Chapter 1
Introduction

1.1 Organization of the Final Environmental Impact Report

This chapter presents background and introductory information for the Proposed Project, the Berths 191-194 (Ecocem) Low-Carbon Cement Processing Facility, located in the Port of Los Angeles (Port). This chapter includes descriptions of the environmental setting of the Proposed Project, the purpose of the Proposed Project, and a description of the Proposed Project. Chapter 2 presents information regarding the distribution of the Draft Environmental Impact Report (Draft EIR) and the comments of agencies and the public on the Draft EIR, and also presents the responses of the lead agency to those comments. Chapter 3 presents the changes made to the Draft EIR in response to the comments.

This Final EIR has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) (Pub. Res. Code §21000 et seq.) and the State CEQA Guidelines (Cal. Code of Regs. Tit. 14, §15000 et seq.). The Los Angeles Harbor Department (LAHD) is the CEQA lead agency.

1.2 Existing Conditions

1.2.1 Regional Setting

LAHD operates the Port under the legal mandates of the Port of Los Angeles Tidelands Trust (Los Angeles City Charter, Article VI, Section 601) and the California Coastal Act (PRC Division 20, Section 30700 et seq.), which identify the Port and its facilities as a primary economic and coastal resource of the State of California and an essential element of the national maritime industry for the promotion of commerce, navigation, fisheries, and harbor operations. LAHD is chartered to develop and operate the Port to benefit maritime uses. It functions as a landlord by leasing Port properties to more than 300 tenants.

The Port encompasses approximately 7,500 acres of land and 43 miles of waterfront and provides a major gateway for international goods and services. The Port comprises approximately 25 major cargo terminals, including dry and liquid bulk, container, breakbulk, automobile, and passenger facilities. In calendar year 2020, the Port handled approximately 207 million metric revenue tons of cargo, including 9.2 million TEUs of containerized cargo, and saw 1,654 vessel arrivals. In addition to cargo business

operations, the Port is home to commercial fishing vessels, shipyards, and boat repair facilities, as well as recreational, community, and educational facilities.

Land access to and from the Port is provided by a network of freeways and arterial routes. The freeway network consists of the Harbor Freeway (Interstate [I]-110), the Long Beach Freeway (I-710), the San Diego Freeway (I-405), and the Terminal Island Freeway (State Route [SR]-103/SR-47)

1.2.2 Project Site and Surrounding Uses

The Project site (Figure 1-1) is located within the Port of Los Angeles Community Plan area in the City of Los Angeles, which is adjacent to the City of Los Angeles communities of San Pedro and Wilmington. The site is a 6.1-acre parcel of land on Yacht Street in an industrial area in the vicinity of the East Basin in the Los Angeles Harbor. The site is generally bounded by the Vopak liquid bulk terminal to the north and west; and the University of Southern California (USC) Boathouse and the East Basin to the south and east. Formerly occupied by a liquid bulk facility and recreational boating uses, the site is now largely vacant, although, a portion of the site is occupied by a boat restoration operation. Berth 191, which is part of the Vopak leasehold, is southwest of, and immediately adjacent to, the site. Local access is provided by Harry Bridges Boulevard, Avalon Boulevard, Canal Street, and Yacht Street.

Land uses in the vicinity of the Project site support a variety of cargo handling operations, including container, liquid bulk, automobile import, and dry bulk; a power plant (Harbor Generating Station); Port administration and maintenance facilities; maritime support uses; and recreational, light commercial, and residential uses.

The site is part of Assessor Parcel Number 7440010910. The site has a General Plan land use designation of General Bulk Cargo (Non-Hazardous Industrial and Commercial) and is zoned [Q] M3-1 (“Qualified Heavy Industrial”) by the City of Los Angeles’ Zoning Ordinance. The site is in Planning Area 2 of the Port Master Plan with a designated use of liquid bulk.

1.3 Project Overview

1.3.1 Background

Cement is a vital component of the construction industry in Southern California, being used in all concrete and in a variety of other construction applications. In 2021, approximately 6.3 million metric tons of cement were shipped for consumption in Southern California. Because of the large amounts of energy required, the production of cement is carbon-intensive: one estimate is that cement production is responsible for approximately 8% of worldwide carbon dioxide (CO_2) emissions and nearly 2% of California’s emissions (Ellis et al. 2020).

In September 2021, California passed Senate Bill (SB) 596 “Greenhouse gases: cement sector: net-zero emissions strategy” which requires the California Air Resources Board (CARB) to develop a comprehensive strategy for the State’s cement sector to achieve net-zero emissions of greenhouse gases associated with cement used in the state as soon as possible, but no later than December 31, 2045. Ecocem (the parent company of Orcem, the entity that would operate the proposed facility) has a process for making a binder (ground granulated blast furnace slag [GGBFS])) that requires smaller amounts of

carbon-based fuels than traditional Portland cement and that serves as a partial substitute to traditional Portland cement and Portland limestone cement in concrete. Ecocem estimates the energy (thermal and electric) consumption of their process to be approximately 14 percent that of the typical cement making process.

1.3.2 Project Summary

Ecocem is proposing to build a facility that would produce the GGBFS binder for the Southern California building industry, helping the region avoid shortages of a vital material and California to reach its carbon reduction and net-zero emissions goals. The Proposed Project includes construction of process buildings and conveyors, an administration and maintenance building, material storage silos and piles, and truck loading facilities on the backlands behind Berths 192-194, repairs to the wharf at Berth 191, and operation of the facility. Additional elements of the Proposed Project include amendment of the Port Master Plan to change the designated use of the Berths 192-194 site from liquid bulk to dry bulk and issuance by the LAHD of a 32-year entitlement for the site that would include 30 years of operation and two years of construction, as well as access to Berth 191.

The proposed facility (Figure 1-2) would produce GGBFS by grinding granulated blast furnace slag (GBFS) imported from overseas and combining it with natural gypsum minerals in the proportions of approximately 95-97% GBFS and 3-5% gypsum. A portable belt conveyor system would convey GBFS from oceangoing vessels at Berth 191 to open storage piles in the processing facility. Mobile equipment such as front-end loaders would feed the GBFS and natural gypsum into hoppers that would feed the processing mill, where it would be ground, dried, and mixed to produce GGBFS. That product would be stored in silos from which third-party trucks would be loaded with the GGBFS product for transport to concrete production facilities throughout the region.

1.4 Project Purpose and Objectives

The Proposed Project would help Southern California avoid further shortages of a construction material that is vital to provide the safe and durable infrastructure required for sustained economic growth, while at the same time meeting California's goals for reducing future greenhouse gas emissions.

The purpose of the Proposed Project is to provide Southern California's construction industry with a robust supply chain for GGBFS, and to use GGBFS in combination with Ecocem's proprietary technologies to help the State of California:

1. Meet its net-zero emission targets for all cement used in the state; and
2. Construct durable, resilient, and eco-efficient infrastructure required for a sustainable economy.

To achieve this purpose, the Proposed Project has the following objectives:

- Provide necessary raw material import capacity for an environmentally sustainable product;
- Establish a processing facility to produce the binder at a deep-water berth in Southern California, with permanent local manufacturing jobs, that is:

  - Capable of adapting to changes in raw material sources in order to maintain a steady supply of product;
  - Capable of providing storage capacity for the rapid unloading of bulk ships delivering raw materials and for loading product on bulk tanker trucks; and
  - Located near the center of the Southern California market to reduce the traffic burden, road wear, and energy requirements associated with truck transport of product.
- Facilitate the future development of improved low-carbon, high-performance binders.

Figure 1-1. Proposed Project Site Location

1.5 Proposed Project

The Proposed Project consists of the construction and operation of a facility that would import GBFS by oceangoing vessels from overseas sources, grind the GBFS together with gypsum to produce GGBFS, and load the GGBFS onto third-party trucks for delivery to regional cement and ready-mix plants. The majority of Project construction would be land-based, including construction of the storage facilities, mill, and loading facilities in the backlands behind Berths 192-194, and repairs to the wharf deck at Berth 191. In-water work would be required at Berth 191 to remove damaged timber pilings and replace them with new pilings to bring the wharf into serviceable condition. This description of the Proposed Project is summarized from the full description provided in Section 2.5 of the Draft EIR.

1.6 Construction

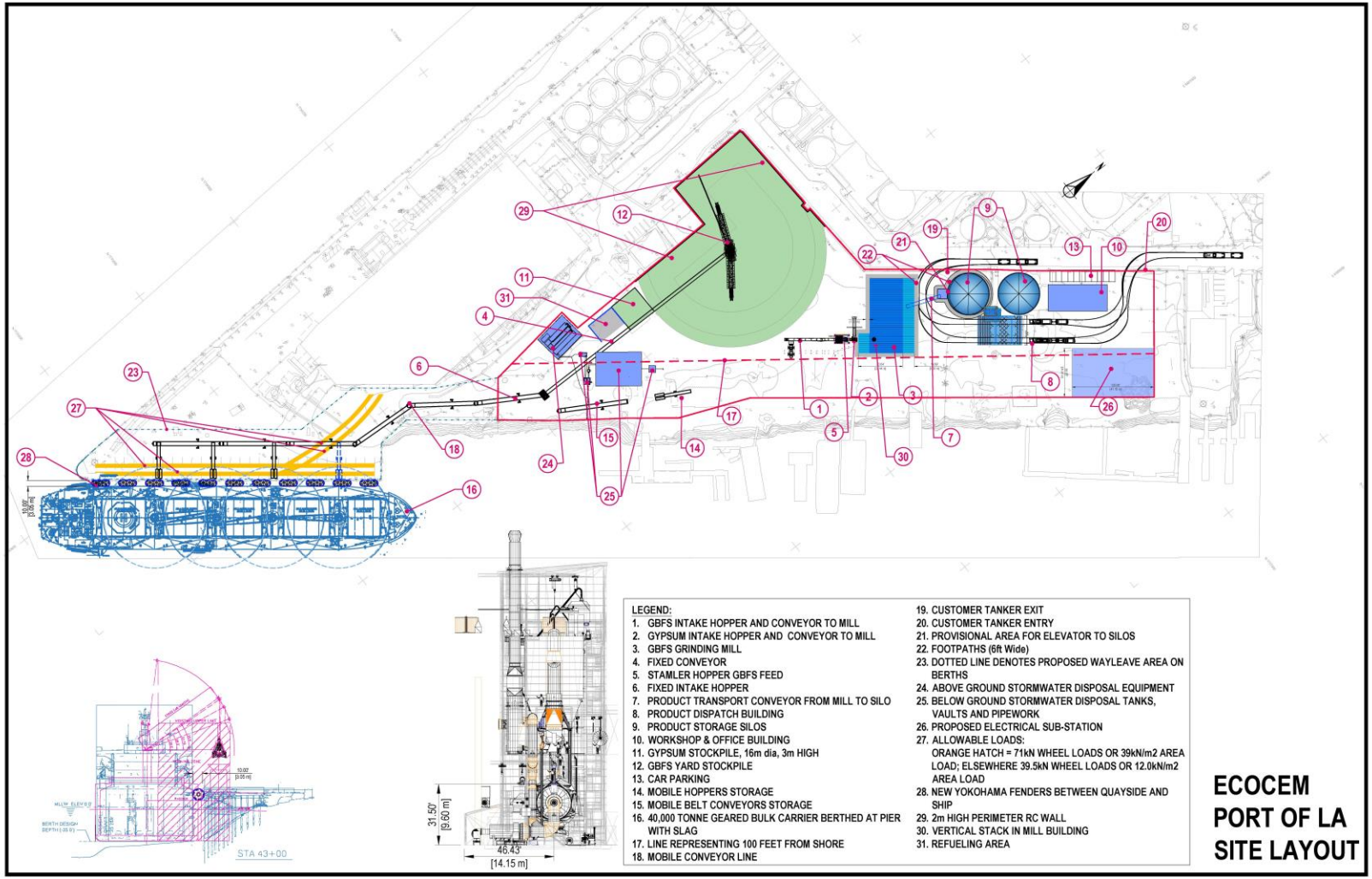
Construction at Berths 192-194

Construction of the Proposed Project at the backlands of Berths 192-194 would consist of the following primary elements:

- Site preparation, including minor site clearance;
- Ground improvements such as soil stabilization and paving;
- Development of the enclosed milling plant, storage facilities, open-storage yard, conveyance systems, and processing equipment;
- Construction of ancillary buildings (workshop and plant office); and
- Improvement of site infrastructure and supporting facilities.

Following site clearance and preparation, ground improvements would be done to enhance the load-bearing capability of the soil mass, particularly liquefiable soils, and provide sufficient capacity for intended uses to meet building code requirements. Structures representing significant loads would be supported on piled foundations or concrete mat foundations supported by stone columns (a technique in which deep holes are drilled and backfilled with aggregate). Non-settlement-sensitive structures would be supported on concrete mat foundations. Stone columns would be installed by drill rigs using a technique that does not bring soil to the surface.

Figure 1-2. Proposed Project Site Plan



Soil and groundwater at the site are known to be contaminated by petroleum hydrocarbons, heavy metals, and volatile organic compounds. Accordingly, a soil management plan has been prepared in accordance with applicable regulatory requirements and the recommendations of a site-specific health risk assessment in order to minimize risks of contaminant release during construction and exposure of workers and the public.

Buildings would generally be constructed of structural steel and concrete with suitable cladding to the exterior. The largest building, the mill, would be approximately 150 feet high, and the adjacent stack would be 165 feet-high. The product storage silos would be approximately 135 feet high and the truck loading building would be 120 feet high. There would also be a low-rise workshop/office building.

In addition to buildings, a permanent stormwater control system compliant with the National Pollutant Discharge Elimination System (NPDES) Industrial General Permit (IGP) and the Los Angeles County MS4 Permit, as applicable, would be constructed. The majority of the site, including stockpiles, material handling areas, and the mill, silo, and truck loading areas, would be covered by the IGP. To ensure compliance with the IGP, a comprehensive stormwater management approach would be implemented that would include berms, grading, and trench drains to capture stormwater. The captured stormwater would be conveyed to a treatment system that would meet the specific discharge requirements of the IGP. Consistent with the requirements of the City's Low Impact Development (LID), the stormwater system(s) for all non-industrial areas would incorporate water quality management Best Management Practices (BMPs), site-design BMPs, and drainage infrastructure to manage surface runoff.

Infrastructure development would include electrical and instrumentation installations, lighting, a new electrical substation, paving, a bermed area for refueling the front-end loader, landscaping, and fencing.

Construction would last approximately 18 months and require up to 75 construction workers on a peak construction day. Construction-phase traffic would include worker vehicles and a variety of medium- and heavy-duty vehicles hauling debris and excavated material and bringing in imported soil, supplies, equipment, and construction materials. Construction is assumed to take place between 7 a.m. and 5 p.m. five days per week (Monday through Friday) except national holidays.

Berth 191 Repairs

The Proposed Project would include repairs and modifications to the wharf at Berth 191 that would be used by oceangoing vessels serving the Ecocem facility. The existing footprint of the wharf at Berths 191 would not change as a result of the proposed repairs and modifications. Construction would include repairs to deteriorated and/or damaged existing structures caused by past cement unloading operations and modifications to accommodate the Proposed Project's vessels.

Repairs would include strengthening the wharf deck and supporting structures, replacing 52 deteriorated timber structural and fender piles, repairing the wharf deck by removing and replacing the existing asphalt overlay and timber deck in the KOVAKO® travel path, installing reinforcing jackets on 28 concrete piles, and performing general concrete patching. Modifications would include installing 47 new fender piles at the wharf's edge and installing a new Yokohama fender system.

Although the work at Berth 191 could be entirely land-based, this EIR conservatively assumes that some pile removal and driving would be accomplished using water-borne equipment, and that some maintenance dredging of up to 1,500 cubic yards of sediment and construction debris to clean-up the slope after construction activities may be necessary; the dredge material would likely be disposed of in the Port's nearby Berths 243-245 Confined Disposal Facility but could be disposed of at the LA-2 ocean disposal site if found suitable.

Up to six workers would be on-site to conduct construction at Berth 191. Repairs would last 12 months and occur 5 days per week (Monday through Friday) except for holidays, for 8 hours per day starting from 8 a.m. through 5 p.m.

1.7 Project Operation

1.7.1 Entitlement Conditions

The Proposed Project includes an entitlement allowing use of the premises and access to Berth 191 for up to 30 years. The entitlement would require that the premises be used for activities related to operation of a GGBFS processing facility and would require compliance with all applicable laws, regulations, and policies. The latter would include, for example, measures adopted as mitigation based on the Final EIR, Clean Air Action Plan (CAAP) measures, Port Environmental Policy measures, and Port Real Estate Leasing Policy measures (POLA 2013), as applicable.

In addition, the U.S. Army Corps of Engineers (USACE) has authority to place special conditions in any USACE permit that may be required for the wharf repairs, which would constitute mitigation measures specific to USACE jurisdiction (i.e., waters of the United States).

1.7.2 Facility Overview

The analyses in this EIR assume that the facility would begin operation in 2025 and reach full operation by 2027 (Table 1-2). Any postponement of operational activities beyond that time frame would not likely result in greater impacts as increasingly stringent regulatory requirements and cleaner engines from turnover are implemented compared to those assumed in the analyzed years.

At full operation, projected to be at 97% capacity, the facility would produce approximately 775,000 metric tons of GGBFS per year, requiring approximately 800,000 metric tons of GBFS and 39,500 metric tons of gypsum (the difference between the quantities of raw materials and the quantity of product is due to moisture loss during processing). The facility would operate up to 24 hours per day, 7 days per week, but trucks carrying product would arrive and depart 5-6 days per week. No rail operations would be conducted because the facility would not have rail access.

1.7.3 Vessel Operations

GBFS from Asia or Mexico would be delivered by moderate-size oceangoing bulk carrier vessels with a capacity of up to 45,000-56,000 deadweight tons and a length of 500 to 625 feet, powered by marine diesel engines and equipped with onboard cargo unloading cranes. Within the harbor, each vessel would be escorted by one or two tugboats,

depending on conditions, that would help the ship maneuver. Vessels would dock at Berth 191, the use of which would be shared between the Ecocem facility and the neighboring Vopak terminal's proposed cement import terminal. Once at-berth, each vessel would typically spend approximately five days (120 hours) at-berth, and on average approximately 60% of that time would be spent actively unloading cargo. Once unloaded, the vessels would transit back out of the Port with tug assistance. Each pair of one-way transits and the time at-berth is a vessel call.

While at-berth, the vessels would turn off the main engines and run auxiliary diesel engines to provide power for the unloading gear and general vessel needs. Although CARB does not require control of vessel emissions at berth for the type of vessels that would service the Proposed Project, Ecocem plans to use a control technology based on a barge-mounted scrubber system that captures and treats auxiliary engine exhaust emissions from vessels while at-berth. The technology has been employed to control at-berth emissions from containerships in the Port and is estimated to result in emissions reductions from the uncontrolled case. However, the technology is not yet certified by CARB for controlling emissions from dry bulk cargo ships. Accordingly, although capture of at-berth emissions would be required by a lease measure once the technology is certified and deemed feasible, the air quality analysis in this Draft EIR does not take credit for reductions achieved by those controls.

Table 1-1. Operational Activity of the Proposed Project

Activity	2025	2026	2027 and thereafter
GBFS Import, metric tons/yr	400,000	600,000	800,000
Gypsum Import, metric tons/yr	19,750	29,600	39,500
GGBFS production, metric tons/yr	387,500	581,000	775,000
Vessel calls per year	12	18	24
Gypsum truck trips, one-way trips/yr	1,975	2,960	3,950
GGBFS truck trips, one-way trips/yr	31,000	46,480	62,000
Total trucks one-way trips/yr	32,975	49,440	65,950
Employees on site	20	20	26

Notes:
1. Vessel call = vessel visits, which are comprised of arrival transit, time at berth, departure transit, and possible anchorage time (only a fraction of the calls would experience anchorage)
2. Truck or vehicle trip = one-way, individual trips
3. Differences in mass balance between raw materials (GBFS and gypsum) and product (GGBFS) is related to moisture content in raw materials.

1.7.4 Facility Operations

A portable, covered, electric-powered conveyor belt system stored on the facility site would be deployed into position along the waterfront for each vessel call to transport the GBFS from Berth 191 to the stockpiles in the facility. The vessel's deck cranes would discharge into portable hoppers positioned to discharge onto the portable conveyor on the wharf. The portable system would feed the GBFS into a fixed, covered electric conveyor

that would transport the GBFS onto a radial stacker conveyor, which would discharge the material onto the paved, open yard stockpile. Gypsum would be offloaded from delivery trucks and stacked into the paved gypsum open-storage stockpile.

The conveyor system would transport the GBFS and gypsum to an electric-powered mill for processing. The electric-powered mill would grind the GBFS and gypsum into the powdered product (GGBFS) in a continuous process. The wet GBFS would enter the mill and be dried to less than 0.2% moisture by incoming air preheated by a natural-gas-fueled air heater. The moist mill exhaust air would be filtered through a fabric filter bag house and then be vented out the exhaust stack.

The GGBFS product would be conveyed from the mill discharge to a particle separator. Particles fine enough to meet product specifications would be conveyed by air to a fabric filter bag house, while coarser material would be returned to the mill for further grinding. Material collected on the bag filter would be transported by an enclosed, electric-powered air slide to a bucket elevator that would lift it to the top of the final product storage silos, where the bulk of the GGBFS product would be stored. Air injection systems at the bottom of the product storage silos would fluidize the GGBFS powder that would be transported via air slide and bucket elevator to truck loading silos.

The loading silos would be located above scales to weigh trucks during the loading process to control load weights. Truck loading would be carried out within a building located below the product dispatch silos.

To control entrainment of raw materials, stockpile management would include watering the hopper areas and other areas used by heavy equipment several times a day. In addition, areas near the stockpiles would be graded to collect and convey industrial and stormwater runoff into the storm drainage system. If recycling treated stormwater is consistent with regulatory requirements, the collected water would be treated and recycled for use in dust control, but to be conservative, that is not assumed in the analyses of impacts. The conveyors would be covered to minimize the escape of fugitive particulates that could enter stormwater or the air. The finished product, a fine powder, would be controlled by multiple filters and enclosed conveyors that would ensure efficient, safe, and largely dust-free milling, storage, and loading processes.

1.7.6 Truck Operations

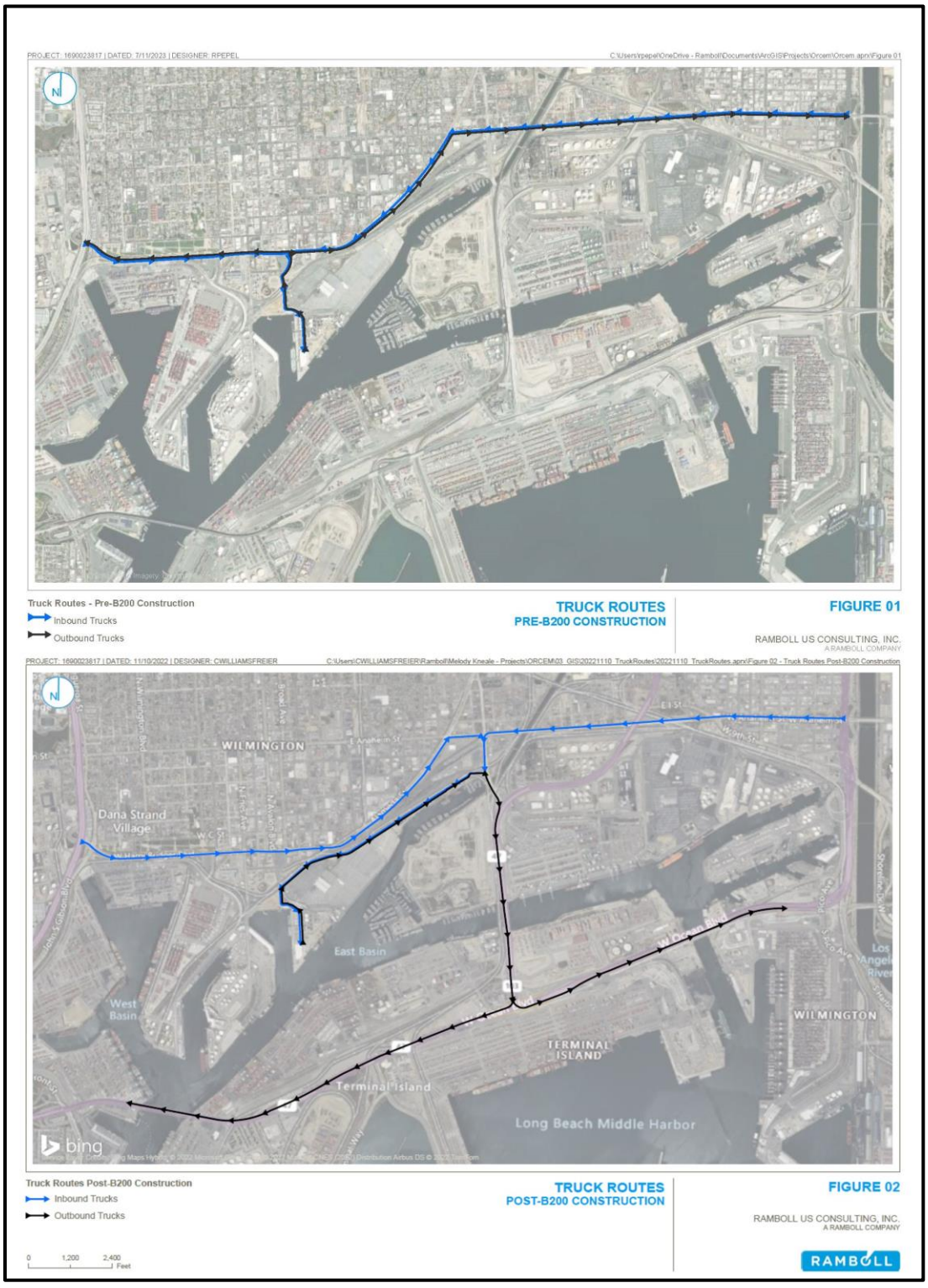
The GGBFS would be shipped in contracted, third-party, sealed dry-bulk pneumatic tanker trailer trucks. Ecocem would not have ownership or control of the truck fleet used by their customer base. The heavy-duty trailer/tractors would be diesel or alternative fuel-powered, 18-wheel semi-trailer rigs, compliant with California's truck regulations and each capable of carrying up to approximately 25 metric tons of GGBFS. Gypsum would be delivered to the facility by medium-duty box trucks.

Inbound and outbound trucks would use California Department of Transportation (Caltrans)-designated truck routes in the Port area (Figure 1-3). Prior to completion of the Berth 200 Roadway Extension, empty trucks would arrive at the facility from the west via I-110 and Harry Bridges Boulevard to Broad Avenue; from the east via I-710, Anaheim Street, Alameda Street (SR-47) and Harry Bridges Boulevard to Broad Avenue. Trucks would then continue southbound on Broad Avenue to Avalon Avenue, and finally onto Water Street and Yacht Street to the facility (the loaded departures would follow the reverse route). After the Berth 200 Roadway Extension is built, which is estimated to be completed in March 2028, trucks arriving via I-110 or I-710 would go south on Henry

Ford Avenue from eastbound or westbound Anaheim Street and make a right unto the B200 Roadway Extension, connecting to Avalon Road and Water Street. All departing vehicles would use the Berth 200 Roadway Extension to leave the peninsula and would turn south on Henry Ford Avenue to merge on the Terminal Island Freeway towards their final destinations.

Once in the facility, the empty trucks would enter an enclosed loading area and be positioned on weighbridges, where a snorkel loading tube would descend into the open hatches on the tank trailers to be precisely loaded with GGBFS, thereby reducing the risk of dust release during loading. When loading is complete, the hatches would be sealed, and the trucks would depart to customer locations throughout Southern California.

Figure 1-3. Project Truck Routes. Pre- and Post- Construction of Berth 200 Roadway Extension



1.8 Changes to the Draft EIR

The Final EIR discusses changes and modifications that have been made to the Draft EIR. Actual changes to the text, organized by chapters, sections, and appendices, are presented in Chapter 3, "Modifications to the Draft EIR," of this Final EIR.

Changes noted in Chapter 3 are identified by text strikeout and underline. These changes are referenced in Chapter 2, "Response to Comments," of this Final EIR, where applicable. The changes and clarifications presented in Chapter 3 were reviewed to determine whether or not they warranted recirculation of the EIR prior to certification according to CEQA Guidelines and Statutes. The changes would not result in any new significant environmental impacts or a substantial increase in the severity of an existing environmental effect. There would be no new or increased significant effects on the environment due to changes in the Proposed Project, and no new alternatives have been identified that would reduce significant effects of the Proposed Project. Therefore, recirculation is not required consistent with Public Resources Code Section 21092.1 and CEQA Guidelines Section 15088.5.

1.9 References

Ellis, L.D., A.F. Badel, M.L. Chiang, R. J-Y Park, and Y-M. Chiang. 2020. Toward electrochemical synthesis of cement – An electrolyzer-based process for decarbonizing CaCO3 while producing useful gas streams. PNAS 117(23): 12584-12591.

POLA (Port of Los Angeles). 2013. Leasing Policy. https://kentico.portoflosangeles.org/getmedia/aa9f4c08-7d5e-47bf-8858-2b2c3523f91d/072513_item_11_transmittal_1