Appendix G
Defining Low-Income Populations

1.0 Introduction
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to assess the potential for their actions to have disproportionately high and adverse environmental and health impacts on minority and low-income populations. This memorandum provides background documentation for how low-income populations were defined for the purposes of environmental justice analysis in the EIS/EIR for the Berth 97-109 project at the Port of Los Angeles. Although common practice among many federal agencies is to use national poverty thresholds from the U.S. Census Bureau, costs of living are sufficiently higher in southern California compared to the nation as a whole that a higher low-income threshold may be justified. Using a higher low-income threshold would result in a larger number of households being counted as low-income for the purposes of analysis under Executive Order 12898 and related environmental justice guidance.

2.0 Guidance
Environmental justice guidance issued by various federal agencies refers to several different methodologies and definitions for identifying low-income persons or households. Guidance from the Council on Environmental Quality (CEQ) applies to all federal agencies, and the Army Corps of Engineers also uses EPA guidance. EPA guidance is also relevant because EPA is the federal agency responsible for reviewing the environmental justice analysis for legal sufficiency.

CEQ Environmental Justice Guidance Under NEPA (CEQ, 1997) suggests that Census poverty thresholds should be used to identify low-income populations. Census poverty thresholds have the advantage of being defined differently for different household sizes and numbers of dependents. For example, the threshold for a two-parent family with one child is different for the threshold for a single parent with five children. However, the Census poverty thresholds do not include geographic variations (e.g., for differences in the cost of living).

USEPA guidance for identifying low-income populations recommends that analysts consider regional definitions for poverty or low-income status. For example, EPA’s Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses (USEPA, 1998) notes that “In conjunction with census data, the EPA NEPA analyst should also consider state and regional low-income and poverty definitions as appropriate” (USEPA 1998, Section 2.1.2). EPA’s Final Guidance for Consideration of Environmental Justice in Clean Air Act 309 Reviews (USEPA, 1999) contains almost identical language, noting that “In addition to using U.S. Census defined parameters for measuring income and poverty, it is also important to consider state and regional low-income and poverty definitions where appropriate” (USEPA, 1999; Section 3.0 Issue Number 2). (Both USEPA guidance documents also advise using additional local resources, such as public outreach and other outreach efforts that involve community members in defining their communities.)

3.0 Review of Alternative Definitions
SAIC surveyed available literature as well as several national, state, and county agencies to explore the use of regional thresholds or guidelines to classify low-income people or households. This section provides information about the different approaches identified in this review.
Poverty or low-income status as defined by the national agencies surveyed generally is not regionalized, with the exception of Alaska and Hawaii. In other words, these agencies typically have one national standard. These national agency definitions are included, however, because they often serve as the basis for regionalized guidelines.

At the national level, there is a distinction between poverty thresholds and poverty guidelines. Poverty thresholds are the original version of the federal poverty measures as defined by the U.S. Census Bureau. The poverty threshold figures vary by household size and number of dependents, whereas the poverty guidelines vary by household size only. The poverty guidelines are a simplification of the poverty thresholds used by some agencies for administrative purposes, such as determining eligibility for federal and other programs.

The different approaches surveyed include:
- U.S. Census Bureau Poverty Thresholds
- U.S. Department of Health and Human Services Poverty Guidelines
- U.S. Department of Housing and Urban Development AMI Limits
- U.S. Department of Agriculture Food and Nutrition Income Eligibility Guidelines
- U.S. Social Security Administration Medicare Part D Income Eligibility Guidelines
- U.S. Citizenship and Immigration Services Poverty Guidelines
- California Department of Aging Title V Eligibility Criteria
- California Health and Safety Code Low and Moderate Income Definitions
- Los Angeles Department of Public Social Services Income Eligibility Guidelines
- Metropolitan Transportation Commission Equity Analysis and EJ Report
- RAND Corporation and UCLA School of Public Health poverty research publication
- Public Policy Institute of California poverty research publication

These approaches are described in more detail in the paragraphs that follow. The specific numerical guidelines, where applicable, are summarized in Table 1 at the conclusion of this section.

3.1 Census Bureau Poverty Thresholds (2006)

The U.S. Census Bureau develops a set of money income thresholds to determine who is in poverty, forming a detailed 48-cell matrix that varies by family size and composition. The thresholds do not vary geographically, but are updated annually for inflation using the Consumer Price Index for Urban Consumers (CPI-U). Poverty thresholds were originally developed in 1963-1964 by the Social Security Administration based the portion of a family budget spent on food and U.S. Department of Agriculture economy food plans. The Census poverty thresholds are used primarily for statistical purposes and not necessarily intended as a complete description of what people and families need to live nor as eligibility criteria for public aid programs.

3.2 HHS Poverty Guidelines (2007)

The U.S. Department of Health and Human Services Poverty Guidelines are issued each year in the Federal Register for use in determination of program eligibility. The HHS guidelines represent the basis for many other state and regional guidelines, therefore are referenced in the
following descriptions as simply the “federal poverty guidelines.” Programs using these
guidelines include Head Start, the Food Stamp Program, the National School Lunch Program, the
Low-Income Home Energy Assistant Program, and the Children’s Health Insurance Program.
The HHS Poverty Guidelines are based on simplifications of the U.S. Census Bureau’s detailed
matrix of poverty thresholds and are updated annually using Consumer Price Index data. The
guidelines vary by family size, with one set of figures for the 48 contiguous states, one set for
Alaska, and one set for Hawaii.

3.3 HUD AMI Limits (HUD, 2007a)
The U.S. Department of Housing and Urban Development develops income limits for its
programs based on Median Family Income (MFI) reported from the U.S. Census Bureau’s
American Community Survey, updated annually. HUD income limits are percentages of MFI, or
Area Median Income (AMI), calculated in accordance with the U.S. Housing Act of 1937, as
amended. There are three distinct income limits: AMI30 (Extremely Low Income, 30 percent
MFI), AMI50 (Very Low Income, 50 percent MFI), and AMI80 (Low Income, 80 percent MFI).
The very low-income designation (based on 50 percent of MFI) is considered to have the
strongest statutory basis as, according to HUD, it has the best-defined income limits, has been
subject to minimal legislative adjustments following calculation methodology review, and is tied
by legislation to a number of other income limit calculations.

3.4 USDA Income Eligibility Guidelines (2007)
The U.S. Department of Agriculture establishes annual income guidelines to be used in
determining eligibility for free and reduced meals and free milk programs by schools, institutions,
and other relevant facilities. The USDA guidelines are based on percentages of the federal
poverty guidelines as reported by HHS. Income eligibility for reduced priced meals is
185 percent of the federal guideline and eligibility for free meals is 130 percent of the federal
guideline.

3.5 SSA Medicare Part D
The U.S. Social Security Administration determines the eligibility of individuals seeking
Medicare Part D coverage based on income limits up to 150 percent of the federal poverty
guideline. As eligibility for Medicare is on an individual basis, the guidelines are not reported by
family size and are not included in Table 1 below.

3.6 USCIS (2006)
The U.S. Citizenship and Immigration Service establishes minimum income requirements for
individuals filing an Affidavit of Support under the Immigration and Nationality Act. Individuals
petitioning for sponsorship of their foreign national spouse or child complete the affidavit. The
USCIS poverty guidelines are 125 percent of the federal poverty guidelines.

3.7 California Department of Aging (2007)
California Department of Aging administers several programs that determine eligibility based on
income limits. The Senior and Community Service Employment Program (Title V) uses
125 percent (135 percent for LA County and several other counties) of the federal poverty
guidelines for eligibility and reporting purposes. The Health Insurance Counseling and Advocacy
Program (HICAP) determines Specified Low-Income Medicare Beneficiaries (SLMB) to be those
with income up to 150 percent of the federal poverty guidelines. SLMB status is relevant in
determining eligibility for certain national and state Medicare benefit programs.

3.8 California Health and Safety Code

California Health and Safety Code Section 50093 establishes that “persons and families of low or
moderate income” are defined as persons and families whose income does not exceed 120 percent
of area median income, adjusted for family size in accordance with HUD standards. The state
may permit agencies to use higher income limitations in designated geographic areas of the state
upon determination that the 120 percent limitation is too low based on area rental and home
purchase prices. The code does not specify figures by family size therefore the guidelines are not
included in Table 1 below.

3.9 Los Angeles County DPSS (2007)

The Los Angeles County Department of Public Social Services bases eligibility for certain county
programs on a broad range of income guidelines depending on the particular program. All
program eligibility guidelines however are based various percentages of the federal poverty
guidelines. Eligibility criteria for various county programs range from 100 percent to 250 percent
of the federal poverty guideline.

3.10 San Francisco Bay Area Metropolitan Transportation Commission (2001)

The San Francisco Bay Area Metropolitan Transportation Commission 2001 Regional
Transportation Plan Equity Analysis and Environmental Justice Report identifies low-income
households as those with incomes up to 200 percent of federal poverty guidelines, due to the
relatively high cost of living in the Bay Area. Citing the MTC report, the Draft EIR for the
Chevron USA Long Wharf Marine Oil Terminal (February 2006) also uses 200 percent of the
federal guidelines for the purposes of identifying low-income populations.


In their report Concentrated Poverty vs. Concentrated Affluence, researchers from RAND
Corporation and UCLA analyzed the relationship between concentrations of families in poverty
and their neighborhood social environments and children’s outcomes, particularly in terms of
school performance. It is important to note that the focus of this paper is not on defining what
threshold should be used to determine low-income status, but rather on determining how low-
income status correlates with outcomes for children growing up. In a separate analysis contained
in the report, low income families were identified as those with annual family income less than or
equal to $24,000 and high income families were identified as those with annual income equal to
or greater than $75,000. The report does not explain in detail the reason for using these
thresholds, nor does it identify poverty thresholds or guidelines for different family sizes.

3.12 Public Policy Institute of California (2006)

The report Poverty in California: Moving Beyond the Federal Measure (Reed, 2006) describes
and implements the method recommended in a 1995 National Academy of Sciences (NAS) study
for adjusting poverty thresholds to incorporate regional housing costs. The primary objective of
the study was to measure poverty levels in California incorporating the higher cost of living in
California relative to the rest of the nation. As a byproduct, the study involved calculating both
numerical income thresholds in California and a ratio of California poverty thresholds to national
thresholds.
The approach used in this study is based on a method suggested by a NAS panel and documented in Citro and Michael (1995). The NAS report listed a series of recommendations, including the inclusion of an adjustment for geographic differences in the poverty threshold. As a first and partial step to account for cost-of-living differences across geographic areas, the NAS panel recommended that the housing component of poverty thresholds be adjusted for geographic differences in the cost of living (Short, 2001; Citro and Michael, 1995). The basic approach is to adjust the U.S. Census Poverty Threshold (federal poverty threshold) using the ratio of regional housing costs to national housing costs. This ratio is, in turn, constructed from the U.S. Department of Housing and Urban Development (HUD) Fair Market Rent (FMR) dataset (HUD, 2007b).  

FMRs determine the eligibility of rental housing units for the Section 8 Housing Assistance Payments program. FMRs are gross rent estimates – included is the shelter rent plus the cost of all utilities, except telephones. FMRs are estimated annually for 354 metropolitan areas and 2,350 nonmetropolitan county FMR areas. The current definition used is the 40th percentile rent (i.e., the dollar amount below which 40 percent of the standard-quality rental housing units are rented). The 40th percentile rent is based on the distribution of rents of all units occupied by recent movers (renter households who moved to their present residence within the past 15 months). (This means that it more likely represents rents close to or at current market values, since rent controls only apply for people who stay in their unit continuously.) HUD estimates FMRs for different size units based on number of bedrooms (1 to 4 bedrooms, or efficiency units). HUD develops this statistic by drawing from three sources of data: U.S. Census, the HUD American Housing Survey (AHS), and random digit dialing telephone surveys (HUD, 1995). The method used requires calculating the ratio of the local FMR within a specified geographic area to the national average FMR for a given unit size category (number of bedrooms). HUD does not develop the national average FMR. Reed (2006) calculated the national average FMR as a population-weighted average using population estimates from the U.S. Census (Reed, 2007).

Having computed the national average FMR, Reed (2006) used the ratio of the regional FMR to the national FMR to calculate regionally specific poverty thresholds based on federal poverty thresholds. Since this ratio (regional FMR to national FMR) reflects only the regional difference in the cost of housing, Reed (2006) applies the ratio to the estimated proportion of income low-income families spend on housing.

---

1 U.S. Census Poverty Thresholds are available online at: [http://www.census.gov/hhes/www/poverty/threshld.html](http://www.census.gov/hhes/www/poverty/threshld.html). HUD FMRs are available online at: [http://www.huduser.org/datasets/fmr.html](http://www.huduser.org/datasets/fmr.html).

2 To calculate the national average FMR, Reed (2006) used data from the U.S. Census Current Population Survey (CPS). Reed linked FMR data to CPS data by metropolitan area and by state for non-metropolitan area. She then computed the national average FMR using this construct dataset. This method should produce approximately the same result as using the complete FMR dataset available from HUD and linking to the population of each county, which is easier to implement primarily because it does not require using the CPS.
The NAS panel estimated this proportion to be 0.44; that figure is based on the proportion of consumer expenditures devoted to housing for two-adult/two-child families spending at the 35th percentile of the distribution on food, housing, and clothing (from the BLS Consumer Expenditure Survey). Nonhousing costs, such as for food, clothing, and health care, also differ geographically. However, the data to adjust nonhousing costs for geographic variation generally do not exist, and the NAS panel recommends adjusting the housing component only given the current state of research.3

Thus, the ratio of the regional poverty threshold to the national threshold would be

\[(0.44) \times (\text{Regional FMR/National Average FMR}) + 0.56\].

This ratio could be applied to any of the national poverty thresholds, which differ by number of people and number of adults in the household. (However, when calculating a specific numeric threshold, the analysis should take into account the relationship between number of bedrooms and household size.)

3.13 Summary

Based on the assessment of the above programs, low income definitions for administrative purposes (such as program eligibility) are generally a percentage increase over the federal poverty guidelines. These adjustments appear to reflect both broad national considerations and more regionalized economic situations (higher area cost of living). The percentage adjustment to the federal poverty guidelines is generally between 120 percent and 135 percent.

Table 1 provides a summary of low-income guidelines recommended or used by the various agencies and studies included in this paper. The first row in the table displays the U.S. Census Poverty Thresholds, which are the basis for determining the U.S. Health and Human Services 2007 Poverty Guidelines shown in the second row. The HHS Poverty Guidelines are generally the basis for the other guidelines displayed in the table, most of which are 125 percent to 135 percent of the HHS guidelines.

---

3 Citro and Michael (1995) state that “No adjustment has been made for spatial differences in prices, not because the adjustment is necessarily undesirable in principle, but because of the practical difficulties of adequately measuring those differences. There are no geographic area cost-of-living indexes that correspond to the Consumer Price Index: Bureau of Labor Statistics (BLS) produces price indexes for a limited number of metropolitan areas, but not for rural areas. Moreover, the BLS indexes are designed to allow comparison of differences in price inflation across areas; they do not permit comparison of price levels across areas…. At this stage of knowledge, we recommend that the adjustment be made for the housing component of the poverty thresholds. Research indicates that housing (including utilities) is the item for which prices vary most across the country, and considerable effort has been devoted to estimating interarea housing cost indexes.”
### Table 1
Comparison of Low-Income Guidelines (2007 except as noted)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Number of Persons in Household</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>US HHS1</td>
<td>$10,210</td>
</tr>
<tr>
<td>US HUD AMI30</td>
<td>$15,550</td>
</tr>
<tr>
<td>US HUD AMI50</td>
<td>$25,900</td>
</tr>
<tr>
<td>US HUD AMI80</td>
<td>$41,450</td>
</tr>
<tr>
<td>USDA Free Meal</td>
<td>$13,273</td>
</tr>
<tr>
<td>USDA Reduced Meal</td>
<td>$18,889</td>
</tr>
<tr>
<td>USCIS</td>
<td>NA</td>
</tr>
<tr>
<td>CA Title V</td>
<td>$12,763</td>
</tr>
<tr>
<td>CA Title V (L.A.)</td>
<td>$13,785</td>
</tr>
<tr>
<td>CA HICAP</td>
<td>$15,315</td>
</tr>
<tr>
<td>LA DPSS 100%</td>
<td>$10,210</td>
</tr>
<tr>
<td>LA DPSS 250%</td>
<td>$25,525</td>
</tr>
</tbody>
</table>

1. **U.S. Health and Human Services Federal Poverty Guidelines**

### 4.0 Method Used

From an analytical perspective, it is best to use a ratio based directly on Census poverty thresholds. The most comprehensive source of income data at a fine geographic level is the U.S. Decennial Census. For block groups (which generally contain 600 to 3,000 people), the Census provides number of households in 5,000 income categories (but not cross-tabulated by other characteristics such as household size), and the number of people with a given ratio of income to the Census poverty threshold for their household size and number of dependents (for income-to-poverty ratios of 0-0.5, 0.5-0.75, 0.75-1, 1-1.25, 1.25-1.5, 1.5-1.75, 1.75-1.85, 1.85-2, and over 2). Thus, for instance, the Census can be used to derive the number of people whose income was less than 1.5 times the Census poverty threshold for their particular situation (household size and number of dependents). The advantage of the income-to-poverty ratio data is that they use the full richness of the Census dataset on individual income and household characteristics; that is, individual people and households are evaluated with respect to their individual situations.

Because the papers from the Public Policy Institute of California (Reed, 2006) and the National Academy of Sciences (Citro and Michael, 1995) have the best developed approach to identifying regional low-income thresholds, SAIC developed poverty thresholds following the method described in these papers. Thus, SAIC calculated the ratio of the FMR for Los Angeles County to the national average FMR. To calculate the national average FMR, SAIC used a population-weighted average, using population data from the FMR dataset constructed by HUD and representing population estimates from the 2000 U.S. Census within a specified FMR area. For comparison purposes, SAIC computed the ratio of the Los Angeles County FMR to the national average FMR for all years between 1999 and 2007. The computed index values are presented in Table 2.
SAIC then developed ratios indicating the relationship between the regional poverty threshold (for Los Angeles County) to the national poverty thresholds using the method described above in Section 3.12 (i.e., 0.56 + 0.44 x Regional FMR/National FMR). Table 3 presents the resulting ratios.

### Table 2

Ratio of Los Angeles County FMR to National FMR

<table>
<thead>
<tr>
<th>Year</th>
<th>Efficiency</th>
<th>1-bdrm</th>
<th>2-bdrm</th>
<th>3-bdrm</th>
<th>4-bdrm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1.17</td>
<td>1.19</td>
<td>1.22</td>
<td>1.24</td>
<td>1.28</td>
</tr>
<tr>
<td>2000</td>
<td>1.17</td>
<td>1.18</td>
<td>1.21</td>
<td>1.23</td>
<td>1.28</td>
</tr>
<tr>
<td>2001</td>
<td>1.13</td>
<td>1.14</td>
<td>1.17</td>
<td>1.19</td>
<td>1.23</td>
</tr>
<tr>
<td>2002</td>
<td>1.13</td>
<td>1.14</td>
<td>1.17</td>
<td>1.19</td>
<td>1.23</td>
</tr>
<tr>
<td>2003</td>
<td>1.26</td>
<td>1.27</td>
<td>1.30</td>
<td>1.32</td>
<td>1.37</td>
</tr>
<tr>
<td>2004</td>
<td>1.30</td>
<td>1.31</td>
<td>1.34</td>
<td>1.36</td>
<td>1.41</td>
</tr>
<tr>
<td>2005</td>
<td>1.31</td>
<td>1.40</td>
<td>1.46</td>
<td>1.49</td>
<td>1.58</td>
</tr>
<tr>
<td>2006</td>
<td>1.36</td>
<td>1.45</td>
<td>1.52</td>
<td>1.56</td>
<td>1.64</td>
</tr>
<tr>
<td>2007</td>
<td>1.39</td>
<td>1.49</td>
<td>1.55</td>
<td>1.59</td>
<td>1.68</td>
</tr>
</tbody>
</table>

The year-over-year increases in the ratio of the implied Los Angeles County poverty threshold to the national threshold suggest that in recent years, the degree to which the regional cost of living exceeds the national average has increased. However, the ratios are all between 1.06 and 1.30, and most are under 1.25. This suggests that using Census data on the number of people with income-to-poverty-threshold ratio of either less than 1, or less than 1.25, would be an appropriate regional definition for low-income populations.

To be conservative (i.e., include more people in the low-income category), SAIC used 1.25 times the Census poverty threshold to measure low-income populations for this analysis. The use of this higher threshold is also consistent with the concepts used by various federal and state agencies, as described in Section 3, which involve using 1.25 to 1.35 times the HHS poverty guidelines.

### Table 3

Ratio of Los Angeles County Poverty Threshold to National Poverty Threshold

<table>
<thead>
<tr>
<th>Year</th>
<th>Efficiency</th>
<th>1-bdrm</th>
<th>2-bdrm</th>
<th>3-bdrm</th>
<th>4-bdrm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1.08</td>
<td>1.08</td>
<td>1.10</td>
<td>1.10</td>
<td>1.12</td>
</tr>
<tr>
<td>2000</td>
<td>1.07</td>
<td>1.08</td>
<td>1.09</td>
<td>1.10</td>
<td>1.12</td>
</tr>
<tr>
<td>2001</td>
<td>1.06</td>
<td>1.06</td>
<td>1.08</td>
<td>1.08</td>
<td>1.10</td>
</tr>
<tr>
<td>2002</td>
<td>1.06</td>
<td>1.06</td>
<td>1.08</td>
<td>1.08</td>
<td>1.10</td>
</tr>
<tr>
<td>2003</td>
<td>1.11</td>
<td>1.12</td>
<td>1.13</td>
<td>1.14</td>
<td>1.16</td>
</tr>
<tr>
<td>2004</td>
<td>1.13</td>
<td>1.14</td>
<td>1.15</td>
<td>1.16</td>
<td>1.18</td>
</tr>
<tr>
<td>2005</td>
<td>1.14</td>
<td>1.17</td>
<td>1.20</td>
<td>1.22</td>
<td>1.25</td>
</tr>
<tr>
<td>2006</td>
<td>1.16</td>
<td>1.20</td>
<td>1.23</td>
<td>1.25</td>
<td>1.28</td>
</tr>
<tr>
<td>2007</td>
<td>1.17</td>
<td>1.21</td>
<td>1.24</td>
<td>1.26</td>
<td>1.30</td>
</tr>
</tbody>
</table>
5.0 References


Reed, Deborah. 2007. E-mail Correspondence. April 18.


