo Vessels	-	-	-	-	-	-
Subtotal	0.2	1.4	5.6	0.0	0.2	0.2

Table E1.2-Alt6-135. Annual Emissions from AMP Electricity Consumption - Alternative 6 with Mitigation

<i>Project Scenario/Activity</i>	<i>Tons Per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
<i>Project Year 2010</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.0	0.1	0.0	0.0	0.0
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.0	0.0	0.0	0.0
General Cargo Vessels	0.0	0.0	0.1	0.0	0.0	0.0
Subtotal	0.00	0.04	0.23	0.02	0.01	0.01
<i>Project Year 2015</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.1	0.8	0.1	0.0	0.0
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.1	0.0	0.0	0.0
General Cargo Vessels	0.0	0.1	0.7	0.1	0.0	0.0
Subtotal	0.01	0.28	1.62	0.17	0.06	0.06
<i>Project Year 2030</i>						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	0.0	0.3	1.7	0.2	0.1	0.1
Containerships 3,000 - 5,000 TEU	0.0	0.0	0.2	0.0	0.0	0.0
General Cargo Vessels	0.0	0.4	2.5	0.3	0.1	0.1
Subtotal	0.04	0.78	4.51	0.47	0.16	0.16

Note: These emissions represent regional power plant emissions associated with AMP generation.

Table E1.2-Alt6-136. Max Daily Emissions from AMP Electricity Consumption - Alternative 6 with Mitigation

Project Scenario/Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2010						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2015						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-
Project Year 2030						
Containerships 9,000 - 11,000 TEU	-	-	-	-	-	-
Containerships 8,000 - 9,000 TEU	-	-	-	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-	-	-	-
General Cargo Vessels	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-

Notes: (1) These emissions represent regional power plant emissions associated with AMP generation.

(2) Peak day conditions do not use AMP during any project year.

Table E1.2-Alt6-137. Summary of Annual Marine Vessel Emissions with Mitigation

Alternative 6 with Mitigation

Project Scenario/Activity	Tons Per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						<i>PM</i>
Ships - AQMD to 20 mile	1.5	3.5	45.5	26.8	3.8	3.0
Ships - 20 mile to PA	1.4	3.2	38.0	22.2	3.3	2.6
Ships - PA	0.5	1.1	10.2	5.8	0.9	0.7
Ships - Harbor Transit	0.4	0.7	5.7	2.7	0.6	0.5
Ships - Turning & Docking	0.4	0.5	4.2	1.8	0.5	0.4
Ships - Anchoring	0.1	0.3	4.4	3.8	0.4	0.3
Ships - Hoteling	1.6	4.3	55.3	47.4	4.9	3.9
AMP - Hoteling	-	-	-	-	-	-
Tugboats	0.2	0.9	6.1	0.4	0.2	0.2
Total	6.1	14.5	169.4	111.0	14.6	11.7
Project Year 2010						
Ships - AQMD to 20 mile	1.5	3.4	30.1	11.2	1.9	1.5
Ships - 20 mile to PA	2.0	4.5	39.4	14.7	2.5	2.0
Ships - PA	0.9	1.9	15.0	5.5	1.0	0.8
Ships - Harbor Transit	0.8	1.2	9.0	2.6	0.6	0.5
Ships - Turning & Docking	0.7	0.9	6.7	1.7	0.5	0.4
Ships - Anchoring	0.2	0.6	7.8	3.8	0.4	0.4
Ships - Hoteling	1.7	4.5	57.6	28.5	3.4	2.7
AMP - Hoteling	0.0	0.0	0.2	0.0	0.0	0.0
Tugboats	0.2	1.5	9.3	0.0	0.3	0.3
Total	7.9	18.6	175.0	68.1	10.7	8.6
Project Year 2015						
Ships - AQMD to 20 mile	2.6	5.8	42.1	2.6	1.4	1.2
Ships - 20 mile to PA	3.4	7.6	55.1	3.4	1.9	1.5
Ships - PA	1.5	3.2	20.8	1.3	0.8	0.6
Ships - Harbor Transit	1.3	2.0	13.3	0.7	0.5	0.4
Ships - Turning & Docking	1.1	1.5	9.8	0.5	0.4	0.3
Ships - Anchoring	0.4	1.0	12.6	1.1	0.3	0.3
Ships - Hoteling	2.1	5.6	69.1	6.8	1.9	1.5
AMP - Hoteling	0.0	0.3	1.6	0.2	0.1	0.1
Tugboats	0.4	2.8	15.1	0.0	0.5	0.5
Total	12.7	29.9	239.6	16.5	7.7	6.3
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	3.5	8.0	60.1	3.7	2.1	1.7
Ships - 20 mile to PA	4.6	10.4	78.7	4.9	2.7	2.2
Ships - PA	1.9	4.1	28.1	1.8	1.0	0.8
Ships - Harbor Transit	1.6	2.5	17.0	0.9	0.6	0.5
Ships - Turning & Docking	1.4	1.8	12.0	0.6	0.4	0.3
Ships - Anchoring	0.5	1.3	16.0	1.3	0.4	0.3
Ships - Hoteling	1.2	3.0	35.8	5.6	1.5	1.2
AMP - Hoteling	0.0	0.8	4.5	0.5	0.2	0.2
Tugboats	0.6	4.5	18.0	0.0	0.8	0.7
Total	15.2	36.5	270.1	19.4	9.6	7.8

AMP Hoteling emissions include the emissions generated by regional power plants to generate the electricity consumed by the ships while hoteling.

**Table E1.2-Alt6-138. Summary of Maximum Daily Marine Vessel Emissions with Mitigation
Alternative 6 with Mitigation**

<i>Project Scenario/Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Project Year 2005						
Ships - AQMD to 20 mile	38	90	1,158	1,138	129	103
Ships - 20 mile to PA	50	117	1,517	1,490	168	135
Ships - PA	15	30	243	237	33	26
Ships - Harbor Transit	15	21	176	160	28	22
Ships - Turning & Docking	15	20	171	153	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	35	94	1,249	2,294	194	156
AMP - Hoteling	-	-	-	-	-	-
Tugboats	2	10	68	5	3	3
Total	170	383	4,583	5,477	582	466
Project Year 2010						
Ships - AQMD to 20 mile	28	64	661	632	79	63
Ships - 20 mile to PA	37	84	865	828	103	82
Ships - PA	20	43	380	397	49	39
Ships - Harbor Transit	16	26	205	199	32	26
Ships - Turning & Docking	16	20	164	142	27	22
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	48	128	1,690	3,384	272	218
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	126	0	4	4
Total	167	386	4,090	5,582	566	454
Project Year 2015						
Ships - AQMD to 20 mile	28	64	441	27	15	12
Ships - 20 mile to PA	37	84	578	35	20	16
Ships - PA	20	43	257	17	10	8
Ships - Harbor Transit	16	26	159	8	6	5
Ships - Turning & Docking	16	20	127	6	5	4
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	48	128	1,594	146	42	34
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	112	0	4	4
Total	167	386	3,267	239	102	82
Project Year 2030 / 2045						
Ships - AQMD to 20 mile	28	64	441	27	15	12
Ships - 20 mile to PA	37	84	578	35	20	16
Ships - PA	20	43	257	17	10	8
Ships - Harbor Transit	16	26	159	8	6	5
Ships - Turning & Docking	16	20	127	6	5	4
Ships - Anchoring	-	-	-	-	-	-
Ships - Hoteling	48	128	1,594	146	42	34
AMP - Hoteling	-	-	-	-	-	-
Tugboats	3	21	84	0	4	3
Total	167	386	3,238	239	101	82

**Table E1.2-Alt6-143. Truck Trips and Mileage for the Berth 97-109 Terminal
Alternative 6**

<i>Study Year</i>	<i>Annual Trips</i>	<i>Annual VMT Off-Terminal</i>	<i>Peak Day Factor</i>
2005	288,758	10,101,102	0.00366
2010	542,958	20,998,839	0.00366
2015	797,157	31,896,575	0.00366
2030	1,187,908	51,354,795	0.00335
2045	1,187,908	51,354,795	0.00335

Source: Iteris 2007.

Year 2010 values are interpolated.

Table E1.2-Alt6-144. On-Road Truck Operational Data for the Berths 97-109 Terminal Alternative 6

<i>Activity/Project Scenario</i>	<i>Idling Time/ Trip (Hrs) (2)</i>	<i>Miles/ Trip (1)</i>	<i>Idling Hrs/ Year</i>	<i>Miles/ Year</i>
<i>On-Terminal</i>				
Year 2005	0.17	0.75	48,126	216,568
Year 2010	0.17	0.75	90,493	407,218
Year 2015	0.17	0.75	132,860	597,868
Year 2030	0.17	0.75	197,985	890,931
Year 2045	0.17	0.75	197,985	890,931
<i>Off-Terminal</i>				
Year 2005	0.25	--	72,189	10,101,102
Year 2010	0.25	--	135,739	20,998,839
Year 2015	0.25	--	199,289	31,896,575
Year 2030	0.25	--	296,977	51,354,795
Year 2045	0.25	--	296,977	51,354,795

Notes: (1) On-terminal mileage/trip based upon terminal-specific data provided by Starcrest (2007). Round trip distance of 1.5 miles is divided by 2 to produce the mileage per one-way trip.

(2) Terminal-specific on-terminal idling time of 20 minutes per round trip is provided by Starcrest (2007). Idling time is divided by 2 to produce the average idling time per one-way trip.

The off-terminal idling time assumes 30 minutes of idling time per round trip (0.25 hr per one-way trip).

Table E1.2-Alt6-147. Annual Truck Emissions for the Berths 97-109 Terminal

Alternative 6

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	0.80	2.64	4.99	0.03	0.14	0.13
Year 2005 - Driving	2.09	6.37	8.11	0.06	2.61	0.94
Subtotal	2.89	9.00	13.10	0.09	2.76	1.07
<i>Project Year 2010</i>						
Year 2010 - Idling	1.19	4.62	10.55	0.01	0.17	0.16
Year 2010 - Driving	3.10	8.78	12.10	0.01	4.46	1.34
Subtotal	4.29	13.40	22.65	0.02	4.63	1.50
<i>Project Year 2015</i>						
Year 2015 - Idling	1.41	6.39	16.78	0.01	0.14	0.13
Year 2015 - Driving	2.65	7.14	10.15	0.02	5.92	1.39
Subtotal	4.07	13.53	26.94	0.03	6.06	1.52
<i>Project Year 2030</i>						
Year 2030 - Idling	1.68	8.98	26.61	0.01	0.04	0.03
Year 2030 - Driving	1.40	3.83	5.62	0.03	8.16	1.46
Subtotal	3.07	12.82	32.23	0.04	8.19	1.49
<i>Project Year 2045</i>						
Year 2045 - Idling	1.65	8.95	26.69	0.01	0.03	0.02
Year 2045 - Driving	1.29	3.53	5.21	0.03	8.14	1.45
Subtotal	2.94	12.49	31.89	0.04	8.17	1.47
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.21	3.95	7.49	0.04	0.21	0.20
Year 2005 - Driving	25.54	129.40	245.29	1.73	17.21	12.42
Subtotal	26.75	133.35	252.78	1.78	17.42	12.62
<i>Project Year 2010</i>						
Year 2010 - Idling	1.79	6.93	15.83	0.01	0.26	0.24
Year 2010 - Driving	42.76	201.60	390.87	0.44	27.00	17.74
Subtotal	44.55	208.53	406.70	0.45	27.26	17.98
<i>Project Year 2015</i>						
Year 2015 - Idling	2.12	9.59	25.18	0.01	0.21	0.20
Year 2015 - Driving	38.27	167.85	327.73	0.68	27.93	14.92
Subtotal	40.39	177.43	352.91	0.69	28.14	15.11
<i>Project Year 2030</i>						
Year 2030 - Idling	2.51	13.48	39.91	0.02	0.05	0.05
Year 2030 - Driving	23.88	98.69	186.70	1.10	28.87	9.16
Subtotal	26.40	112.17	226.61	1.12	28.93	9.21
<i>Project Year 2045</i>						
Year 2045 - Idling	2.48	13.43	40.03	0.02	0.04	0.03
Year 2045 - Driving	22.08	90.90	172.26	1.10	28.36	8.69
Subtotal	24.57	104.33	212.29	1.12	28.40	8.73

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt6-148. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 6 without Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	29.6	142.4	265.9	1.9	20.2	13.7
Year 2010	48.8	221.9	429.3	0.5	31.9	19.5
Year 2015	44.5	191.0	379.8	0.7	34.2	16.6
Year 2030	29.5	125.0	258.8	1.2	37.1	10.7
Year 2045	27.5	116.8	244.2	1.2	36.6	10.2

Table E1.2-Alt6-149. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 6 without Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	217	1,042	1,947	14	148	100
Year 2010	358	1,625	3,143	3	233	143
Year 2015	325	1,398	2,781	5	250	122
Year 2030	198	838	1,735	8	249	72
Year 2045	184	783	1,637	8	245	68

Table E1.2-Alt6-150. Annual Truck Emissions for the Berths 97-109 Terminal

Alternative 6 with Mitigation

Location/Project Scenario - Mode	Tons per Year					
	VOC	CO	NOx	SOx	PM10 (2)	PM2.5 (2)
<i>On-Terminal (1)</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	0.80	2.64	4.99	0.03	0.14	0.13
Year 2005 - Driving	2.09	6.37	8.11	0.06	2.61	0.94
Subtotal	2.89	9.00	13.10	0.09	2.76	1.07
<i>Project Year 2010</i>						
Year 2010 - Idling	0.91	4.27	11.56	0.01	0.07	0.06
Year 2010 - Driving	1.69	4.72	7.84	0.01	4.03	0.95
Subtotal	2.60	8.99	19.40	0.02	4.10	1.01
<i>Project Year 2015</i>						
Year 2015 - Idling	0.67	2.81	8.82	0.00	0.02	0.02
Year 2015 - Driving	0.45	1.25	2.60	0.01	5.46	0.97
Subtotal	1.12	4.06	11.42	0.01	5.48	0.99
<i>Project Year 2030</i>						
Year 2030 - Idling	1.08	3.30	12.64	0.00	0.07	0.07
Year 2030 - Driving	0.55	1.63	4.63	0.00	8.18	1.49
Subtotal	1.63	4.93	17.27	0.00	8.25	1.56
<i>Project Year 2045</i>						
Year 2045 - Idling	1.08	3.30	12.64	0.00	0.07	0.07
Year 2045 - Driving	0.55	1.63	4.63	0.00	8.18	1.49
Subtotal	1.63	4.93	17.27	0.00	8.25	1.56
<i>Off-Terminal</i>						
<i>Project Year 2005</i>						
Year 2005 - Idling	1.21	3.95	7.49	0.04	0.21	0.20
Year 2005 - Driving	25.54	129.40	245.29	1.73	17.21	12.42
Subtotal	26.75	133.35	252.78	1.78	17.42	12.62
<i>Project Year 2010</i>						
Year 2010 - Idling	1.37	6.41	17.33	0.01	0.10	0.10
Year 2010 - Driving	23.60	108.37	243.74	0.44	18.00	9.45
Subtotal	24.97	114.78	261.07	0.45	18.11	9.55
<i>Project Year 2015</i>						
Year 2015 - Idling	1.00	4.22	13.23	0.00	0.04	0.04
Year 2015 - Driving	13.34	44.42	106.93	0.20	17.44	5.41
Subtotal	14.34	48.63	120.16	0.21	17.48	5.44
<i>Project Year 2030</i>						
Year 2030 - Idling	1.62	4.95	18.96	0.00	0.10	0.10
Year 2030 - Driving	31.61	93.69	266.66	0.00	30.85	11.53
Subtotal	33.23	98.64	285.62	0.00	30.95	11.64
<i>Project Year 2045</i>						
Year 2045 - Idling	1.62	4.95	18.96	0.00	0.10	0.10
Year 2045 - Driving	31.61	93.69	266.66	0.00	30.85	11.53
Subtotal	33.23	98.64	285.62	0.00	30.95	11.64

Notes: (1) On-terminal driving emissions are calculated with 10 mph emission factors.

(2) Paved road dust emissions are included with the PM10 and PM2.5 calculations.

Table E1.2-Alt6-151. Summary of Annual Truck Emissions for the Berths 97-109 Terminal - Alternative 6 with Mitigation

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	29.6	142.4	265.9	1.9	20.2	13.7
Year 2010	27.6	123.8	280.5	0.5	22.2	10.6
Year 2015	15.5	52.7	131.6	0.2	23.0	6.4
Year 2030	34.9	103.6	302.9	-	39.2	13.2
Year 2045	34.9	103.6	302.9	-	39.2	13.2

Table E1.2-Alt6-152. Summary of Peak Daily Truck Emissions for the Berths 97-109 Terminal - Alternative 6 with Mitigation

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	217	1,042	1,947	14	148	100
Year 2010	202	906	2,053	3	163	77
Year 2015	113	386	963	2	168	47
Year 2030	234	694	2,031	-	263	88
Year 2045	234	694	2,031	-	263	88

Table E1.2-Alt6-153. Summary of Annual Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 6

<i>Project Study Year</i>	<i>Tons per Year</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	0.4	4.7	0.6	-	0.5	0.1
Year 2010	0.5	5.6	0.7	0.0	1.0	0.2
Year 2015	0.4	5.4	0.7	0.0	1.5	0.3
Year 2030	0.3	3.2	0.3	0.0	1.7	0.3
Year 2045	0.2	2.7	0.3	0.0	1.7	0.3

Table E1.2-Alt6-154. Summary of Peak Daily Worker Commute Emissions for the Berths 97-109 Terminal - Alternative 6

<i>Project Study Year</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
Year 2005	2.7	31.2	4.2	-	3.6	0.7
Year 2010	3.1	37.5	5.0	0.1	6.8	1.3
Year 2015	2.9	36.1	4.8	0.1	9.9	1.9
Year 2030	1.9	21.3	2.3	0.1	11.6	2.2
Year 2045	1.6	17.8	1.8	0.1	11.6	2.2

Table E1.2-Alt6-155. Train Trips Associated with the Alternative 6

<i>Year</i>	<i>Round Trips</i>	
	<i>Annual</i>	<i>Peak Day</i>
Berths 121-131 ICTF		
2005	-	-
2010	-	-
2015	-	-
2030	-	-
2045	-	-
Off-Dock Railyards		
2005	74	1
2010	138	1
2015	202	1
2030	245	1
2045	245	1

Table E1.2-Alt6-162. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.42	1.55	3.76	0.03	0.20	0.19
Top Picks	0.11	0.34	1.41	0.01	0.05	0.05
Line Haul Locomotive (SCAB) - Road Haul	0.56	1.56	10.74	0.72	0.37	0.34
Line Haul Locomotive at Railyard	0.06	0.17	1.15	0.08	0.04	0.04
Yard Locomotive - Switching	0.03	0.06	0.53	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.16	0.58	1.41	0.01	0.08	0.07
Top Picks	0.04	0.13	0.53	0.00	0.02	0.02
Line Haul Locomotive (SCAB) - Road Haul	0.56	1.56	10.74	0.72	0.37	0.34
Line Haul Locomotive at Railyard	0.02	0.07	0.46	0.03	0.02	0.01
Yard Locomotive - Switching	0.03	0.06	0.53	0.00	0.01	0.01

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt6-163. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	2.69	0.12	0.01	0.01	0.01
Top Picks	0.11	0.68	2.79	0.00	0.08	0.08
Line Haul Locomotive (SCAB) - Road Haul	0.89	2.89	15.86	0.34	0.52	0.48
Line Haul Locomotive at Railyard	0.06	0.19	1.02	0.02	0.03	0.03
Yard Locomotive - Switching	0.05	0.10	0.82	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.01	0.04	0.00	0.00	0.00
Top Picks	0.04	0.26	1.05	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.89	2.89	15.86	0.34	0.52	0.48
Line Haul Locomotive at Railyard	0.04	0.12	0.68	0.01	0.02	0.02
Yard Locomotive - Switching	0.05	0.10	0.82	0.00	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-164. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.18	0.18	0.01	0.01	0.01
Top Picks	0.11	1.05	4.26	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.21	4.22	21.65	0.02	0.65	0.60
Line Haul Locomotive at Railyard	0.08	0.27	1.40	0.00	0.04	0.04
Yard Locomotive - Switching	0.08	0.15	1.04	0.00	0.03	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.57	0.07	0.00	0.00	0.00
Top Picks	0.04	0.39	1.60	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.21	4.22	21.65	0.02	0.65	0.60
Line Haul Locomotive at Railyard	0.05	0.18	0.93	0.00	0.03	0.03
Yard Locomotive - Switching	0.08	0.15	1.04	0.00	0.03	0.03

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-165. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	5.08	0.22	0.01	0.02	0.01
Top Picks	0.05	0.68	0.59	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.16	5.14	21.54	0.02	0.57	0.53
Line Haul Locomotive at Railyard	0.07	0.33	1.39	0.00	0.04	0.03
Yard Locomotive - Switching	0.08	0.18	1.02	0.00	0.03	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.91	0.08	0.00	0.01	0.01
Top Picks	0.02	0.25	0.22	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.16	5.14	21.54	0.02	0.57	0.53
Line Haul Locomotive at Railyard	0.05	0.22	0.93	0.00	0.02	0.02
Yard Locomotive - Switching	0.08	0.18	1.02	0.00	0.03	0.03

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-166. Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 6 - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	5.08	0.22	0.01	0.02	0.01
Top Picks	0.05	0.68	0.59	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.04	5.14	19.99	0.02	0.49	0.45
Line Haul Locomotive at Railyard	0.07	0.33	1.29	0.00	0.03	0.03
Yard Locomotive - Switching	0.06	0.18	0.85	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.91	0.08	0.00	0.01	0.01
Top Picks	0.02	0.25	0.22	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.04	5.14	19.99	0.02	0.49	0.45
Line Haul Locomotive at Railyard	0.04	0.22	0.86	0.00	0.02	0.02
Yard Locomotive - Switching	0.06	0.18	0.85	0.00	0.02	0.02

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-167. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2005

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

Table E1.2-Alt6-168. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 - Year 2010

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-169. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2015

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-170. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2030

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-171. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 6 - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2

Notes: (1) Top picks at the Berth 121-131 railyard use emulsified fuel plus a DOC.

(2) The existing switch locomotive at B121-131 will be replaced with a Tier 2 locomotive in 2008.

Table E1.2-Alt6-172. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.42	1.55	3.76	0.03	0.20	0.19
Top Picks	0.11	0.34	1.41	0.01	0.05	0.05
Line Haul Locomotive (SCAB) - Road Haul	0.56	1.56	10.74	0.72	0.37	0.34
Line Haul Locomotive at Railyard	0.06	0.17	1.15	0.08	0.04	0.04
Yard Locomotive - Switching	0.03	0.06	0.53	0.00	0.01	0.01
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.16	0.58	1.41	0.01	0.08	0.07
Top Picks	0.04	0.13	0.53	0.00	0.02	0.02
Line Haul Locomotive (SCAB) - Road Haul	0.56	1.56	10.74	0.72	0.37	0.34
Line Haul Locomotive at Railyard	0.02	0.07	0.46	0.03	0.02	0.01
Yard Locomotive - Switching	0.03	0.06	0.53	0.00	0.01	0.01

Table E1.2-Alt6-173. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 with Mitigation - Year 2010

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.02	2.69	0.12	0.01	0.01	0.01
Top Picks	0.11	0.68	2.79	0.00	0.08	0.08
Line Haul Locomotive (SCAB) - Road Haul	0.89	2.89	15.86	0.34	0.52	0.48
Line Haul Locomotive at Railyard	0.06	0.19	1.02	0.02	0.03	0.03
Yard Locomotive - Switching	0.05	0.10	0.82	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.01	0.04	0.00	0.00	0.00
Top Picks	0.04	0.26	1.05	0.00	0.03	0.03
Line Haul Locomotive (SCAB) - Road Haul	0.89	2.89	15.86	0.34	0.52	0.48
Line Haul Locomotive at Railyard	0.04	0.12	0.68	0.01	0.02	0.02
Yard Locomotive - Switching	0.05	0.10	0.82	0.00	0.02	0.02

Table E1.2-Alt6-174. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 with Mitigation - Year 2015

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (1)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (1)	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	4.18	0.18	0.01	0.01	0.01
Top Picks	0.11	1.05	4.26	0.00	0.12	0.11
Line Haul Locomotive (SCAB) - Road Haul	1.21	4.22	21.65	0.02	0.65	0.60
Line Haul Locomotive at Railyard	0.08	0.27	1.40	0.00	0.04	0.04
Yard Locomotive - Switching	0.08	0.15	1.04	0.00	0.03	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.57	0.07	0.00	0.00	0.00
Top Picks	0.04	0.39	1.60	0.00	0.05	0.04
Line Haul Locomotive (SCAB) - Road Haul	1.21	4.22	21.65	0.02	0.65	0.60
Line Haul Locomotive at Railyard	0.05	0.18	0.93	0.00	0.03	0.03
Yard Locomotive - Switching	0.08	0.15	1.04	0.00	0.03	0.03

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt6-175. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 with Mitigation - Year 2030

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (1)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (1)	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	5.08	0.22	0.01	0.02	0.01
Top Picks	0.05	0.68	0.59	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.16	5.14	21.54	0.02	0.57	0.53
Line Haul Locomotive at Railyard	0.07	0.33	1.39	0.00	0.04	0.03
Yard Locomotive - Switching	0.08	0.18	1.02	0.00	0.03	0.03
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.91	0.08	0.00	0.01	0.01
Top Picks	0.02	0.25	0.22	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.16	5.14	21.54	0.02	0.57	0.53
Line Haul Locomotive at Railyard	0.05	0.22	0.93	0.00	0.02	0.02
Yard Locomotive - Switching	0.08	0.18	1.02	0.00	0.03	0.03

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt6-176. Annual Train and Associated Cargo Handling Equipment Emissions

Alternative 6 with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (1)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (1)	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.03	5.08	0.22	0.01	0.02	0.01
Top Picks	0.05	0.68	0.59	0.00	0.01	0.01
Line Haul Locomotive (SCAB) - Road Haul	1.04	5.14	19.99	0.02	0.49	0.45
Line Haul Locomotive at Railyard	0.07	0.33	1.29	0.00	0.03	0.03
Yard Locomotive - Switching	0.06	0.18	0.85	0.00	0.02	0.02
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.01	1.91	0.08	0.00	0.01	0.01
Top Picks	0.02	0.25	0.22	0.00	0.00	0.00
Line Haul Locomotive (SCAB) - Road Haul	1.04	5.14	19.99	0.02	0.49	0.45
Line Haul Locomotive at Railyard	0.04	0.22	0.86	0.00	0.02	0.02
Yard Locomotive - Switching	0.06	0.18	0.85	0.00	0.02	0.02

(1) DPF on yard locomotives at the on-dock railyard.

Table E1.2-Alt6-177. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2005

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	11.4	41.6	100.9	0.8	5.4	5.0
Top Picks	3.0	9.2	37.9	0.3	1.3	1.2
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	2.2	6.0	41.4	2.8	1.4	1.3
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	4.3	15.6	37.9	0.3	2.0	1.9
Top Picks	1.1	3.4	14.2	0.1	0.5	0.5
Line Haul Locomotive (SCAB) - Road Haul	20.1	55.9	384.8	25.6	13.4	12.3
Line Haul Locomotive at Railyard	0.9	2.4	16.5	1.1	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	14.2	0.1	0.4	0.3

**Table E1.2-Alt6-178. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2010**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.2	38.9	1.7	0.1	0.1	0.1
Top Picks	1.6	9.9	40.4	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	1.1	3.6	19.8	0.4	0.6	0.6
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	14.6	0.6	0.0	0.0	0.0
Top Picks	0.6	3.7	15.1	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	17.3	55.9	306.5	6.7	10.1	9.3
Line Haul Locomotive at Railyard	0.7	2.4	13.2	0.3	0.4	0.4
Yard Locomotive - Switching	0.8	1.5	11.8	0.0	0.3	0.3

Table E1.2-Alt6-179. Peak Daily Train and Associated Cargo Handling Equipment Emissions

Alternative 6 with Mitigation - Year 2015

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	1.1	10.4	42.2	0.0	1.2	1.1
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	1.0	3.6	18.5	0.0	0.6	0.5
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.4	3.9	15.8	0.0	0.5	0.4
Line Haul Locomotive (SCAB) - Road Haul	16.0	55.9	286.3	0.2	8.7	8.0
Line Haul Locomotive at Railyard	0.7	2.4	12.3	0.0	0.4	0.3
Yard Locomotive - Switching	0.8	1.5	10.4	0.0	0.3	0.3

**Table E1.2-Alt6-180. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2030**

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.8	3.6	15.1	0.0	0.4	0.4
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	12.6	55.9	234.2	0.2	6.3	5.8
Line Haul Locomotive at Railyard	0.5	2.4	10.1	0.0	0.3	0.2
Yard Locomotive - Switching	0.6	1.5	8.3	0.0	0.3	0.2

Table E1.2-Alt6-181. Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation - Year 2045

ICTF/Train Direction/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Berths 121-131/Outbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching (2)	-	-	-	-	-	-
<i>Berths 121-131/Inbound</i>						
Yard Tractor	-	-	-	-	-	-
Top Picks (1)	-	-	-	-	-	-
Line Haul Locomotive (SCAB) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive (near Port) - Road Haul	-	-	-	-	-	-
Line Haul Locomotive at Railyard	-	-	-	-	-	-
Yard Locomotive - Switching	-	-	-	-	-	-
<i>Off-Dock Railyards/Outbound</i>						
Yard Tractor	0.3	41.5	1.8	0.1	0.1	0.1
Top Picks	0.4	5.5	4.8	0.0	0.1	0.1
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.7	3.6	14.0	0.0	0.3	0.3
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2
<i>Off-Dock Railyards/Inbound</i>						
Yard Tractor	0.1	15.5	0.7	0.0	0.0	0.0
Top Picks	0.1	2.1	1.8	0.0	0.0	0.0
Line Haul Locomotive (SCAB) - Road Haul	11.3	55.9	217.3	0.2	5.3	4.9
Line Haul Locomotive at Railyard	0.5	2.4	9.3	0.0	0.2	0.2
Yard Locomotive - Switching	0.5	1.5	7.0	0.0	0.2	0.2

**Table E1.2-Alt6-182. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 6**

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	0.7	2.6	7.1	0.1	0.3	0.3
Trains	1.3	3.5	24.1	1.5	0.8	0.8
Total	2.0	6.1	31.3	1.6	1.2	1.1
<i>Project Year 2010</i>						
Railyard Equipment	0.2	4.6	4.0	0.0	0.1	0.1
Trains	2.0	6.3	35.1	0.7	1.1	1.1
Total	2.2	10.9	39.1	0.7	1.3	1.2
<i>Project Year 2015</i>						
Railyard Equipment	0.2	7.2	6.1	0.0	0.2	0.2
Trains	2.7	9.2	47.7	0.0	1.4	1.3
Total	2.9	16.4	53.8	0.1	1.6	1.5
<i>Project Year 2030</i>						
Railyard Equipment	0.1	7.9	1.1	0.0	0.0	0.0
Trains	2.6	11.2	47.4	0.0	1.3	1.2
Total	2.7	19.1	48.6	0.1	1.3	1.2
<i>Project Year 2045</i>						
Railyard Equipment	0.1	7.9	1.1	0.0	0.0	0.0
Trains	2.3	11.2	43.8	0.0	1.1	1.0
Total	2.4	19.1	44.9	0.1	1.1	1.0

**Table E1.2-Alt6-183. Summary of Peak Daily Train and Associated Cargo Handling Equipment Emissions
Alternative 6**

Project Scenario/Source Activity	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	19.8	69.8	190.9	1.6	9.3	8.5
Trains	44.8	123.1	856.0	55.4	29.5	27.2
Total	64.6	192.9	1,046.9	57.0	38.8	35.7
<i>Project Year 2010</i>						
Railyard Equipment	2.6	67.1	57.9	0.2	1.8	1.7
Trains	38.0	120.7	669.7	14.0	21.9	20.1
Total	40.5	187.8	727.6	14.2	23.7	21.8
<i>Project Year 2015</i>						
Railyard Equipment	1.9	71.3	60.5	0.2	1.9	1.7
Trains	35.2	120.7	624.2	0.4	18.9	17.4
Total	37.1	192.0	684.7	0.6	20.7	19.1
<i>Project Year 2030</i>						
Railyard Equipment	0.9	64.6	9.1	0.2	0.3	0.2
Trains	27.8	120.7	510.2	0.4	13.7	12.6
Total	28.7	185.3	519.2	0.6	14.0	12.9
<i>Project Year 2045</i>						
Railyard Equipment	0.9	64.6	9.1	0.2	0.3	0.2
Trains	24.8	120.7	471.8	0.4	11.6	10.7
Total	25.7	185.3	480.9	0.6	11.9	10.9

**Table E1.2-Alt6-184. Summary of Annual Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation**

Project Scenario/Source Activity	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Railyard Equipment	0.7	2.6	7.1	0.1	0.3	0.3
Trains	1.3	3.5	24.1	1.5	0.8	0.8
Total	2.0	6.1	31.3	1.6	1.2	1.1
<i>Project Year 2010</i>						
Railyard Equipment	0.2	4.6	4.0	0.0	0.1	0.1
Trains	2.0	6.3	35.1	0.7	1.1	1.1
Total	2.2	10.9	39.1	0.7	1.3	1.2
<i>Project Year 2015</i>						
Railyard Equipment	0.2	7.2	6.1	0.0	0.2	0.2
Trains	2.7	9.2	47.7	0.0	1.4	1.3
Total	2.9	16.4	53.8	0.1	1.6	1.5
<i>Project Year 2030</i>						
Railyard Equipment	0.1	7.9	1.1	0.0	0.0	0.0
Trains	2.6	11.2	47.4	0.0	1.3	1.2
Total	2.7	19.1	48.6	0.1	1.3	1.2
<i>Project Year 2045</i>						
Railyard Equipment	0.1	7.9	1.1	0.0	0.0	0.0
Trains	2.3	11.2	43.8	0.0	1.1	1.0
Total	2.4	19.1	44.9	0.1	1.1	1.0

**Table E1.2-Alt6-185. Summary of Peak Day Train and Associated Cargo Handling Equipment Emissions
Alternative 6 with Mitigation**

<i>Project Scenario/Source Activity</i>	<i>Pounds per Day</i>					
	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>PM2.5</i>
<i>Project Year 2005</i>						
Railyard Equipment	19.8	69.8	190.9	1.6	9.3	8.5
Trains	44.8	123.1	856.0	55.4	29.5	27.2
Total	64.6	192.9	1,046.9	57.0	38.8	35.7
<i>Project Year 2010</i>						
Railyard Equipment	2.6	67.1	57.9	0.2	1.8	1.7
Trains	38.0	120.7	669.7	14.0	21.9	20.1
Total	40.5	187.8	727.6	14.2	23.7	21.8
<i>Project Year 2015</i>						
Railyard Equipment	1.9	71.3	60.5	0.2	1.9	1.7
Trains	35.2	120.7	624.2	0.4	18.9	17.4
Total	37.1	192.0	684.7	0.6	20.7	19.1
<i>Project Year 2030</i>						
Railyard Equipment	0.9	64.6	9.1	0.2	0.3	0.2
Trains	27.8	120.7	510.2	0.4	13.7	12.6
Total	28.7	185.3	519.2	0.6	14.0	12.9
<i>Project Year 2045</i>						
Railyard Equipment	0.9	64.6	9.1	0.2	0.3	0.2
Trains	24.8	120.7	471.8	0.4	11.6	10.7
Total	25.7	185.3	480.9	0.6	11.9	10.9

Table E.1.2-Alt6-186. Annual Terminal Equipment Emissions Without Mitigation - Alternative 6

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	2,553,306	FL175_U	2.24	9.78	24.34	0.17	1.17	1.07
Forklift >175-250	1,366,114	FL250_U	1.44	4.89	13.39	0.09	0.66	0.61
Forklift >25-50	634,474	FL50_U	1.80	4.60	4.59	0.05	0.52	0.47
RTG >175-250	1,263,977	RTG250_U	0.50	2.23	8.08	0.08	0.26	0.24
Side pick >120-175	153,001	SP175_U	0.15	0.52	1.45	0.01	0.07	0.06
Top pick >175-250	2,632,422	TH250_U	1.70	5.11	21.13	0.17	0.74	0.69
Yard tractor >120-175	9,475,942	YTD175_U	8.44	30.93	75.09	0.62	4.03	3.71
Other Equipment	22,247,338	OTHER_U	20.38	87.86	177.97	1.53	12.12	11.15
Total			36.7	145.9	326.0	2.7	19.6	18.0
Project Year 2010								
Forklift >120-175	3,827,313	FL175_U	1.73	15.66	38.02	0.03	1.40	1.29
Forklift >175-250	2,048,680	FL250_U	1.11	7.77	20.67	0.02	0.84	0.77
Forklift >25-50	950,835	FL50_U	1.39	7.30	7.08	0.01	0.65	0.60
RTG >175-250	1,859,231	RTG250_U	0.80	3.43	10.48	0.01	0.38	0.35
Side pick >120-175	224,473	SP175_U	0.11	0.80	2.20	0.00	0.09	0.08
Top pick >175-250	3,866,289	TH250_U	1.33	8.08	33.08	0.03	1.00	0.92
Yard tractor >120-175	13,930,817	YTD175_U	0.27	42.57	1.87	0.11	0.12	0.11
Other Equipment	33,369,046	OTHER_U	21.33	137.47	277.06	0.26	17.17	15.80
Total			28.1	223.1	390.5	0.5	21.6	19.9
Project Year 2015								
Forklift >120-175	7,636,522	FL175_U	2.36	32.89	77.30	0.06	2.90	2.67
Forklift >175-250	4,093,994	FL250_U	1.52	16.49	42.63	0.03	1.65	1.52
Forklift >25-50	1,895,672	FL50_U	1.90	15.47	14.57	0.02	1.28	1.18
RTG >175-250	3,467,129	RTG250_U	1.61	6.70	16.76	0.03	0.67	0.62
Side pick >120-175	414,545	SP175_U	0.14	1.54	4.24	0.00	0.16	0.15
Top pick >175-250	7,169,207	TH250_U	1.69	15.77	64.13	0.05	1.86	1.71
Yard tractor >120-175	25,924,766	YTD175_U	0.55	84.36	3.67	0.20	0.25	0.23
Other Equipment	66,724,675	OTHER_U	21.21	287.63	576.71	0.53	31.51	28.99
Total			31.0	460.9	800.0	0.9	40.3	37.1
Project Year 2030								
Forklift >120-175	13,881,573	FL175_U	1.31	46.69	21.64	0.11	0.21	0.19
Forklift >175-250	7,483,585	FL250_U	0.66	9.01	7.78	0.06	0.12	0.11
Forklift >25-50	3,436,076	FL50_U	0.57	14.53	11.64	0.03	0.05	0.05
RTG >175-250	4,708,323	RTG250_U	0.39	5.42	4.71	0.04	0.07	0.07
Side pick >120-175	534,413	SP175_U	0.05	1.84	0.85	0.00	0.01	0.01
Top pick >175-250	9,449,309	TH250_U	0.80	11.08	9.60	0.07	0.15	0.14
Yard tractor >120-175	34,827,957	YTD175_U	0.74	113.33	4.93	0.26	0.34	0.31
Other Equipment	122,240,591	OTHER_U	12.54	439.74	280.81	0.97	1.61	1.48
Total			17.1	641.6	342.0	1.5	2.6	2.3
Project Year 2045								
Forklift >120-175	13,881,573	FL175_U	1.31	46.69	21.64	0.11	0.21	0.19
Forklift >175-250	7,483,585	FL250_U	0.66	9.01	7.78	0.06	0.12	0.11
Forklift >25-50	3,436,076	FL50_U	0.57	14.53	11.64	0.03	0.05	0.05
RTG >175-250	4,708,323	RTG250_U	0.39	5.42	4.71	0.04	0.07	0.07
Side pick >120-175	534,413	SP175_U	0.05	1.84	0.85	0.00	0.01	0.01
Top pick >175-250	9,449,309	TH250_U	0.80	11.08	9.60	0.07	0.15	0.14
Yard tractor >120-175	34,827,957	YTD175_U	0.74	113.33	4.93	0.26	0.34	0.31
Other Equipment	122,240,591	OTHER_U	12.54	439.74	280.81	0.97	1.61	1.48
Total			17.1	641.6	342.0	1.5	2.6	2.3

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-Alt6-187. Annual-to-Peak Day Conversion Factor for Terminal Equipment - Alternative 6

<i>Year</i>	<i>Landside Percent of Annual TEUs Moved on Peak Day (Trucks + On-Dock Trains)</i>	<i>Dockside Percent of Annual TEUs Moved on Peak Day (Ships)</i>	<i>Percent of Annual CHE Usage on Peak Day</i>
2005			0.74%
2010			0.74%
2015			0.74%
2030			0.74%
2045			0.74%

For this alternative, there is no way to directly calculate peak daily CHE usage. Therefore, use the average value of all study years for the Proposed Project.

Table E1.2-A1t6-188. Peak Daily Terminal Equipment Emissions Without Mitigation - Alternative 6

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<i>Project Year 2005</i>						
Forklift >120-175	33.1	144.1	358.8	2.5	17.2	15.8
Forklift >175-250	21.2	72.1	197.5	1.3	9.8	9.0
Forklift >25-50	26.6	67.9	67.7	0.7	7.6	7.0
RTG >175-250	7.4	32.8	119.1	1.2	3.9	3.6
Side pick >120-175	2.2	7.7	21.4	0.1	1.0	0.9
Top pick >175-250	25.0	75.3	311.6	2.6	11.0	10.1
Yard tractor >120-175	124.5	456.1	1,107.0	9.2	59.4	54.7
Other Equipment	300.5	1,295.3	2,623.8	22.5	178.7	164.4
Total	540.5	2,151.3	4,806.7	40.2	288.5	265.4
<i>Project Year 2010</i>						
Forklift >120-175	25.5	230.9	560.5	0.4	20.6	19.0
Forklift >175-250	16.4	114.5	304.8	0.2	12.4	11.4
Forklift >25-50	20.5	107.7	104.4	0.1	9.6	8.8
RTG >175-250	11.8	50.5	154.6	0.2	5.6	5.1
Side pick >120-175	1.6	11.7	32.5	0.0	1.3	1.2
Top pick >175-250	19.7	119.1	487.8	0.4	14.7	13.6
Yard tractor >120-175	3.9	627.5	27.5	1.6	1.7	1.6
Other Equipment	314.5	2,026.7	4,084.7	3.9	253.2	232.9
Total	413.7	3,288.6	5,756.8	6.9	319.0	293.5
<i>Project Year 2015</i>						
Forklift >120-175	34.8	484.9	1,139.5	0.9	42.7	39.3
Forklift >175-250	22.4	243.1	628.4	0.5	24.3	22.4
Forklift >25-50	27.9	228.1	214.8	0.2	18.9	17.4
RTG >175-250	23.8	98.7	247.2	0.4	9.9	9.1
Side pick >120-175	2.1	22.8	62.5	0.0	2.4	2.2
Top pick >175-250	25.0	232.5	945.5	0.8	27.5	25.3
Yard tractor >120-175	8.1	1,243.7	54.1	2.9	3.7	3.4
Other Equipment	312.6	4,240.5	8,502.3	7.8	464.6	427.4
Total	456.7	6,794.4	11,794.5	13.5	594.0	546.5
<i>Project Year 2030</i>						
Forklift >120-175	19.4	688.3	319.1	1.6	3.1	2.8
Forklift >175-250	9.7	132.9	114.7	0.8	1.8	1.7
Forklift >25-50	8.4	214.2	171.7	0.4	0.7	0.7
RTG >175-250	5.7	79.9	69.5	0.5	1.0	1.0
Side pick >120-175	0.8	27.2	12.6	0.1	0.1	0.1
Top pick >175-250	11.7	163.3	141.6	1.1	2.2	2.0
Yard tractor >120-175	10.9	1,670.8	72.7	3.9	5.0	4.6
Other Equipment	184.9	6,483.0	4,140.0	14.3	23.7	21.8
Total	251.5	9,459.6	5,041.8	22.7	37.6	34.6
<i>Project Year 2045</i>						
Forklift >120-175	19.4	688.3	319.1	1.6	3.1	2.8
Forklift >175-250	9.7	132.9	114.7	0.8	1.8	1.7
Forklift >25-50	8.4	214.2	171.7	0.4	0.7	0.7
RTG >175-250	5.7	79.9	69.5	0.5	1.0	1.0
Side pick >120-175	0.8	27.2	12.6	0.1	0.1	0.1
Top pick >175-250	11.7	163.3	141.6	1.1	2.2	2.0
Yard tractor >120-175	10.9	1,670.8	72.7	3.9	5.0	4.6
Other Equipment	184.9	6,483.0	4,140.0	14.3	23.7	21.8
Total	251.5	9,459.6	5,041.8	22.7	37.6	34.6

Table E1.2-A16-189. Annual Terminal Equipment Emissions With Mitigation - Alternative 6

Equipment	Annual Usage (hp-hr/yr)	EF ID	Annual Emissions (tons/year)					
			VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005								
Forklift >120-175	2,553,306	FL175_M	2.24	9.78	24.34	0.17	1.17	1.07
Forklift >175-250	1,366,114	FL250_M	1.44	4.89	13.39	0.09	0.66	0.61
Forklift >25-50	634,474	FL50_M	1.80	4.60	4.59	0.05	0.52	0.47
RTG >175-250	1,263,977	RTG250_M	0.50	2.23	8.08	0.08	0.26	0.24
Side pick >120-175	153,001	SP175_M_OMNI	0.15	0.52	1.45	0.01	0.07	0.06
Top pick >175-250	2,632,422	TH250_M_OMNI	1.70	5.11	21.13	0.17	0.74	0.69
Diesel Yard tractor >120-175	9,475,942	YTD175_U	8.44	30.93	75.09	0.62	4.03	3.71
Other Equipment	22,247,338	OTHER_M	20.38	87.86	177.97	1.53	12.12	11.15
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			36.7	145.9	326.0	2.7	19.6	18.0
Project Year 2010								
Forklift >120-175	3,827,313	FL175_M	1.73	15.52	37.55	0.03	1.47	1.36
Forklift >175-250	2,048,680	FL250_M	1.11	7.77	20.67	0.02	0.84	0.77
Forklift >25-50	950,835	FL50_M	1.39	7.30	7.08	0.01	0.65	0.60
RTG >175-250	1,859,231	RTG250_M	0.80	3.43	10.48	0.01	0.38	0.35
Side pick >120-175	224,473	SP175_M_OMNI	0.11	0.80	2.20	0.00	0.09	0.08
Top pick >175-250	3,866,289	TH250_M_OMNI	1.33	8.08	33.08	0.03	1.00	0.92
Diesel Yard tractor >120-175	13,930,817	YTD175_U	0.27	42.57	1.87	0.11	0.12	0.11
Other Equipment	33,369,046	OTHER_M	20.67	134.92	272.53	0.26	16.39	15.08
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175		YTN175_M_REPL	-	-	-	-	-	-
Total			27.4	220.4	385.5	0.5	20.9	19.3
Project Year 2015								
Forklift >120-175	7,636,522	FL175_M	0.62	23.41	10.97	0.06	0.09	0.08
Forklift >175-250	4,093,994	FL250_M	0.29	4.35	3.82	0.03	0.05	0.05
Forklift >25-50	1,895,672	FL50_M	0.14	2.01	1.77	0.02	0.02	0.02
RTG >175-250	3,467,129	RTG250_M	0.24	3.63	3.20	0.03	0.04	0.04
Side pick >120-175	414,545	SP175_M_OMNI	0.03	1.27	0.58	0.00	0.00	0.00
Top pick >175-250	7,169,207	TH250_M_OMNI	0.51	7.61	6.69	0.05	0.09	0.08
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	66,724,675	OTHER_M	6.42	231.06	148.23	0.53	0.80	0.73
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	25,924,766	YTN175_M_REPL	0.48	78.19	3.43	-	0.21	0.21
Total			8.7	351.5	178.7	0.7	1.3	1.2
Project Year 2030								
Forklift >120-175	13,881,573	FL175_M	1.31	46.69	21.64	0.11	0.21	0.19
Forklift >175-250	7,483,585	FL250_M	0.66	9.01	7.78	0.06	0.12	0.11
Forklift >25-50	3,436,076	FL50_M	0.30	4.14	3.57	0.03	0.06	0.05
RTG >175-250	4,708,323	RTG250_M	0.39	5.42	4.71	0.04	0.07	0.07
Side pick >120-175	534,413	SP175_M_OMNI	0.05	1.84	0.85	0.00	0.01	0.01
Top pick >175-250	9,449,309	TH250_M_OMNI	0.80	11.08	9.60	0.07	0.15	0.14
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	122,240,591	OTHER_M	12.54	439.74	280.81	0.97	1.61	1.48
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	34,827,957	YTN175_M_REPL	0.69	109.18	4.77	-	0.31	0.31
Total			16.7	627.1	333.8	1.3	2.5	2.4
Project Year 2045								
Forklift >120-175	13,881,573	FL175_M	1.31	46.69	21.64	0.11	0.21	0.19
Forklift >175-250	7,483,585	FL250_M	0.66	9.01	7.78	0.06	0.12	0.11
Forklift >25-50	3,436,076	FL50_M	0.30	4.14	3.57	0.03	0.06	0.05
RTG >175-250	4,708,323	RTG250_M	0.39	5.42	4.71	0.04	0.07	0.07
Side pick >120-175	534,413	SP175_M_OMNI	0.05	1.84	0.85	0.00	0.01	0.01
Top pick >175-250	9,449,309	TH250_M_OMNI	0.80	11.08	9.60	0.07	0.15	0.14
Diesel Yard tractor >120-175		YTD175_U	-	-	-	-	-	-
Other Equipment	122,240,591	OTHER_M	12.54	439.74	280.81	0.97	1.61	1.48
LPG Top pick >175-250		THP250_M	-	-	-	-	-	-
LNG Top pick >175-250		THN250_M	-	-	-	-	-	-
LPG Yard tractor >120-175		YTP175_M	-	-	-	-	-	-
LNG Yard tractor >120-175	34,827,957	YTN175_M_REPL	0.66	106.42	4.67	-	0.29	0.29
Total			16.7	624.3	333.6	1.3	2.5	2.3

Note: 2040 emission factors were used for year 2045, since Offroad2007 only calculates up to year 2040.

Table E1.2-Alt6-190. Peak Daily Terminal Equipment Emissions With Mitigation - Alternative 6

Equipment	Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Forklift >120-175	33.1	144.1	358.8	2.5	17.2	15.8
Forklift >175-250	21.2	72.1	197.5	1.3	9.8	9.0
Forklift >25-50	26.6	67.9	67.7	0.7	7.6	7.0
RTG >175-250	7.4	32.8	119.1	1.2	3.9	3.6
Side pick >120-175	2.2	7.7	21.4	0.1	1.0	0.9
Top pick >175-250	25.0	75.3	311.6	2.6	11.0	10.1
Diesel Yard tractor >120-175	124.5	456.1	1,107.0	9.2	59.4	54.7
Other Equipment	300.5	1,295.3	2,623.8	22.5	178.7	164.4
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	540.5	2,151.3	4,806.7	40.2	288.5	265.4
Project Year 2010						
Forklift >120-175	25.5	228.8	553.5	0.4	21.7	20.0
Forklift >175-250	16.4	114.5	304.8	0.2	12.4	11.4
Forklift >25-50	20.5	107.7	104.4	0.1	9.6	8.8
RTG >175-250	11.8	50.5	154.6	0.2	5.6	5.1
Side pick >120-175	1.6	11.7	32.5	0.0	1.3	1.2
Top pick >175-250	19.7	119.1	487.8	0.4	14.7	13.6
Diesel Yard tractor >120-175	3.9	627.5	27.5	1.6	1.7	1.6
Other Equipment	304.8	1,989.1	4,017.8	3.9	241.6	222.3
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	-	-	-	-	-	-
Total	404.0	3,248.9	5,682.9	6.9	308.6	283.9
Project Year 2015						
Forklift >120-175	9.1	345.1	161.7	0.9	1.3	1.2
Forklift >175-250	4.3	64.1	56.4	0.5	0.7	0.7
Forklift >25-50	2.0	29.7	26.1	0.2	0.3	0.3
RTG >175-250	3.6	53.5	47.1	0.4	0.6	0.6
Side pick >120-175	0.5	18.7	8.6	0.0	0.1	0.1
Top pick >175-250	7.6	112.2	98.7	0.8	1.3	1.2
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	94.6	3,406.4	2,185.3	7.8	11.7	10.8
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	7.1	1,152.7	50.6	-	3.1	3.1
Total	128.8	5,182.4	2,634.5	10.6	19.2	17.9
Project Year 2030						
Forklift >120-175	19.4	688.3	319.1	1.6	3.1	2.8
Forklift >175-250	9.7	132.9	114.7	0.8	1.8	1.7
Forklift >25-50	4.5	61.0	52.7	0.4	0.8	0.8
RTG >175-250	5.7	79.9	69.5	0.5	1.0	1.0
Side pick >120-175	0.8	27.2	12.6	0.1	0.1	0.1
Top pick >175-250	11.7	163.3	141.6	1.1	2.2	2.0
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	184.9	6,483.0	4,140.0	14.3	23.7	21.8
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	10.2	1,609.7	70.4	-	4.5	4.5
Total	246.8	9,245.3	4,920.4	18.8	37.3	34.7
Project Year 2045						
Forklift >120-175	19.4	688.3	319.1	1.6	3.1	2.8
Forklift >175-250	9.7	132.9	114.7	0.8	1.8	1.7
Forklift >25-50	4.5	61.0	52.7	0.4	0.8	0.8
RTG >175-250	5.7	79.9	69.5	0.5	1.0	1.0
Side pick >120-175	0.8	27.2	12.6	0.1	0.1	0.1
Top pick >175-250	11.7	163.3	141.6	1.1	2.2	2.0
Diesel Yard tractor >120-175	-	-	-	-	-	-
Other Equipment	184.9	6,483.0	4,140.0	14.3	23.7	21.8
LPG Top pick >175-250	-	-	-	-	-	-
LNG Top pick >175-250	-	-	-	-	-	-
LPG Yard tractor >120-175	-	-	-	-	-	-
LNG Yard tractor >120-175	9.8	1,568.9	68.8	-	4.3	4.3
Total	246.4	9,204.5	4,918.9	18.8	37.0	34.4

Table E1.2-Alt6-191. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 6 without Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	36.7	145.9	326.0	2.7	19.6	18.0
Year 2010	28.1	223.1	390.5	0.5	21.6	19.9
Year 2015	31.0	460.9	800.0	0.9	40.3	37.1
Year 2030	17.1	641.6	342.0	1.5	2.6	2.3
Year 2045	17.1	641.6	342.0	1.5	2.6	2.3

Table E1.2-Alt6-192. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 6 without Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	541	2,151	4,807	40	289	265
Year 2010	414	3,289	5,757	7	319	293
Year 2015	457	6,794	11,795	13	594	546
Year 2030	251	9,460	5,042	23	38	35
Year 2045	251	9,460	5,042	23	38	35

Table E1.2-Alt6-193. Summary of Annual CHE Emissions for the Berths 97-109 Terminal - Alternative 6 with Mitigation

Project Study Year	Tons per Year					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	36.7	145.9	326.0	2.7	19.6	18.0
Year 2010	27.4	220.4	385.5	0.5	20.9	19.3
Year 2015	8.7	351.5	178.7	0.7	1.3	1.2
Year 2030	16.7	627.1	333.8	1.3	2.5	2.4
Year 2045	16.7	624.3	333.6	1.3	2.5	2.3

Emissions include electricity consumption by electric RTGs.

Table E1.2-Alt6-194. Summary of Peak Daily CHE Emissions for the Berths 97-109 Terminal - Alternative 6 with Mitigation

Project Study Year	Pounds per Day					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2005	541	2,151	4,807	40	289	265
Year 2010	404	3,249	5,683	7	309	284
Year 2015	129	5,182	2,634	11	19	18
Year 2030	247	9,245	4,920	19	37	35
Year 2045	246	9,205	4,919	19	37	34

**Table E1.2-Alt6-195. Peak Daily Operational Emissions Without Mitigation
Alternative 6**

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	217	1,042	1,947	14	148	100
Trains	45	123	856	55	30	27
Railyard Equipment	20	70	191	2	9	9
Terminal Equipment	541	2,151	4,807	40	289	265
Worker Commuter Vehicles	3	31	4	0	4	1
Total - Project Year 2005	995	3,800	12,387	5,588	1,061	868
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	834	3,194	10,864	5,560	977	791
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	503	-3,468	9,497	5,577	1,008	818
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	189	409	4,895	4,800	567	454
Ships - Hoteling	51	138	1,821	3,646	293	235
Tugboats	3	21	112	0	4	4
Trucks	325	1,398	2,781	5	250	122
Trains	35	121	624	0	19	17
Railyard Equipment	2	71	61	0	2	2
Terminal Equipment	457	6,794	11,795	13	594	546
Worker Commuter Vehicles	3	36	5	0	10	2
Total - Project Year 2015	1,065	8,989	22,092	8,466	1,740	1,382
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	904	8,382	20,569	8,438	1,655	1,304
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	1,045	6,697	21,899	8,465	1,733	1,375
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	189	409	4,895	4,800	567	454
Ships - Hoteling	51	138	1,821	3,646	293	235
Tugboats	3	21	84	0	4	3
Trucks	198	838	1,735	8	249	72
Trains	28	121	510	0	14	13
Railyard Equipment	1	65	9	0	0	0
Terminal Equipment	251	9,460	5,042	23	38	35
Worker Commuter Vehicles	2	21	2	0	12	2
Total - Project Year 2030	723	11,072	14,098	8,478	1,177	814
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	561	10,466	12,575	8,449	1,092	736
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	700	8,679	13,892	8,477	1,169	806
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	189	409	4,895	4,800	567	454
Ships - Hoteling	51	138	1,821	3,646	293	235
Tugboats	3	21	84	0	4	3
Trucks	184	783	1,637	8	245	68
Trains	25	121	472	0	12	11
Railyard Equipment	1	65	9	0	0	0
Terminal Equipment	251	9,460	5,042	23	38	35
Worker Commuter Vehicles	2	18	2	0	12	2
Total - Project Year 2045	706	11,014	13,961	8,478	1,171	808
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	545	10,408	12,438	8,449	1,086	730
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	685	8,678	13,757	8,477	1,163	801
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

**Table E1.2-Alt5-196. Average Daily Operational Emissions Without Mitigation
Alternative 6**

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	24	51	592	346	52	41
Ships - Hoteling	9	23	303	260	27	22
Tugboats	1	5	33	2	1	1
Trucks	162	780	1,457	10	111	75
Trains	7	19	132	8	5	4
Railyard Equipment	4	14	39	0	2	2
Terminal Equipment	201	800	1,787	15	107	99
Worker Commuter Vehicles	2	25	3	0	3	1
Total - Project Year 2005	410	1,718	4,346	642	307	244
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	350	1,492	3,780	632	276	215
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	227	-983	3,272	638	288	226
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	71	152	1,760	1,030	153	123
Ships - Hoteling	18	49	642	551	57	46
Tugboats	2	15	83	0	3	3
Trucks	244	1,046	2,081	4	187	91
Trains	15	50	261	0	8	7
Railyard Equipment	1	39	33	0	1	1
Terminal Equipment	170	2,525	4,384	5	221	203
Worker Commuter Vehicles	2	30	4	0	8	2
Total - Project Year 2015	523	3,908	9,248	1,590	639	475
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	463	3,682	8,682	1,579	607	446
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	515	3,056	9,176	1,589	636	473
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	92	199	2,344	1,377	203	163
Ships - Hoteling	25	68	890	761	79	63
Tugboats	3	25	98	0	4	4
Trucks	161	685	1,418	6	203	59
Trains	14	61	260	0	7	6
Railyard Equipment	1	43	6	0	0	0
Terminal Equipment	93	3,516	1,874	8	14	13
Worker Commuter Vehicles	2	17	2	0	9	2
Total - Project Year 2030	392	4,615	6,893	2,154	521	310
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	332	4,390	6,327	2,143	489	281
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	384	3,726	6,817	2,154	518	307
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	92	199	2,344	1,377	203	163
Ships - Hoteling	25	68	890	761	79	63
Tugboats	3	25	98	0	4	4
Trucks	151	640	1,338	6	200	56
Trains	13	61	240	0	6	5
Railyard Equipment	1	43	6	0	0	0
Terminal Equipment	93	3,516	1,874	8	14	13
Worker Commuter Vehicles	1	15	1	0	9	2
Total - Project Year 2045	379	4,568	6,792	2,154	517	306
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	319	4,342	6,226	2,143	485	277
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	371	3,699	6,717	2,154	514	304
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

Table E1.2-Alt6-197. Peak Daily Operational Emissions With Mitigation
Alternative 6

Emission Source	Peak Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	133	278	3,266	3,179	385	308
Ships - Hoteling	35	94	1,249	2,294	194	156
Tugboats	2	10	68	5	3	3
Trucks	217	1,042	1,947	14	148	100
Trains	45	123	856	55	30	27
Railyard Equipment	20	70	191	2	9	9
Terminal Equipment	541	2,151	4,807	40	289	265
Worker Commuter Vehicles	3	31	4	0	4	1
Total - Project Year 2005	995	3,800	12,387	5,588	1,061	868
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	834	3,194	10,864	5,560	977	791
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	492	7,268	2,890	11	53	50
Project minus NEPA Baseline	503	-3,468	9,497	5,577	1,008	818
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	116	237	1,561	93	55	44
Ships - Hoteling	48	128	1,594	146	42	34
Tugboats	3	21	112	0	4	4
Trucks	113	386	963	2	168	47
Trains	35	121	624	0	19	17
Railyard Equipment	2	71	61	0	2	2
Terminal Equipment	129	5,182	2,634	11	19	18
Worker Commuter Vehicles	3	36	5	0	10	2
Total - Project Year 2015	449	6,182	7,554	252	319	168
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	288	5,575	6,031	224	235	90
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	20	2,291	193	1	7	7
Project minus NEPA Baseline	429	3,891	7,361	251	313	161
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	116	237	1,561	93	55	44
Ships - Hoteling	48	128	1,594	146	42	34
Tugboats	3	21	84	0	4	3
Trucks	234	694	2,031	0	263	88
Trains	28	121	510	0	14	13
Railyard Equipment	1	65	9	0	0	0
Terminal Equipment	247	9,245	4,920	19	37	35
Worker Commuter Vehicles	2	21	2	0	12	2
Total - Project Year 2030	678	10,532	10,711	259	427	220
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	517	9,925	9,188	230	342	142
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,393	205	1	8	8
Project minus NEPA Baseline	656	8,139	10,505	258	419	212
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	116	237	1,561	93	55	44
Ships - Hoteling	48	128	1,594	146	42	34
Tugboats	3	21	84	0	4	3
Trucks	234	694	2,031	0	263	88
Trains	25	121	472	0	12	11
Railyard Equipment	1	65	9	0	0	0
Terminal Equipment	246	9,205	4,919	19	37	34
Worker Commuter Vehicles	2	18	2	0	12	2
Total - Project Year 2045	674	10,488	10,670	259	425	218
CEQA Impacts						
CEQA Baseline Emissions	161	607	1,523	28	85	78
Project minus CEQA Baseline	513	9,881	9,147	230	340	140
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	22	2,336	203	1	7	7
Project minus NEPA Baseline	653	8,152	10,467	258	417	210
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes

**Table E1.2-Alt6-198. Average Daily Operational Emissions With Mitigation
Alternative 6**

Emission Source	Average Daily Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Project Year 2005						
Ships - Transit and Anchoring	24	51	592	346	52	41
Ships - Hoteling	9	23	303	260	27	22
Tugboats	1	5	33	2	1	1
Trucks	162	780	1,457	10	111	75
Trains	7	19	132	8	5	4
Railyard Equipment	4	14	39	0	2	2
Terminal Equipment	201	800	1,787	15	107	99
Worker Commuter Vehicles	2	25	3	0	3	1
Total - Project Year 2005	410	1,718	4,346	642	307	244
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	350	1,492	3,780	632	276	215
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	Yes	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	183	2,701	1,074	4	20	19
Project minus NEPA Baseline	227	-983	3,272	638	288	226
Thresholds	55	550	55	150	150	55
Significant?	Yes	No	Yes	Yes	Yes	Yes
Project Year 2015						
Ships - Transit and Anchoring	56	116	843	52	29	23
Ships - Hoteling	12	32	387	38	11	9
Tugboats	2	15	83	0	3	3
Trucks	85	289	721	1	126	35
Trains	15	50	261	0	8	7
Railyard Equipment	1	39	33	0	1	1
Terminal Equipment	48	1,926	979	4	7	7
Worker Commuter Vehicles	2	30	4	0	8	2
Total - Project Year 2015	220	2,498	3,312	96	192	86
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	160	2,272	2,746	85	161	57
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	7	852	72	0	3	3
Project minus NEPA Baseline	213	1,646	3,240	95	190	84
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2030						
Ships - Transit and Anchoring	73	155	1,161	73	39	31
Ships - Hoteling	7	21	221	33	9	7
Tugboats	3	25	98	0	4	4
Trucks	191	568	1,660	0	215	72
Trains	14	61	260	0	7	6
Railyard Equipment	1	43	6	0	0	0
Terminal Equipment	92	3,436	1,829	7	14	13
Worker Commuter Vehicles	2	17	2	0	9	2
Total - Project Year 2030	382	4,326	5,236	113	298	136
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	323	4,100	4,670	103	266	107
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	889	76	0	3	3
Project minus NEPA Baseline	374	3,436	5,160	113	295	134
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Project Year 2045						
Ships - Transit and Anchoring	73	155	1,161	73	39	31
Ships - Hoteling	7	21	221	33	9	7
Tugboats	3	25	98	0	4	4
Trucks	191	568	1,660	0	215	72
Trains	13	61	240	0	6	5
Railyard Equipment	1	43	6	0	0	0
Terminal Equipment	92	3,421	1,828	7	14	13
Worker Commuter Vehicles	1	15	1	0	9	2
Total - Project Year 2045	380	4,308	5,216	113	297	135
CEQA Impacts						
CEQA Baseline Emissions	60	225	566	10	31	29
Project minus CEQA Baseline	321	4,082	4,650	103	265	106
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
NEPA Impacts						
NEPA Baseline (Alt. 2) Emissions	8	868	75	0	3	3
Project minus NEPA Baseline	372	3,439	5,140	113	294	133
Thresholds	55	550	55	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Appendix E1.2

Operational Emission Calculations (Alt. 7)

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\lawhite1\Application Data\Urbemis\Version9a\Projects\CS_Alt7_2015.urb9

Project Name: Alternative 7 2015

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	11.59	5.40	9.12	0.00	0.03	0.03	6,415.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	131.54	178.46	1,665.89	2.48	408.08	79.11	242,693.85

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	143.13	183.86	1,675.01	2.48	408.11	79.14	249,108.90

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.39	5.34	4.48	0.00	0.01	0.01	6,406.62
Hearth							
Landscaping	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	0.00						
Architectural Coatings	10.83						
TOTALS (lbs/day, unmitigated)	11.59	5.40	9.12	0.00	0.03	0.03	6,415.05

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	55.77	80.81	738.97	1.11	183.66	35.59	108,902.30
Office park	18.81	25.25	239.47	0.35	58.02	11.25	34,584.18
General light industry	56.96	72.40	687.45	1.02	166.40	32.27	99,207.37
TOTALS (lbs/day, unmitigated)	131.54	178.46	1,665.89	2.48	408.08	79.11	242,693.85

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shp. center		42.74	1000 sq ft	277.56	11,862.91	106,445.93
Office park		11.37	1000 sq ft	277.56	3,155.86	33,616.19
General light industry		6.94	1000 sq ft	1,295.30	8,989.38	96,411.13
					24,008.15	236,473.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.2	0.2	99.6	0.2
Light Truck < 3750 lbs	6.7	1.5	97.0	1.5
Light Truck 3751-5750 lbs	23.0	0.0	100.0	0.0
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.4	50.0	50.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0
General light industry				50.0	25.0	25.0

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\lawhite1\Application Data\Urbemis\Version9a\Projects\CS_Alt7_2030.urb9

Project Name: Alternative 7 2030

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	11.59	5.40	9.12	0.00	0.03	0.03	6,415.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	70.84	71.72	801.35	2.48	407.83	78.90	244,136.99

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	82.43	77.12	810.47	2.48	407.86	78.93	250,552.04

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.39	5.34	4.48	0.00	0.01	0.01	6,406.62
Hearth							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	0.00						
Architectural Coatings	10.83						
TOTALS (lbs/day, unmitigated)	11.59	5.40	9.12	0.00	0.03	0.03	6,415.05

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	29.93	32.48	355.75	1.11	183.55	35.49	109,550.45
Office park	10.11	10.15	115.13	0.35	57.98	11.22	34,789.69
General light industry	30.80	29.09	330.47	1.02	166.30	32.19	99,796.85
TOTALS (lbs/day, unmitigated)	70.84	71.72	801.35	2.48	407.83	78.90	244,136.99

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center	42.74	1000 sq ft	277.56	11,862.91	106,445.93	
Office park	11.37	1000 sq ft	277.56	3,155.86	33,616.19	
General light industry	6.94	1000 sq ft	1,295.30	8,989.38	96,411.13	
				24,008.15	236,473.25	

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.7	0.0	100.0	0.0
Light Truck < 3750 lbs	6.7	0.0	100.0	0.0
Light Truck 3751-5750 lbs	23.5	0.0	100.0	0.0
Med Truck 5751-8500 lbs	10.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	82.4	17.6
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

	Travel Conditions					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0
General light industry				50.0	25.0	25.0

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\awhite1\Application Data\Urbemis\Version9a\Projects\CS_Alt7_2045.urb9

Project Name: Alternative 7 2045

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	11.59	5.40	9.12	0.00	0.03	0.03	6,415.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	62.97	54.58	694.61	2.50	407.66	78.74	246,828.16

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	74.56	59.98	703.73	2.50	407.69	78.77	253,243.21

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.39	5.34	4.48	0.00	0.01	0.01	6,406.62
Hearth							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	0.00						
Architectural Coatings	10.83						
TOTALS (lbs/day, unmitigated)	11.59	5.40	9.12	0.00	0.03	0.03	6,415.05

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	26.93	24.73	308.48	1.12	183.47	35.41	110,757.26
Office park	8.99	7.72	99.76	0.36	57.96	11.20	35,173.37
General light industry	27.05	22.13	286.37	1.02	166.23	32.13	100,897.53
TOTALS (lbs/day, unmitigated)	62.97	54.58	694.61	2.50	407.66	78.74	246,828.16

Operational Settings:

- Does not include correction for passby trips
- Does not include double counting adjustment for internal trips

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shp. center		42.74	1000 sq ft	277.56	11,862.91	106,445.93
Office park		11.37	1000 sq ft	277.56	3,155.86	33,616.19
General light industry		6.94	1000 sq ft	1,295.30	8,989.38	96,411.13
					24,008.15	236,473.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.6	0.0	100.0	0.0
Light Truck < 3750 lbs	6.9	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.5	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	84.2	15.8
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.7	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	94.1	5.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0
General light industry				50.0	25.0	25.0