Appendix E
Energy

ESA

E-1 Vehicle Energy Technical Report

WORLD LOGISTICS CENTER

Transportation Energy Technical Study

Prepared for
City of Moreno Valley
14177 Frederick Street
Moreno Valley, California 92552

November 2019





Prepared by:
ESA, with contributions from CALSTART

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WORLD LOGISTICS CENTER (WLC)
Transportation Energy Technical Study

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1.Project Background

Environmental Science Associates (ESA) is providing this Transportation Energy Technical Report in support of the California Environmental Quality Act (CEQA) document development for the World Logistics Center (WLC) Project being considered by the City of Moreno Valley. This report assesses the feasibility of implementing available technologies and other measures for improving energy performance and/or reducing harmful air pollutants emissions from transportation sources resulting from implementation of the Project, based on Project applicability, relative cost, commercial readiness, funding availability, policy and regulatory support, potential industry partners, and other factors.

The proposed Project as evaluated by the May 2015 Draft Environmental Impact Report (DEIR) is the World Logistics Center Specific Plan (WLCSP), a master plan covering 2,610 acres and proposing a maximum of 40.4 million square feet of "high-cube logistics" warehouse distribution uses (approximately 99.5 percent of the total building area) classified as "Logistics Development" (LD) and 200,000 square feet (approximately 0.5 percent) of warehousing-related uses classified as "Light Logistics" (LL).

High cube logistics warehouses are characterized by a high level of automated material handling systems and truck activities that typically occur outside of the peak traffic hour. High cube logistics warehouses are generally used for the storage of manufactured goods prior to their distribution to retail outlets. High-cube warehouse and logistics facilities include ancillary office and maintenance space along with the outdoor storage of trucks, trailers, and shipping containers.

The WLCSP describes warehousing and logistics activities consistent with the storage and processing of manufactured goods and materials prior to their distribution to other facilities and retail outlets. Refrigerated warehouse space is not an allowed use within the Specific Plan area (see Mitigation Measure 4.3.6.3E in the DEIR). LD land uses provide a location for businesses to sort, organize, and transfer products from one shipping process to another.

Project Design Features and Sustainable Development Standards

The WLCSP requires sustainable development standards be implemented so that new development within the Project area minimizes energy consumption, conserves water, and uses recycled or sustainable building materials, where feasible (WLCSP September 2014, Section 1.3.2, Green Building-Sustainable Development). It provides developers with a specific framework for identifying and implementing a variety of practicable and measurable green building design, construction, operations, and maintenance. All new development within the project area will be required to meet the California Building Energy Standards in effect at the time construction commences. In addition, buildings within the Specific Plan will be structurally upgraded to be "solar ready" (i.e., allow the installation of solar photovoltaic systems on the roof of each building) (WLCSP Section 1.3.2, Green Building – Sustainable Development). The WLCSP will require extensive energy conservation measures, solar energy systems, and underground utilities to be installed on future development.

The sustainability guidelines for the World Logistics Center serve the following functions to:

- Assist in meeting California's greenhouse gas reduction targets as set forth through Executive Order S-3-05 and Assembly Bill 32 and its amendment Assembly Bill SB 32 (also known as the Global Warming Solutions Act of 2006);
- Assist in the region's development of a Sustainable Communities Strategy pursuant to Senate Bill 375;
- Assist in meeting other state and local goals and requirements, including Assembly Bill 1385, The Complete Streets Act;
- Establish practical and innovative solutions for the developer, business, and residential community to improve resource efficiency and reduce consumption of energy, water, and raw materials; and
- Support waste management reduction identified in AB 341.

Building Design and Construction Features:

- Achieve applicable elements of certification from the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED)[1], and encourages LEED certification best practices for use of recycled materials and products, such as recycled steel, and crushed concrete and pavement materials;
- Install electric vehicle charging stations per the local building code (6 percent of parking spaces);
- Construct "Solar ready" buildings;
- Implement design and construction techniques will be employed to reduce the heat island effect, including the use of materials that have a low solar reflectance index such as white roofs and light-colored pavements;
- Develop waste management plan and a comprehensive recycling and management program to divert at least 50 percent of waste from landfill, including storage and collection of recyclables, building and material reuse, and careful construction waste management;
- Incorporate the use of passive heating and cooling into the design or modification of the high-cube warehouse development (e.g., white building colors and roof insulation to minimize heat gain, and landscaping to help shade buildings);
- Install outdoor electric outlets to accommodate the use of electrical property maintenance equipment (Section 12.4 of the WLCSP);
- Install advanced irrigation systems, drought-tolerant plants, the use of mulch, recycled and other permissible alternative sources of water, and turfless plantings with alternative landscaping materials such as rock and other materials that do not require potable water sources.

Transportation Features:

- Construct sidewalks and a multiuse trail for pedestrian circulation; and
- RTA will determine if and when bus service will be provided by RTA.
- All streets are designed to accommodate bus services (WLCSP Section 3.2.4)

Solid Waste Diversion Features:

[1] Section 1.3.2 of the WLCSP state that all buildings of at least 500,000 square feet shall be designed to meet or exceed the LEED Certified Building Standards

- Require that all development within the project provide enclosures or compactors for trash and recyclable materials per Specific Plan (Section 5.1.6).

Relevant Policies and Regulations

The following plans, policies and regulations support the state's long-term energy policies and goals, including GHG reduction targets as expressed by SB 32 and Governor's Executive Order S-3-05 (40 percent below 1990 levels and 80 percent below 1990 levels, respectively).[2] These policy and regulatory developments are driving investments in technologies, infrastructure, and new markets that represent California's transition to a more energy-efficient, low carbon economy. They are an important consideration in assessing the costs and benefits of new transportation energy technologies as they apply to the Project and to the state's larger energy goals.

2017 Scoping Plan Update

On December 14, 2017, the California Air Resources Board (CARB) approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels.[3] The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target Statewide 2030 emissions limit is 260 MMTCO2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO2e beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by Executive Order B-30-15.

The Scoping Plan strategy for meeting the 2030 GHG target includes the full range of measures developed or required by legislation with 2030 as their target date and include: extending the low carbon fuel standard (LCFS) to an 18 percent reduction in carbon intensity beyond 2020; the requirements of SB 350 to increase renewables to 50 percent and to double energy efficiency savings of existing buildings; the Mobile Source Strategy targets for more zero emission vehicles and much cleaner trucks and transit; the Sustainable Freight Action Plan to improve freight efficiency and transition to zero emission freight handling technologies; and the requirements under SB 1383 to reduce anthropogenic black carbon 50 percent and hydrofluorocarbon and methane emissions by 40 percent below 2013 levels by 2030, and the Cap-and-Trade Program that extends through 2030.

California's climate stabilization strategy relies on contributions from all sectors of the economy, which includes continued investment in renewable energy such as solar photovoltaics (Solar PV), wind, and other types of distributed generation. In addition to being an integral factor in meeting GHG reduction goals, shifting to clean, local, and efficient use of energy also reinvests energy expenditures on local economies and reduces risks associated with exposure to volatile global and national oil and gas commodity prices (CARB, 2017).

[2] The majority of California's energy use generates GHG emissions. Increasing renewable energy and energy efficiency are key components to California's overall strategy to reduce energy sector GHG emissions, as described in the 2017 Scoping Plan Update

[3] CARB, *California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 greenhouse gas target*, November, 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf; accessed December 18, 2017.

California Cap and Trade Program

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), the cap-and-trade program is a core strategy in the Scoping Plan for the state to meet its reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under AB 32, CARB has designed and adopted a California Cap-and-Trade Program to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020.[4] Under the Cap-and-Trade program, an overall limit is established for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 metric tons CO_2e per year) and declines over time, and facilities subject to the cap can trade permits to emit GHGs. The statewide cap for GHG emissions from the capped sectors commenced in 2013 and declines over time, achieving GHG emission reductions throughout the Program's duration.[5] On July 17, 2017 the California legislature passed Assembly Bill 398, extending the Cap-and-Trade program through December 31, 2030.

The Cap-and-Trade Regulation provides a firm cap, ensuring that the 2020 and 2030 statewide emission limits will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not direct GHG emissions reductions to occur in any discrete location or by any particular source. Rather, GHG emissions reductions are assured on a State-wide basis.

Renewable Energy

A core component of the state's climate stabilization strategy, as described in the 2017 Scoping Plan Update, is widespread electrification of buildings, appliances, and transportation in conjunction with decarbonization of the electricity sector (CARB, 2017). The California Renewable Portfolio Standard (RPS), as updated by SB 350, requires utilities and electric service providers to procure at least 50 percent of total electricity from eligible renewable energy resources by 2030.

Statewide, solar and wind installations have grown exponentially in recent years. With renewables increasingly serving the state's electricity demand there is a growing need for storage solutions that increase grid reliability in the face of variable demand combined with the inherent seasonal and diurnal fluctuations in solar and wind generation.

Additional challenges facing expansion of renewable energy include overcoming electric equipment performance, cost-effectiveness, and consumer acceptance.

Transportation Energy

Pavley Regulation and the California Mobile Source Strategy

Assembly Bill 1493 (2002) requires CARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is non-commercial personal transportation manufactured in and after 2009. In setting these standards, CARB must consider cost effectiveness, technological feasibility, economic impacts, and provide maximum flexibility to manufacturers. The federal Clean Air Act ordinarily preempts state regulation of motor vehicle emission standards; however, California is allowed to set its own standards with a

[4] 17 CCR §§ 95800 to 96023.

[5] See generally 17 CCR §§ 95811, 95812.

federal waiver from the USEPA, granted in 2009. Known as the Pavley Clean Car Standards, AB 1493 regulated GHG emissions from new passenger vehicles (light duty automobiles and medium duty vehicles) from 2009 through 2016.

In January 2012, CARB approved the Advanced Clean Cars (ACC) program, a new emissions-control program for model years 2015 through 2025. The program includes components to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. The zero emissions vehicle (ZEV) program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEV) in the 2018 to 2025 model years (CARB, 2017).

In May 2016, CARB released the updated Mobile Source Strategy that demonstrates how the State can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption over the next fifteen years, through a transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of vehicle miles traveled. The Mobile Source Strategy calls for 1.5 million ZEVs (including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles) by 2025 and 4.2 million ZEVs by 2030. It also calls for more stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero-emission trucks primarily for class 3 – 7 "last mile" delivery trucks in California. Statewide, the Mobile Source Strategy would result in a 45 percent reduction in GHG emissions, and a 50 percent reduction in the consumption of petroleum-based fuels (CARB, 2016).

Transportation Electrification

Complementing the Mobile Source Strategy and the state's push toward zero carbon electricity, SB 350 orders the CPUC to direct the six investor-owned electric utilities in the state to file Applications for programs that "accelerate widespread transportation electrification." These programs are required to reduce dependence on petroleum, increase the adoption of zero-emission vehicles, help meet air quality standards, and reduce GHG emissions.

On January 11, 2018, the CPUC approved the first transportation electrification applications under SB 350 from the three large investor-owned utilities. The decision approves 15 projects with combined budgets of $42 million. In SCE territory, $16 million was approved for projects that help expand residential and transit bus EV charging infrastructure, including in or adjacent to disadvantaged communities, as well as crane and heavy duty vehicle electrification at the Port of Long Beach. In PG&E and San Diego Gas and Electric territories, projects are similar but also include electrification of delivery vehicles and commercial shuttle fleets, and demonstration projects for electrification of school buses and medium- or heavy-duty vehicles fleets (CPUC, 2018).

In January 2018, Governor Brown signed Executive Order B-48-18, setting targets of 200 hydrogen fueling stations and 250,000 electric vehicle chargers to support 1.5 million ZEVs on California roads by 2025, on the path to 5 million ZEVs by 2030. The initiative is designed to focus multi-stakeholder efforts on deploying charging and fueling infrastructure as well as making ZEVs increasingly affordable to own and operate.

Title 24, Part 11, of the California Code of Regulations (California Building Energy Standards) includes construction requirements for non-residential projects that are designed to facilitate installation of future electric vehicle supply equipment (EVSE) to support electric vehicle (EV) charging. Under the current regulation (2016),

section 5.106.5.3 requires construction plans and specifications for large project (those with more than 200 total parking spaces) to include raceways for future EVSE at a minimum of 6 percent of the total parking spaces.

Low Carbon Fuel Standard

The overall goal with the low carbon fuel standard is to lower the carbon intensity of California transportation fuel. The standard initially required a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. With adoption of the 2017 Scoping Plan, the standard has been changed to a reduction of at least 18 percent. Recent proposed amendments by CARB indicate that the program will be extended to 2030 with a greenhouse gas reduction target of 20 percent. A significant expansion of the renewable fuel market has been included in the CARB staff proposal.

CARB Low NOx Regulation

Shifting away from fossil fuels is especially important for heavy duty vehicles because while they comprise just 7 percent of all vehicles in California, they account for 33 percent of NOx emissions from all sources (Chandler, Espino, and O'Dea 2017). CARB has identified that reductions of up to 90 percent are needed for heavy-duty trucks to meet NOx reduction targets. In 2013, California established an optional low-NOx standard to pave the way for a future mandatory standard. A more stringent low-NOx regulation is expected in the 2021/2023 timeframe. When implemented, this regulation will continue to drive the deployment of zero or near-zero emissions truck solutions. This development has been taken into consideration in estimating the number of zero emission trucks projected in this study.

CARB Advanced Clean Local Truck Rule

The goal with the Advanced Clean Local Truck Rule is to accelerate the early market adoption of zero emission trucks that are usually centrally fueled, have duty cycles with low average speed and stop-and-go operation. The rule focuses on urban, mostly vocational trucks, but includes class 7-8 urban goods movement trucks as well. The proposed regulatory schedule begins with the 2023 vehicle model year with early action credits given for pre-2023 vehicle models. The regulation is scheduled for CARB board consideration in November 2018.

The Clean Port Plan 2.0 for Ports of Long Beach and Los Angeles

The ports of Long Beach and Los Angeles have set goals to drastically reduce air pollution over the next decades and move towards zero emissions solutions. It is anticipated that new fee structures will be implemented in 2021 that favors low-NOx engine and zero emission solutions.

SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

In April, 2016, the Southern California Association of Governments (SCAG) adopted the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which provides a vision for transportation throughout the region for the next 25 years. It considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The 2016 RTP/SCS describes how the region can attain the GHG emission-reduction targets set by CARB by achieving an 8 percent reduction by 2020, 18 percent reduction by 2035, and 21 percent reduction by 2040 compared to the 2005 level on a per capita basis.

The 2016 RTP/SCS includes $70.7 billion in goods movement strategies, and a Goods Movement Appendix that addresses the region's challenges in moving freight while reducing harmful emissions generated by trucks and other goods movement sources.

SCAG Comprehensive Regional Goods Movement Plan and Implementation Plan

This report from SCAG, issued in 2012, presents a long-range comprehensive plan for the goods movement system in Southern California. The Plan is designed to ensure that the region continues to play a vital role in the global supply chain while meeting regional economic goals, addressing critical mobility challenges, preserving the environment, and contributing to community livability and quality of life goals. The Plan is the final product of the SCAG Comprehensive Regional Goods Movement Plan and Implementation Strategy, a four-year effort to collect data, conduct analyses, and engage with regional, statewide and national stakeholders covering various aspects of the region's goods movement system

California Sustainable Freight Action Plan (2016)

California Sustainable Freight Action Plan includes strategies to improve freight efficiency and transition to zero emission freight handling technologies. It includes goals to achieve 25 percent improvement of freight system efficiency by 2030, and to deploy over 100,000 freight vehicles and equipment capable of zero emission operation, and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.

2.Project Transportation Energy Demand

Trips and Vehicle Counts

Table 1 provides estimates of daily vehicle forecasts for the project derived from the revised traffic model output and based on the assumption that two vehicle trips represents one vehicle on site. Table 1 shows the project vehicle forecasts estimates for each vehicle category modeled in the traffic analysis (WSP, 2018) and indicates how the categories correlate with the vehicle types used by the Emission FACtors (EMFAC) model, which is the standard tool used in CEQA analysis to calculate emission rates from motor vehicles operating on highways, freeways and local roads in California.

Table 1: Project Vehicle Forecasts (daily):

Project Category	EMFAC Category	2025	2035
Passenger Vehicles	LDA, LDT1, LDT2, MCY	11,766	20,299
Light Trucks (2axle)	MDT	875	1,532
Medium Trucks (3 axle)	LHDT1, LHDT2	1,113	1,964
Heavy Trucks (4+ axle)	MHDT, HHDT	3,261	5,605
TOTAL		17,015	29,400

Note: Assumes 2 trips = 1 vehicle

Vehicle Fuel Use Estimates

Table 2 shows the breakdown of vehicle fuels forecasted by EMFAC 2017 for the vehicle fleet in the South Coast AQMD for the years 2025 and 2035. By 2025, 2.5 percent of passenger vehicles and 1.6 percent of light trucks are projected to be EVs. By 2035, 4.7 percent of passenger vehicles and 3.9 percent of light trucks are expected to be EVs. EMFAC projects zero electric trucks in these future years.

Table 2: Fleet Mix by Fuel Type

Air Quality Vehicle Type	% Gas	% Diesel	% Electric	% Natural Gas
Interim Year 2025				
Passenger cars	96.6%	0.9%	2.5%	0.0%
Light trucks	95.9%	2.5%	1.6%	0.0%
Medium Trucks	51.5%	48.5%	0.0%	0.0%
Heavy Trucks	9.6%	88.2%	0.0%	2.2%
Horizon Year 2035				
Passenger cars	94.3%	1.0%	4.7%	0.0%
Light trucks	93.0%	3.1%	3.9%	0.0%
Medium Trucks	44.3%	55.7%	0.0%	0.0%
Heavy Trucks	8.9%	88.6%	0.0%	2.5%
Source: EMFAC2017, South Coast Air Basin, Calendar Year 2025 & 2035				

Table 3 provides annual fuel use estimates for the vehicles associated with project operation in 2025 and 2035, based on the traffic modeling results and the EMFAC 2017 fuel mix data.

Table 3: Projections of Annual Fuel and Electricity Use by WLC Fleet

Vehicle Category	Gasoline (gal)	Diesel (gal)	Electricity (MWh)	Natural Gas (MMBtu)
2025				
Passenger Vehicles	14,494	84	4,206	0
Light Trucks	1,131	22	173	0
Medium Trucks	2,487	1,249	0	0
Heavy Trucks	3,345	31,109	0	612
2035				
Passenger Vehicles	21,460	154	27,351	0
Light Trucks	1,520	41	793	0
Medium Trucks	3,045	2,020	0	0
Heavy Trucks	4,303	43,131	0	1,094

Note: Based on 2018 WLC traffic modeling results and the EMFAC 2017 fuel mix data

Electric Vehicle (EV) Forecasts and Electricity Loads

Theoretically, each vehicle that visits the WLC site represents an EV charging opportunity. However, the fueling station and convenience market are quick stops and not considered good candidates for locating EV charging stations. Table 4 provides a summary of vehicles trips by EMFAC vehicle category, with trips to the fueling station and convenience market subtracted from the totals. Table 4 provides a summary of the project's vehicle forecasts in 2025 and 2035 that represent EV charging opportunities.

Table 4: Project Trip Generation (average daily trips):

Phase 1 - 2025	Average daily trips	gas station and convenience mkt trips	Net trips	Max vehicles with EV charging potential
Passenger vehicles	23,532	669	22,863	11,431
Light Trucks (2 axle)	1,751	296	1,455	727
Medium Trucks (3 axle)	2,226	0	2,226	1,113
Heavy Trucks	6,143	379	6,143	3,072
Total	**34,031**	**1,344**	**32,687**	**16,343**
Full Build-Out - 2035				
Pass vehicles	40,598	669	39,929	19,964
Light Trucks (2 axle)	3,064	296	2,768	1,384
Medium Trucks (3 axle)	3,928	0	3,928	1,964
Heavy Trucks	10,831	379	10,831	5,415
Total	**58,800**	**1,344**	**57,456**	**28,728**

Note: assumes 2 trips = 1 vehicle

Using the daily vehicle forecasts provided in Table 4, anticipated EV counts and the corresponding average and peak electricity loads were estimated for three different EV penetration scenarios as described below.

Vehicle Scenario A: Low EV Penetration

Scenario A reflects the requirements of current state building code (Title 24, part 11), stipulating that 6 percent of parking spaces be constructed to accommodate the future installation of electric vehicle supply equipment (EVSE) for future electric vehicle charging. Scenario A assumes that EV charging stations will be installed at 6 percent of the parking spaces by the completion of Phase 1. This Scenario assumes no increase in the stringency of the requirement, as any change in the regulatory minimums would be purely speculative at this time. Scenario A also assumes that the code-compliant charging stations would be used only for charging passenger vehicles and light duty truck EVs, and there would be no charging of medium-duty or heavy-duty truck EVs. Table 5 indicates the number of EV charging stations needed for 2025 and 2035 based on these assumptions.

Table 5: EV Charging Station Requirements at WLC

Stage of Development	WLC WAREHOUSE BUILDINGS			WLC PARKING REQUREMENTS		
	Total Bldg SF	Avg Bldg SF (approximate)	# Bldgs	Avg per Bldg	WLC Total	EV Charging Equipped (6%)
Phase 1 - 2025	22,946,000	1,500,000	15	584	8,781	527
Full build out - 2035	40,600,000	1,500,000	27	575	15,536	932

For determining the breakdown of vehicle types and fuels powering the fleet, Scenario A relies on EMFAC 2017[6]. As shown in Table 6, EMFAC 2017 forecasts approximately 619,000 passenger EVs (2.5 percent of total) and 59,000 light truck EVs (1.4 percent of total) statewide by 2025, and approximately 1.4 million passenger EVs (4.7 percent of total) and 172,000 light truck EVs (3.7 percent of total) statewide by 2035.[7] For the South Coast Air Basin, EMFAC 2017 forecasts the same percentages of passenger EVs and 1.6 percent of light truck EV populations by 2025, and slightly higher percentages by 2035. Based on the percentages for the South Coast Air Basin, the number of passenger EVs estimated to access the Project area on any day under Scenario A were determined to be 300 for Phase 1 (2025) and 991 for full build-out in 2035.

Table 6: EMFAC 2017 EV Forecasts for State of California and South Coast Air Basin [a]

		Passenger Vehicles			Light Trucks		
		Total	EVs	% EVs	Total	EVs	% EVs
South Coast Air Basin	2020	9,125,366	103,722	1.1%	1,539,990	3,852	0.3%
	2025	10,034,980	252,889	2.5%	1,627,185	26,375	1.6%
	2030	10,907,401	417,413	3.8%	1,733,368	51,603	3.0%
	2035	11,642,018	546,208	4.7%	1,849,556	72,433	3.9%
Statewide	2020	22,409,020	262,338	1.2%	4,131,850	8,393	0.2%
	2025	24,876,417	619,462	2.5%	4,207,663	59,187	1.4%
	2030	27,344,052	1,038,403	3.8%	4,367,848	119,836	2.7%
	2035	29,511,582	1,380,703	4.7%	4,600,339	172,291	3.7%

Notes:

a: reflects EMFAC 2017 assumptions based on Governor's Order calling for 1.5 million ZEVs statewide by 2025

6 The Emission FACtors (EMFAC) model is the standard method used in CEQA analysis to calculate emission rates from motor vehicles operating on highways, freeways and local roads in California.

7 As interpreted by the project traffic modeling, passenger vehicles include all LDA, LDT1, and LDT2 category vehicles in EMFAC

Scenario A energy demand calculations assume that passenger EVs would have an average battery size of 100 kWh in the year 2025, equating to an average charge capacity of 80 kWh (80 percent). Passenger cars in 2035 would have an average battery size of 200 kWh, equating to an average charge capacity of 160 kWh (80 percent).

Scenario A assumes that half of the passenger EV population on site each day would charge their batteries to full capacity. If Level 2 AC chargers with a minimum charging rate of 19.2 kW (highest rate currently available) were provided, it would take approximately 4 hours to fully charge a vehicle with a 100 kWh battery. If the site was served by DC power blocks that spread the power delivery across multiple vehicles simultaneously in response to site energy management requirements, the charging time could be much faster. DC power blocks provide power at up to 500 kW, but it is reasonable to assume an average charging rate would be 100 kW, resulting in a charging time of approximately 48 minutes for a vehicle with a 100 kWh battery.

Peak electricity loads for servicing the EVs were provided by WSP in their World Logistics Center *Sustainable Energy Plan* (WSP, 2018).[8]

The EV numbers and electricity loads for Scenario A, using the methods and assumptions outlined above, are presented in Table 7.

Table 7: Scenario A Charging Loads (Low EV Penetration)

Vehicle Type	2025			2035		
	Population	Peak Rate (MW)	Avg Daily (MWh)	Population	Peak Rate (MW)	Avg Daily (MWh)
Passenger Vehicles	288	0.7	11.5	937	5.7	74.9
Light Trucks (2 axle)	12	0.03	0.5	54	0.2	2.2
Medium Trucks (3 axle)	0	0	0	0	0	0
Heavy Trucks (4+ axle)	0	0	0	0	0	0
Total	**300**	**0.7**	**12.0**	**991**	**5.9**	**77.1**

Vehicle Scenario B: Medium EV Penetration

This scenario reflects the same assumption regarding electric vehicle charging infrastructure as used in Scenario A (EV charging stations will be installed at 6 percent of parking spaces by the completion of Phase 1) but with higher electric vehicle populations consistent with the goals of California's 2017 Scoping Plan Update and 2016 Mobile Source Strategy, which are both designed to enable statewide attainment of the SB 32 GHG Target of 40 percent below 1990 levels by 2030. As with Scenario A, Scenario B includes passenger and light truck EVs, but

[8] As explained in the WSP report, peak EV charging rate was estimated by allocating the annual electricity consumption of EVs according to the building operating schedules. The resulting peak electric load imposed by EV charging is about 25 percent of the aggregate nameplate capacity of all charging stations. This result is in line with industry expectations that charging blocks managed with automated 'smart' controls will reduce the coincident peak demand to 20-25 percent of the aggregate capacity of the individual charging stations.

no charging of medium-duty or heavy-duty truck EVs. The higher numbers of passenger and light truck EVs result in a higher vehicle charging load for the project.

Table 8 summarizes EV population estimates that are aligned with Governor Brown's Executive Order calling for 1.5 million ZEVs by 2025, and the Mobile Source Strategy calling for 4.2 million ZEVs by 2030, which works out to approximately 5.2 percent of combined vehicles (passenger + light trucks) in 2025 and 13.2 percent in 2030. The EV population estimates (21 percent of passenger vehicles and 22.5 percent of light trucks) for 2035 are based on the conservative assumption that the EV population increase from 2025 to 2030 due to the Mobile Source Strategy is repeated over the five year period from 2030 to 2035. Based on that rate, as shown in Table 8, there would be approximately 7.2 million ZEVs in operation statewide by 2035. Assuming the EV percentages would be the same for the proposed Project located in the South Coast Air Basin, the Project would be visited by 627 EVs per day by 2025 and 4,509 EVs by 2035.

Table 8: EV Forecasts Based on Mobile Source Strategy [a]

		Passenger Vehicles			Light Trucks		
		Total	EVs	% EVs	Total	EVs	% EVs
South Coast Air Basin	2020	9,125,366	103,722	1.1%	1,539,990	3,852	0.3%
	2025	10,034,980	517,550	5.2%	1,627,185	83,921	5.2%
	2030	10,907,401	1,444,602	13.2%	1,733,368	229,571	13.2%
	2035[b]	11,642,018	2,447,659	21.0%	1,849,556	416,980	22.5%
Statewide	2020	22,409,020	262,338	1.2%	4,131,850	8,393	0.2%
	2025	24,876,417	1,282,991	5.2%	4,207,663	217,009	5.2%
	2030	27,344,052	3,621,512	13.2%	4,367,848	578,488	13.2%
	2035[b]	29,511,582	6,204,620	21.0%	4,600,339	1,037,141	22.5%

Notes:

a: reflects Mobile Source Strategy calling for 4.2 million ZEVs statewide by 2030

b: assumes the 2025-2030 EV population increase trend (over EMFAC 2017 forecast) continues through 2035

Charging loads for the light truck category were determined using the daily mileage estimates and average kWh/mile consumption for each vehicle category, using data from the U.S. Department of Energy's Alternative Fuels Data Center.[9]

Like Scenario A, Scenario B assumes that EVs in 2025 would have an average battery size of 100 kWh, and by 2035 they would have an average battery size of 200 kWh. Due to the higher EV populations the demand for fast charging will be higher, and it is reasonably assumed that DC power blocks, which manage power delivery across multiple vehicles simultaneously in response to site energy requirements, would be used at the site to handle the increased loads. Like Scenario A, it is assumed that the average charging rate for DC power block chargers would be 100 kW. At that rate a 200 kWh battery (160 kWh capacity) would take approximately 96 minutes to charge.

Scenario B assumes 100 percent of the charging stations at the site would be served by DC charging blocks that can charge up to 500 kW per vehicle and can spread the power delivery across multiple vehicles simultaneously in response to site energy management requirements. The average charging rate for these stations is assumed to be 100 kW.

Peak electricity loads for servicing the EVs were provided by WSP in their World Logistics Center *Sustainable Energy Plan* (WSP, 2018).

The EV numbers and electricity loads for Scenario B, using the methods and assumptions outlined above, are presented in Table 9.

Table 9: Scenario B Charging Loads (Medium EV Penetration)

Vehicle Type	2025			2035		
	Population	Peak Rate (MW)	Avg Daily (MWh)	Population	Peak Rate (MW)	Avg Daily (MWh)
Passenger Vehicles	590	1.4	23.6	4,197	25.6	336
Light Trucks (2 axle)	38	0.2	1.5	312	0.8	12.8
Medium Trucks (3 axle)	0	0	0	0	0	0
Heavy Trucks (4+ axle)	0	0	0	0	0	0
Total	**627**	**1.6**	**25.1**	**4,509**	**26.4**	**349**

Vehicle Scenario C: High EV Penetration

Scenario C is the same as Scenario B with respect to passenger and light truck EVs, but includes estimates for medium duty and heavy duty EV trucks based on CALSTART's zero-emission transformation model that takes into account how nascent zero emission solutions, namely technologies from the transit bus segment, evolve and transition into other medium- and heavy-duty categories. As with the light duty truck estimates, the projections take into account funding programs, sales trends, technology development, and upcoming regulations. In addition,

[9] https://www.afdc.energy.gov/

the estimates consider regulatory and commercialization studies completed by CALSTART, including potential regulations related to zero emission drayage trucks and access by zero emission trucks to city centers.

CALSTART's zero emission transformation model indicates that 10 percent of medium-duty and 20 percent of heavy-duty trucks servicing the South Coast Air Basin could feasibly be EVs by 2025; by 2035, the forecasts indicate conservatively that 20 percent of medium-duty and 30 percent of heavy-duty trucks could be EVs. Charging loads for the light truck category were determined using the daily mileage estimates and average kWh/mile consumption for each vehicle category, using data from the U.S. Department of Energy's Alternative Fuels Data Center.[10]

The EV numbers and electricity loads for Scenario C, using the EV truck population forecasts for the South Coast Air Basin and the methods and assumptions outlined above, are presented in Table 9.

Table 9: Scenario C Charging Loads (High EV Penetration)

Vehicle Type	2025			2035		
	Population	Peak Rate (MW)	Avg Daily (MWh)	Population	Peak Rate (MW)	Avg Daily (MWh)
Passenger Vehicles	590	1.4	24	4,197	26	336
Light Trucks (2 axle)	38	0.2	1.5	312	0.8	12.5
Medium Trucks (3 axle)	111	0.5	6.0	393	1.6	21
Heavy Trucks (4+ axle)	614	18	229	1,625	46	607
Total	**1,353**	**19.6**	**261**	**6,527**	**74**	**976**

3. Transportation Energy Best Practices and Emerging Technologies

Zero Emission Vehicles

Zero emission vehicle (ZEV) technology is developing rapidly for both light-duty and heavy-duty vehicles. ZEVs can be powered by grid electricity stored in a battery, by electricity produced onboard the vehicle through a fuel cell, or through electricity provided by sources outside the vehicle such as overhead catenary wires that are currently used for light rail and some transit buses. ZEVs achieve zero tailpipe emissions by utilizing electric drive to power the vehicle instead of fuel combustion, and achieve higher system efficiency compared to fossil fuel powered vehicles. The GHG emissions associated with a ZEV are generally lower than GHG emissions associated with an equivalent vehicle powered by fossil fuel, with the difference dependent on the carbon footprint of the electricity or fuel cell energy used to power the ZEV.

[10] https://www.afdc.energy.gov/

ZEVs discussed here include plug-in battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV) and hybrid electric vehicles (HEV), fuel cell electric vehicles (FCEV), and Range Extended Electric Vehicles (REEV) with a fuel cell or fossil-fuel powered engine.

Overall, electric engines result in lower PM and NO_X emissions when compared to conventional diesel engines, and can greatly reduce GHG emissions if the electricity is supplied by renewable sources. However, electric equipment can cost 20 to 40 percent more than its internal combustion counterpart. Electric equipment has a downtime for recharging. The batteries typically provide enough power for approximately 6 hours of constant use. After that, 8 to 16 hours are required to recharge batteries, followed by 8 hours for batteries to cool before using. Faster charging batteries can restore batteries from 20 to 100 percent in 60 to 90 minutes, though more expensive than a standard battery. In addition, battery charging stations and battery transporters are required. Although PHEVs are generally more expensive than similar conventional and hybrid vehicles, some cost can be recovered through fuel savings, a federal tax credit, or state incentives. Plug-in EVs and PHEVs use electricity from the grid to run some or all of the time reducing operating costs and petroleum consumption, relative to conventional vehicles and PHEVs. PHEVs typically produce lower levels of emissions, depending on the electricity source. PHEVs generally have larger battery packs than HEVs, which makes it possible to drive moderate distances using just electricity (approximately 10 to 40-plus miles in current models). The PHEV fuel consumption depends on the distance driven between battery charges. PHEV batteries can be charged by an outside electric power source, by the internal combustion engine, or through regenerative braking. HEVs combine the benefits of high fuel economy and low emissions with the power and range of conventional vehicles, without requiring a plug-in to charge the batteries.

As highlighted by the CEC in an annual Progress Report (CEC, 2017d), ZEV technology and supporting infrastructure is advancing rapidly in California:

- Nearly 300,000 ZEVs have been sold in California (predominantly light duty vehicles).
- Battery technology has improved, and the costs of batteries and other components have fallen dramatically. Based on manufacturer announcements, available models of PHEVs and BEVs are expected to increase nearly three-fold over the next five model years from the 25 models offered today.
- Due to substantial investments in the past several years, ZEV electric infrastructure in California has grown substantially. This trend is expected to accelerate as new infrastructure developments emerge. More than 10,000 Level 2[11] and 1,500 direct current fast charger (DCFC) connectors have been deployed across California.
- California is developing the first major fuel cell electric vehicle (FCEV) market and hydrogen fueling network in the United States. Three FCEV models are for sale in California, and 28 retail hydrogen refueling stations are open in California with an additional 32 stations proposed or already in development. Toyota and Honda have also announced partnerships with private companies for financial support of additional stations in California and the Northeast.

[11] Level 2 chargers use 208/240 volts, up to 19.2 kW (80 amps), whereas Level 1 chargers use 110/120 volts, 1.4 to 1.9 kW (12 to 16 amps).

CEC's 2017 Progress Report outlines the state's Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP), funded by vehicle and vessel registration, vehicle identification plates, and smog-abatement fees (per Assembly Bill 118), is providing up to $100 million per year to fund ZEV technology development and readiness planning, EV charging infrastructure, hydrogen refueling stations, clean vehicle rebate programs, and standards development. More than $129 million has been provided by the ARFVTP to date for California companies to demonstrate advanced ZEV technologies for medium- and heavy-duty trucks, buses, and freight movement.

Another more recent report by Next 10 concludes that California will meet or exceed its 1.5 million by 2025 ZEV goal, but that the state's charging infrastructure is not keeping pace with the growth of its electric vehicle fleet. Through October 2017, more than 337,000 ZEVs had been sold in California, and ZEV sales increased 29.1 percent in California over the previous year. Meanwhile, California has 16,549 public and nonresidential private-sector charging outlets - most in the nation by far but only 0.05 public charging outlets per ZEV. Studies show that California will need 125,000 to 220,000 charging ports from private and public sources by 2020 in order to provide adequate infrastructure (Next 10, 2018).

Electric Vehicle Charging Infrastructure

Charging Stations

Many plug-in electric vehicle owners may do the majority of their charging at home (or at fleet facilities, in the case of fleets). Some employers offer access to charging at the workplace. In many states, plug-in electric vehicle drivers also have access to public charging stations at libraries, shopping centers, hospitals, and businesses. The charging infrastructure is rapidly expanding, providing drivers with the convenience, range, and confidence to meet more of their transportation needs with plug-in vehicles. PHEVs have added flexibility, because they can also refuel with gasoline or diesel (or possibly other fuels in the future) when necessary (U.S. Department of Energy, 2016).

Charging equipment for plug-in electric vehicles (PHEVs or EVs) is classified by the rate at which the batteries are charged. Note than, in addition to the charging station itself, charging times vary based on how depleted the battery is, how much energy it holds, the type of battery, and the type of EV. The charging time can range from 15 minutes to 20 hours or more, depending on these factors.

- Level 1 chargers: Operating on 120-volts, Level 1 chargers offer the slowest type of charging. For plug-in hybrids with smaller battery packs (i.e., a typical passenger PHEV), it may be enough to recharge the vehicle in a few hours to overnight.

- Level 2 chargers: Most dedicated home and public charging stations use Level 2 chargers, which operate at 240 Volts and are at least twice as fast as Level 1 charging due to the higher amperage of the circuit. BEVs like the Nissan Leaf typically require a Level 2 charger to provide overnight charging.

- DC Fast Chargers: A direct current fast charger (DCFC) uses direct current (DC) rather than household alternating current (AC) and is very high-powered. DCFCs are generally practical only at public sites, such as along highways, given the higher cost of the electric utility having to install dedicated high-power lines. Unlike Level 1 and Level 2 chargers, which use a standard "J-1772" type connector for plugging in the vehicle, there are three different kinds of DC quick charging connectors:

    - CHAdeMO: This is currently the most popular standard, used by the Nissan Leaf, Mitsubishi i-MiEV, and Kia Soul EV.

    - CCS (Combined Charging Standard): All U.S. makers except Tesla and all German makers use this standard, including cars from BMW, Chevrolet, Ford, Mercedes-Benz, Volkswagen, and Volvo that are fitted with quick-charging ports.

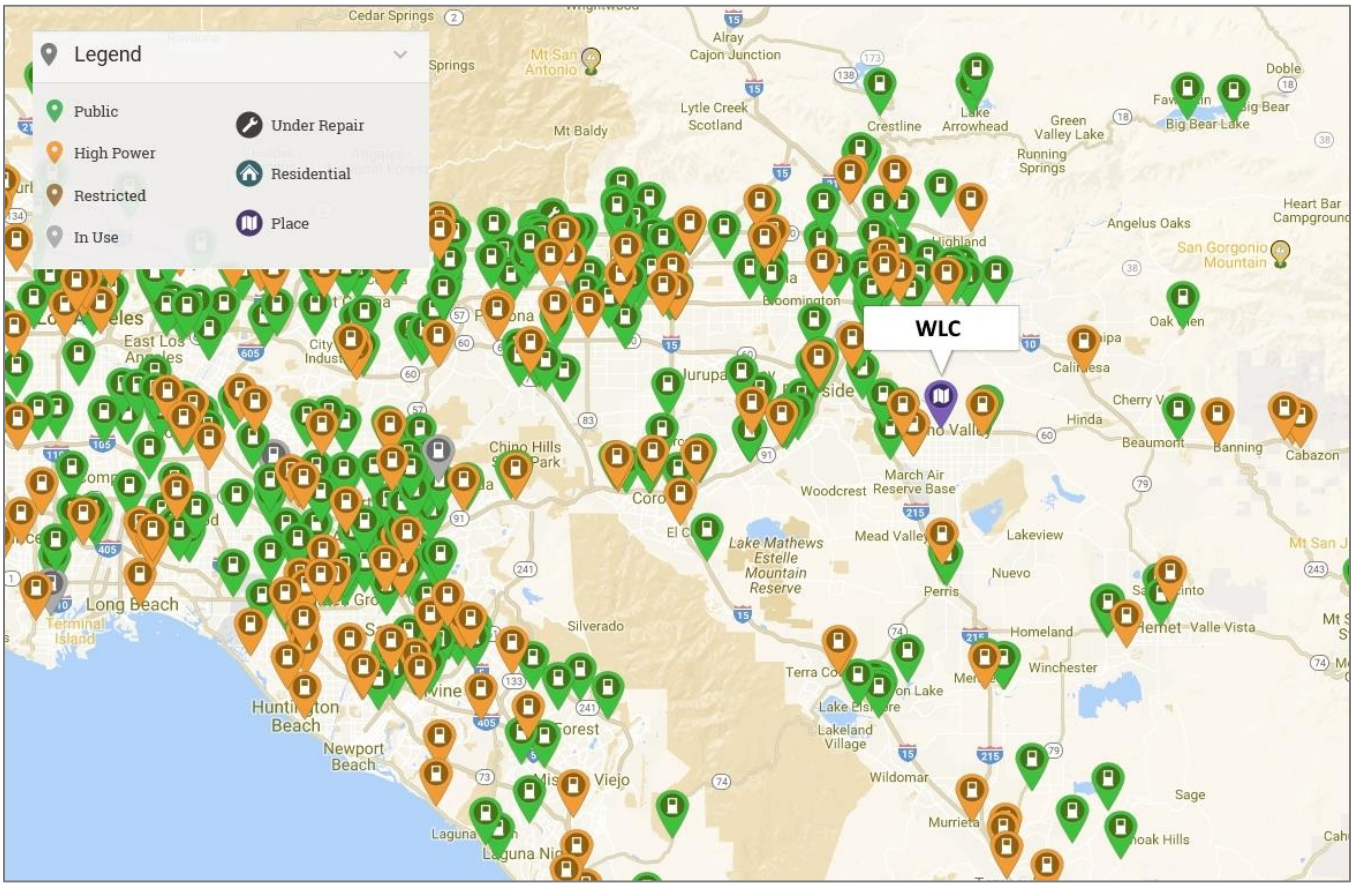
    - Tesla Supercharger: As usual, Tesla has gone its own way and created a dedicated network of free, high-powered fast-charging stations that can only be used by Tesla owners.

- Modular DC Power Blocks: With these systems, the maximum charging power can be dedicated to just one vehicle or spread between several vehicles depending on the demand. They address the ever-growing demands of increased current and power densities in networked applications while providing maximum flexibility for system configuration. An example of a scalable modular architecture that can grow as the charging demand grows is the ChargePoint Express Plus station with an accompanying Power Cube, and a solution by ABB that includes Power Converter modules and Charge-Boxes.

The cost of charging stations is variable depending upon the type of charging station and location (curbside or garage). Component cost of charging stations vary based on hardware, electrical materials and labor, other materials and labor, transformer, mobilization, and permitting. (Greenbiz.com 2016).

Public charging stations are not as ubiquitous as gas stations, but charging equipment manufacturers, automakers, utilities, Clean Cities coalitions, municipalities, and government agencies are establishing a rapidly expanding network of charging infrastructure. Almost all public sites offer Level 2 charging, with a few providing DCFCs, increasingly with both CHAdeMO and CCS cables. Plug-in electric vehicles can be recharged at stations available within close distance of the WLC site, as shown in **Figure 1**, *Electric Vehicle Charging Stations near World Logistics Center Site*, below.

Figure 1 Electric Vehicle Charging Stations near WLC



Source: www.plugshare.com

Applicability to Proposed Project:

The adoption of ZEV passenger vehicles by WLC employees is beyond the direct control of the Proposed Project. However, providing on-site EV charging stations for employees to use as they park their vehicles would help incentivize the use of such vehicles, helping to reduce the GHG emissions associated with commuting. By 2025, it is expected that modular DC power blocks will be the preferred EV charging solution for the WLC site, given the projected EV population and the anticipated need for power load management.

Road-Connected Power

This technology, well established in the transit industry (e.g., electric trolley-bus), is used widely in mining with extremely heavy equipment and is now being demonstrated for heavy haul trucks in Europe and the United States. Power is transferred to the vehicle from an overhead catenary wire to an apparatus mounted on the roof of the vehicle known as a pantograph. Roadway power infrastructure is typically complicated and expensive, and may be appropriate only in certain areas or applications.

Applicability to Proposed Project:

For passenger vehicles and light duty trucks, road-connected power is not a feasible technology for passenger vehicles at this time.

For medium and heavy-duty trucks, despite there being demonstration projects at ports and other sites with heavy truck traffic, installing road connected power at a site like the WLC would only be effective if a critical mass of vehicles visiting the site were fitted with special equipment to connect with the overhead catenary line used to transmit electrical energy. For effective charging, vehicles would have to do most or all of their driving on site. This technology does not represent a feasible approach to supporting the Project's use of zero emission trucks.

Plug-in All-Electric Vehicles (BEV)

All-electric vehicles (EVs), sometimes referred to as battery electric vehicles (BEVs), use a battery to store the electrical energy from a plug-in source that powers the electric motor (there is no internal combustion motor). EV batteries are charged by plugging the vehicle into an electric power source. Although most U.S. electricity production contributes to air pollution, the USEPA categorizes all-electric vehicles as zero-emission vehicles because they produce no direct exhaust or emissions. Because EVs use no fuel, widespread use of these vehicles could dramatically reduce petroleum consumption.

The efficiency and driving range of BEVs varies substantially based on vehicle size, driving conditions and driving habits. Extreme outside temperatures tend to reduce range, because more energy must be used to heat or cool the cabin. High driving speeds reduce range because of the energy required to overcome increased drag. Compared with gradual acceleration, rapid acceleration reduces range. Hauling heavy loads or driving up significant inclines also reduces range.

Passenger BEVs

As described above, there is strong momentum in California in growing the fleet of passenger EVs to meet or exceed the state's ZEV targets of 1.5 million by 2025 and 4.2 million by 2030. A high percentage of these are expected to be BEVs, but charging infrastructure is not keeping pace, and more public and nonresidential private-sector charging outlets are needed (Next 10, 2018).

Currently available passenger BEVs have a shorter driving range per charge than most conventional vehicles have per tank of gas. BEV manufacturers typically target a range of more than 200 miles on a fully charged vehicle. According to the U.S. Department of Transportation, Federal Highway Administration, 100 miles is sufficient for more than 90 percent of all household vehicle trips in the United States. For longer trips, it is necessary to recharge the vehicle or swap the battery.

Applicability to Proposed Project:

As outlined in the Electric Vehicle Scenarios above, a significant population of passenger EVs is expected to visit the site at Phase 1 (2025) and full buildout of the project (2035). Developing the supporting infrastructure (i.e., cable raceways) for installing EV charging stations will enable WLC to more readily and cost effectively provide this service to future tenants if and when demand dictates. For a project the size of WLC, the current Title 24 building code requires that 6 percent of parking spaces be constructed to accommodate electric vehicle supply equipment (EVSE) for future electric vehicle charging.

Truck BEVs

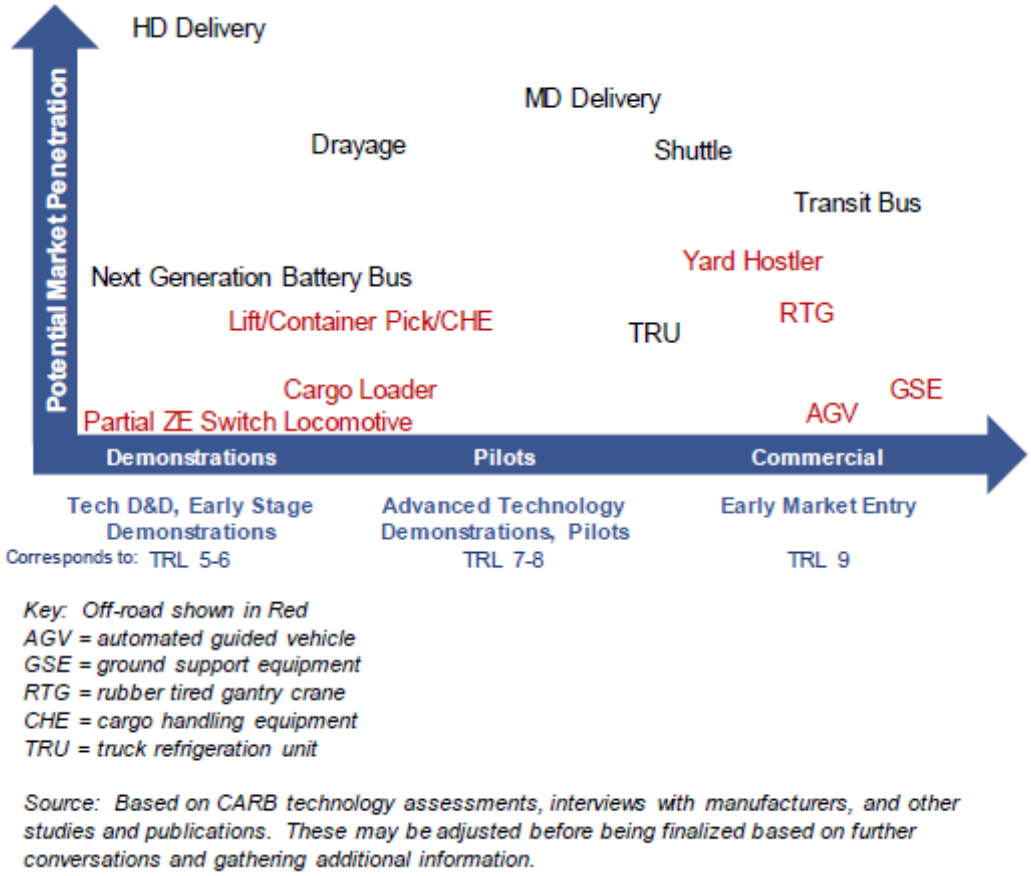
CARB has recently assessed the five- to ten-year outlook for BEV technology in the medium-duty (8,501 to 14,000 pounds (lbs.) Gross Vehicle Weight Rating (GVWR)) and heavy-duty (14,001 lbs. and above GVWR) truck and bus market (CARB, 2015). The study found that battery electric transit buses and shuttle buses are increasingly available from a variety of manufacturers, as are other medium-duty BEVs, primarily delivery vehicles. BEV trucks currently in the marketplace typically use lithium-ion battery chemistries. BEVs are just beginning to penetrate the heavy-duty vehicle market. To date, most medium- and heavy-duty BEV truck deployments in California have been in the urban vocational work truck category, focusing on urban transit buses and intracity delivery with daily ranges of generally 100 miles or less.

Heavy duty and medium duty delivery trucks, drayage trucks all have large potential for market penetration but lag transit buses and shuttles in terms of technology development. While transit buses have already been commercialized, medium duty BEVs are undergoing pilots and advanced demonstration projects, while drayage heavy duty BEVs are still in the early demonstration phase.

Applicability to Proposed Project:

Figure 2 provides a snapshot of the market penetration and technology development status for BEV trucks. BEV solutions for heavy duty applications are in the early phases of commercial market deployment. BEV applications in the medium duty delivery and work truck segments are also in the early market or late pilot deployment stage. As the project gets built out, several truck BEV options may become feasible for the tenants depending on the specific distances traveled and duty cycles of the vehicles deployed. Recognizing that the timeline for market penetration and technology development is currently speculative, developing the supporting infrastructure for charging these vehicles (i.e., cable raceways to support EV supply equipment) will enable WLC to provide future EV charging capabilities to future tenants as truck BEVs become commercially available.

Figure 2 Technology and Commercialization Status – Battery Electric Trucks



Source: CALSTART, 2018

Hybrid Electric Vehicles (HEVs) and Plug-in Hybrid Electric Vehicles (PHEV)

Hybrid electric vehicles (HEVs) are powered by an internal combustion engine or other propulsion source that can be run on conventional or alternative fuel, and an electric motor that uses energy stored in a battery (but not recharged from a plug-in source). Electric drive is typically used at low speeds for shorter distances, while blended electric-fuel mode is used at higher speeds and longer distances. The extra power provided by the electric motor allows for a smaller combustion engine. Additionally, the battery can power auxiliary loads like sound systems and headlights, and reduce engine idling when stopped. Together, HEVs combine the benefits of high fuel economy and low emissions with the power and range of conventional vehicles.

A HEV cannot plug into off-board sources of electricity to charge the battery. Instead, the HEV uses regenerative braking and the internal combustion engine to charge the battery. The HEV captures energy normally lost during braking by using the electric motor as a generator, and storing the captured energy in the battery. The energy from the battery provides extra power during acceleration.

Plug-in hybrid electric vehicles (PHEVs) are powered by both an electric motor using electricity stored in batteries, or an internal combustion engine or other propulsion source, using a fuel such as gasoline or diesel. Electric drive is typically used at low speeds for shorter distances, while blended electric-fuel mode is used at higher speeds and longer distances. Using electricity from the grid to run the vehicle some or all of the time reduces operating costs and petroleum consumption, relative to conventional vehicles. PHEVs might also produce lower levels of emissions, depending on the electricity source.

PHEVs generally have larger battery packs than non-plug-in hybrid electric vehicles (discussed below). This makes it possible to drive moderate distances using just electricity (about 10 to 40-plus miles in current models), commonly referred to as the "all-electric range" of the vehicle.

During urban driving, most of a PHEV's power comes from stored electricity, if the battery is charged. For example, a light-duty PHEV driver might drive to and from work on all-electric power, plug in the vehicle to charge it at night, and be ready for another all-electric commute the next day. The internal combustion engine powers the vehicle when the battery is mostly depleted, during rapid acceleration, or when intensive heating or air conditioning is required. Some heavy-duty PHEVs work the opposite way, with the internal combustion engine used for driving to and from a job site and electricity used to power the vehicle's equipment or control the cab's climate while at the job site. The PHEV fuel consumption depends on the distance driven between battery charges. For example, if the PHEV is never plugged in to charge, the fuel economy will be about the same as a similarly sized non-plug-in hybrid electric vehicle. If the PHEV is driven a shorter distance than its all-electric range, and plugged in to charge between trips, it may be possible to use only electric power.

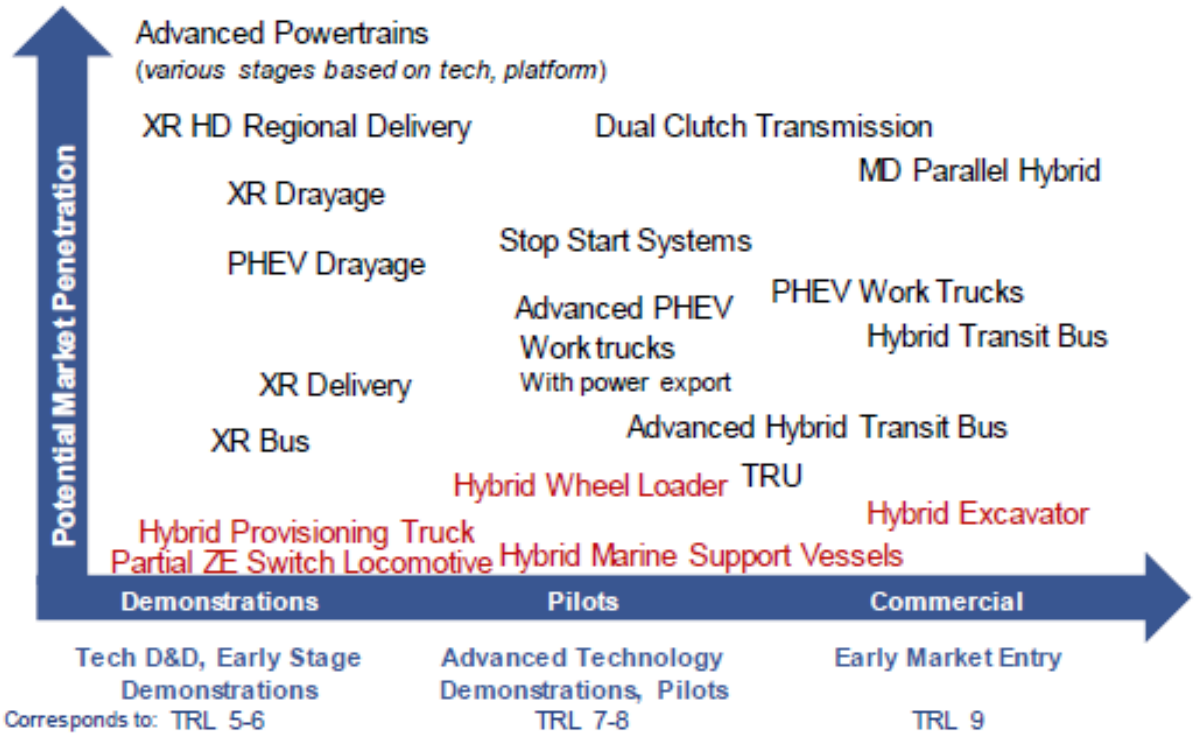
PHEV batteries can be charged by an outside electric power source, by the internal combustion engine, or through regenerative braking. During braking, the electric motor acts as a generator, using the energy to charge the battery (U.S. Department of Energy, 2016).

Applicability to Proposed Project:

California’s growing the fleet of passenger EVs includes BEVs, HEVs, and PHEVs, all contributing the state’s ZEV targets of 1.5 million by 2025 and 4.2 million by 2030. The full range of EV types should be expected in the fleet mix visiting the WLC in 2025. It is speculative to state what the fleet mix will be in 2035, but the all three EV types should be anticipated in designing the charging infrastructure.

There are currently early market offerings in the medium-duty delivery and work truck categories that are applicable to this project. Hybrid systems show promise to enable the electrification of the driveline of heavy duty trucks by augmenting the range with a secondary power system. Figure 3 provides a snapshot of the market penetration and technology development status for HEV and PHEV trucks.

Figure 3 Technology and Commercialization Status – Hybrid Electric Trucks



Key: Off-road shown in Red
Hybrid = electric hybrid
PHEV = Plug In Hybrid Electric Vehicle; can allow for some zero emission range
XR = Extended Range; series electric drive with power generator to allow longer range driving
Marine Support Vessels = tugs, tenders, ferries
TRU = truck refrigeration unit

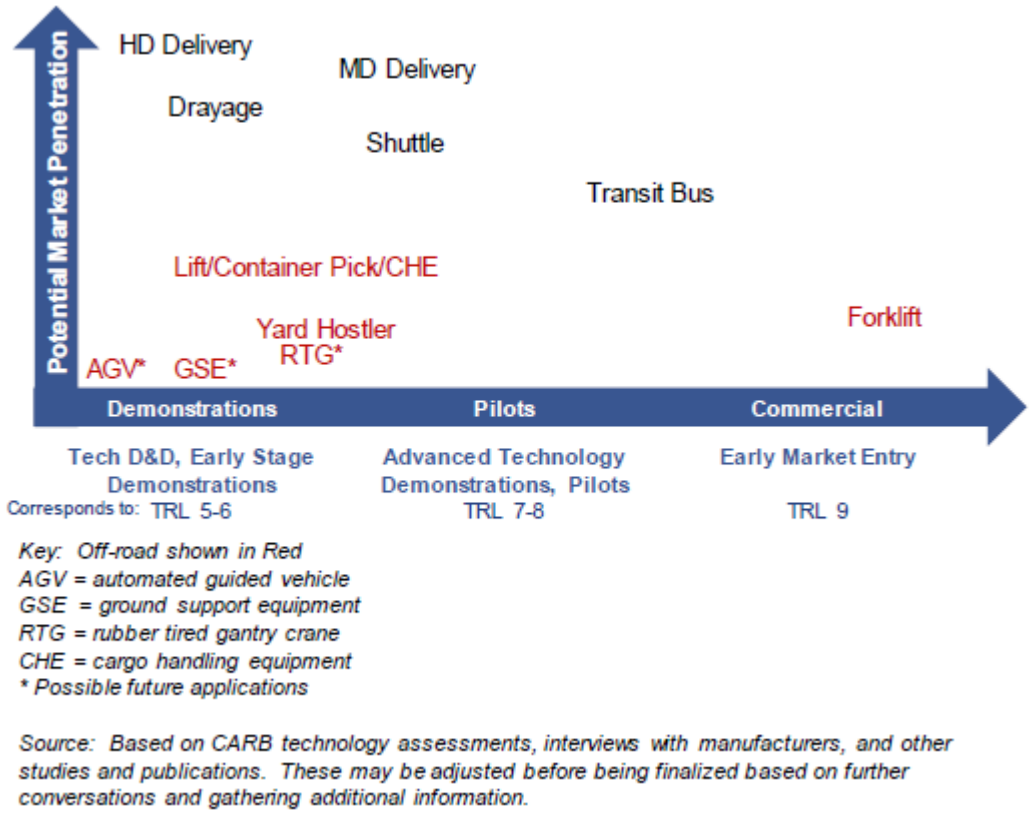
Source: Based on CARB technology assessments, interviews with manufacturers, and other studies and publications. These may be adjusted before being finalized based on further conversations and gathering additional information.

Source: CALSTART, 2018

Range Extended Electric Vehicle (REEV) – Fuel Cell

Range extended electric vehicles that utilize a fuel cell as an additional energy source are promising and deserve attention. In particular, medium-duty delivery vehicles have been identified as a viable vehicle category in the near term. In on road applications fuel cell buses are approaching commercial technology readiness levels. Advancements in the commercialization of both battery electric trucks and fuel cell electric buses have the potential to expedite the commercialization of fuel cell electric trucks. Figure 4 provides a snapshot of the market penetration and technology development status for fuel cell electric trucks.

Figure 4 Technology and Commercialization Status – Fuel Cell Electric Trucks



Source: CALSTART, 2018

Cost and Availability of Zero Emission Trucks

Medium-duty and heavy-duty zero emission trucks currently cost significantly more than conventionally fueled trucks and buses, but funding exists to help offset the higher cost. This includes CARB's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), which is funded by Low Carbon Transportation investments and the Air Quality Improvement Program (AQIP), offers a purchase voucher on a first-come, first-served basis. Vouchers are available for electric, hybrid, fuel cell, and low-NOx natural gas trucks and buses. The program has been operating for over eight years and over 4000 vouchers have been issued. Base voucher amounts range from $20,000 to $315,000 depending on vehicle size and technology.[12] In addition, the California State Transportation Agency/Caltrans funds transit expansion and capital improvement projects with Greenhouse Gas Reduction Fund monies, some of which have gone to EV transit buses. The Goods Movement Emission Reduction Program funded by Proposition 1B provides funds to existing truck owners who wish to upgrade to EVs (CARB, 2015).

[12] Examples of current eligible vehicles can be found at: https://www.californiahvip.org/eligible-technologies/

Ongoing pilot projects and demonstration projects for emerging ZEV technologies are being funded by CARB, the California Energy Commission (CEC), and local air control districts including the South Coast Air Quality Management District (SCAQMD), some of which are described below under "Technology Demonstration Projects."

As indicated in Table 10, there were very few heavy duty EV trucks operating in California in 2015, but there were hundreds of medium-duty EVs on the road, and the number has grown. Many of these vehicles are being used for urban delivery. CARB expects widespread penetration of such medium duty EV trucks into the market place in the next 5 to 10 years. UPS recently received 17 fully electric EVI delivery vans purchased with CEC demonstration funds, with each van costing around $143,000, including the purchase of the chassis and decommissioning of the existing powertrain (CARB, 2015).

TABLE 10
SUMMARY OF MEDIUM-DUTY AND HEAVY-DUTY EV POPULATIONS IN 2015

Vehicle	Technology Readiness	Number in Service	Notes
Transit Bus	Commercially Available	Approximately 40 in California, and > 2,500 worldwide	3 models commercially available in U.S.
School Bus	Limited Commercial Availability	4 in California	3 new buses ordered in SCAQMD 6 repowers underway with V2G
Medium-Duty (8,501 to 14,000 lbs. GVWR) [a]	Limited Commercial Availability	300+	Focused on delivery service
Heavy-Duty (> 14,000 lbs. GVWR)	Demonstration Phase	2 Drayage 1 Refuse	13 Class-8 Trucks under construction

Source: CARB, 2015
Notes:
a. GVWR = Gross Vehicle Weight Rating

Zenith Motors offers an electric delivery/work van that can also be configured as a 12-passenger shuttle. The vans offer a range option of 90 or 120 miles, using LiPO4 batteries, with around 6 hours required to recharge. With the available HVIP vouchers, Zenith is offering the 120 mile 350 cargo van configuration for a net cost of $40,400, which is comparable to the analogous Ram ProMaster gasoline unit (CARB, 2015).

Zero Emission Truck Technology Demonstration Projects

A number of zero emission truck technologies are being tested and demonstrated in the South Coast Air Basin and throughout California that aim to advance their commercial development goods movement.

Countywide Zero-Emission Trucks Collaborative

At the request of partner agencies, the Los Angeles County Metropolitan Transportation Authority (Metro) has taken the lead in forming a Countywide Zero-Emission Trucks Collaborative to promote development and deployment of zero-emission trucks in Los Angeles County. The Collaborative will include ports of Long Beach and Los Angeles, Caltrans, Southern California Association of Governments (SCAG), and SCAQMD. The Collaborative is currently developing pilot projects as well as demonstration projects for zero-emission trucks.

Advancing zero-emission truck technology and implementation will help achieve the air quality objectives of Metro's Long Range Transportation Plan, goods movement program, and the agency's over-arching goal of creating a more sustainable transportation system. The collective efforts will be critical to meeting the stringent, federal health-based air standards proposed by the USEPA. The SDAQMD believes that should the new standards be adopted by USEPA, then a significant percentage of vehicles will need to achieve zero or near-zero-emissions by 2023. However, to date, the focus has been on dedicated zero-emission electric truck technology along the I-710 (see "I-710 Corridor Zero-Emission Truck Commercialization Study" below). As part of the I-710 Corridor Project EIR/EIS, Metro has explored the feasibility of zero-emission trucks, including an Alternative with a 17-mile zero-emission, dedicated freight corridor in response to community air quality concerns. Metro has been investigating vehicle technologies that could meet the zero-emission requirement of the corridor. However, there are a series of challenges to overcome and critical stages in the development process to be completed before commercialization of zero-emission trucks will be realized. Establishing a coalition focused on technology advancement and implementation will help align Metro's policies and leverage its investments with those of partner agencies to realize our common vision for zero-emission trucks, clean air, and sustainable communities (Metro 2016).

Advanced Technology for Truck Corridors

The Advanced Technology for Truck Corridors pilot project being led by CalTrans brings together Integrated Corridor Management, Active Traffic Management, Freight Advanced Traveler Information System, and Connected Vehicle advanced technology platforms as an integrated strategy to improve system efficiency and support the goals of the California Sustainable Freight Action Plan (CalTrans, 2016):

- Increase freight system efficiency of freight operations at specific facilities and along freight corridors such that more cargo can be moved with fewer emissions.
- Accelerate use of clean vehicle and equipment technologies and fuels of freight through targeted introduction of zero emission or near-zero emission (ZE/NZE) technologies, and continued development of renewable fuels.
- Encourage State and federal incentive programs to continue supporting zero and near-zero pilot and demonstration projects in the freight sector.
- Accelerate use of clean vehicle, equipment, and fuels in freight sector through targeted introduction of ZE/NZE technologies, and continued development of renewable fuels. This includes developing policy options that encourage ZE/NZE vehicles on primary freight corridors (e.g., Interstate-710); examples of such policy options include a separated ZE/ NZE freight lane, employing market mechanisms such as favorable road pricing for ZE/NZE vehicles, and developing fuel storage and distribution infrastructure along those corridors.

The Advanced Technology for Truck Corridors Pilot Project Work Plan (CalTrans, 2017) describes the project occurring in phases. The first phase will mainly involve advance technology deployment along I-710 and nearby arterials, the second phase will involve State Route 60 and I-10, and the third phase will involve improvements along I-15. The components include

- **Integrated Corridor Management** where Intelligent Transportation Systems (ITS) will incorporate Vehicle-to-Infrastructure (V2I) communications using the latest Connected Vehicle (CV) technology. New ITS infrastructure will allow for the collection of truck-specific data on all freeways, including lane-by-lane information, freight vehicle classification, and truck length data. Data from these systems will be transmitted to the Caltrans Advanced Traffic Management System and others through the Regional Integration of Intelligent Transportation Systems network.

- **Active Traffic Management** incorporating a series of advanced Active Traffic Management (ATM) strategies that address congestion using various methods to manage and control traffic in real-time based on prevailing conditions, and to make informed, performance-driven decisions regarding traffic management.

- **Connected Vehicle Technology**, which has the potential to transform transportation through the creation of safe, interoperable wireless communications networks among passenger cars, buses, commercial trucks, trains, traffic signals, smart phones, and other connected devices. This technology aims to address some of the biggest challenges in surface transportation with respect to safety, mobility, and the environment.

- **Support for Zero and Near-Zero Emission Trucks:** The Pilot supports the region's efforts to increase the number of ZE and NZE trucks operating within and around the San Pedro Bay Port Complex by setting a target for deploying ZE charging stations and other alternative fueling stations along the I-710 south corridor. The objective of SCAQMD's program is to deploy up to 500 ZE and low Nitrogen Oxide (NOx)/NZE trucks on the I-710 Corridor between 2018 and 2025 (Phase 1) and another 500 ZE and NZE trucks between 2026 and 2035 (Phase 2) for a total of 1,000 ZE and NZE trucks. The program is intended to help build a fleet of ZE and NZE trucks that would utilize the I-710 Corridor as the I-710 Project comes online. It is envisioned that incentive funding for vehicle replacements, vehicle conversions, and/or purchase subsidies will develop.

I-710 Corridor Zero-Emission Truck Commercialization Study

CALSTART recently completed a zero emission truck commercialization study to support the I-710 Corridor Project (CALSTART, 2013). CALSTART reviewed a number of reports and studies to evaluate which zero-emission truck technologies could potentially meet the needs of the I-710 Corridor Project and drayage users, developing a preliminary business case for the more feasible technology alternatives, and describing a commercialization plan for these zero-emission capable trucks based on the technologies recommended. The study concludes that zero-emission capable drayage trucks can be developed, demonstrated, and commercially deployed (roughly 10,000 trucks) by 2025.

Through user surveys and interviews with drayage operators, CALSTART determined a market need for at least 100 miles in range capability, before refueling is needed (one-tank range), and preferably 200 miles. Additional performance requirements identified that are independent of fuel technology include:

- The vehicle must have sufficient power for operation (400 horsepower; 1,200 to 1,800 foot-pounds of torque);

- The vehicle must have at least 100 miles in range capability, before refueling is needed (one-tank range), and preferably 200 miles; and

- The vehicle must have the capability to be used on all delivery routes.

Key findings of the CALSTART study include:

- BEV designs can deliver 100+ miles of range but based on their analysis have a challenging business case.

- REEV with Fuel Cell designs can deliver more than 100 miles of zero emission range, and offer a reasonable business cases when utilization is high. Electrical infrastructure needs are lower than BEVs, and hydrogen infrastructure needs should be manageable in the I-710 region.

- REEV with Engine (CNG) can deliver 50 miles of ZE range and up to 250 more miles of "very low emissions" range. CALSTART concludes that this option has the best business case of the examined alternatives, provided CNG costs are low and utilization is high. Electrical infrastructure needs are lower than BEVs, and CNG infrastructure is already under development.

- The optimal technology for a zero-emission capable Class 8 drayage truck depends upon the zero-emission range required:

    - 20 miles ZE range: HEV, PHEV, REEV, and BEV architectures are all suitable;

    - 50 miles ZE range: Both REEV and BEV designs are optimal;

    - 100 miles ZE range: Both REEV and BEV designs are optimal; and

    - Over 100 miles ZE range: REEV with Fuel Cell is the primary viable option.

The CALSTART study emphasizes supporting infrastructure as a key to the successful deployment of any zero-emission truck implementation. First, and foremost, sufficient refueling and/or recharging stations are needed. Infrastructure development should proceed concurrently with the development and deployment of zero-emission trucks for operations to be successful. As with any scaling up of zero emission truck operations, additional studies are required to determine infrastructure needs for the I-710 Corridor Project. Full commercialization will require several paths of parallel activity, including focused vehicle and infrastructure development; demonstration projects; a supportive regulatory framework; enhanced operational and business case assessment; and fleet training, maintenance training, and decision support.

The CALSTART study found that the current cost of a zero emission truck is approximately double the cost of a conventional diesel truck. However, costs of the key components of batteries and fuel cells are expected to fall dramatically as technology advances and volumes increase. Future operating costs (i.e., primarily fuel costs) can be reasonably estimated based on fuel consumption and predicted fuel costs but maintenance costs will remain difficult to estimate until enough zero emission trucks are in operation for long enough to collect data and ascertain maintenance needs.

Additional Zero Emission Truck Demonstration Projects

Recently, the South Coast Air Quality Management District (SCAQMD) submitted comments to the California Department of Toxic Substances Control (DTSC) regarding the air quality impacts analyzed in the Draft Program EIR for the Santa Susana Field Laboratory Project, describing several zero emission truck demonstration projects underway in the South Coast Air Basin (SCAQMD, 2017), For each of these projects, the SCAQMD memo provides details on technology development, funding information and incremental vehicle cost:

- **CARB Zero Emission Drayage Truck Demonstration Project –** SCAQMD received an award of approximately $23.6 million in 2016 to develop and demonstrate zero emission drayage trucks under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund Investments Program.
- **2012 DOE Zero Emission Drayage Truck Demonstration Project (ZECT I)**
- **DOE Zero Emission Cargo Transport Demonstration Project (ZECT II)**
- **CEC Sustainable Freight Transportation Project**
- **Overhead Catenary Truck Project**

Low Carbon Fuels

Biodiesel Fuel

Biodiesel is a cleaner burning diesel replacement fuel, produced from a renewable diverse mix of resources including agricultural oils, recycled cooking oil, and animal fats. Meeting strict technical fuel quality and engine performance specifications (American Society of Testing & Materials (ASTM) D6751), biodiesel can be used in existing diesel engines without modification, and is covered by all major engine manufacturers' warranties, most often in blends of 5 percent up to 20 percent (known as B20) biodiesel. Biodiesel is produced in nearly every state in the country. Biodiesel is the only alternative fuel to have fully completed the health effects testing requirements of the 1990 Amendments to the federal Clean Air Act. Health testing was performed based on inhalation of biodiesel exhaust at different concentrations. Results of the testing concluded that biodiesel exhaust concentrations expected to be observed on the field would not pose a threat to human health (Sharp, 1998)

Biodiesel that meets ASTM D6751 and is legally registered with the USEPA, is a legal motor fuel for sale and distribution (Biodiesel.org 2016). The use of biodiesel in a conventional diesel engine, not equipped with new diesel after treatment, results in substantial reduction of unburned hydrocarbons, carbon monoxide (CO), and PM compared to emissions from diesel fuel. In addition, the exhaust emissions of sulfur oxides and sulfates (major components of acid rain) from biodiesel are essentially eliminated compared to higher sulfur diesel (Biodiesel.org 2016).

Of the major exhaust pollutants, both unburned hydrocarbons and NO_X are ozone (or smog) forming precursors. The use of biodiesel in a conventional diesel engine results in substantial reduction of unburned hydrocarbons, CO, and PM. However, emissions of NO_X are either slightly reduced or slightly increased depending on the duty cycle of the engine and testing methods used. Biodiesel further enhances the advantages of diesel by reducing vehicle emissions. B20, a 20 percent blend of biodiesel and conventional diesel, reduces emissions of hydrocarbons by 20 percent and CO and PM emissions by 12 percent. Based on engine testing, using the most

stringent emissions testing protocols required by USEPA for certification of fuels or fuel additives in the U.S., the overall ozone forming potential of the hydrocarbon emissions from biodiesel was nearly 50 percent less than that measured for diesel fuel. New Technology Diesel Engines (NTDE) (i.e. those with PM traps and selective catalytic reduction, SCR, technology required for on-road applications in the US after 2010) reduce emissions of both PM and NO_X with B20 by over 90 percent compared to a conventional diesel engine based on model year 2004 emissions standards. This makes NTDEs as clean as or cleaner than either gasoline or natural gas fueled engines (Biodiesel.org 2016).

Biodiesel Availability

Biodiesel is available nationwide, and can be purchased directly from biodiesel producers and marketers, petroleum distributors, or at a few public retailers throughout the nation (Biodiesel.org 2016). Biodiesel fuel is available at fueling stations within _____ miles of the WLC site, as shown in **Figure 5**, *Biodiesel Fueling Stations near World Logistics Center Site*, below.

Biodiesel Usage

Biodiesel usage is growing rapidly in every market segment where conventional diesel fuel is used. Some of the leading types of consumers of biodiesel fuels include state and municipal governments, school districts, U.S. Department of Defense, agriculture, cruise ships, mining, commercial trucking and truck stop operators. Many cities and states have started to require that their trucks and buses use biodiesel fuels. Notable examples of municipal users in California include the cities of San Francisco, San Jose, and Santa Monica. Some states such as Washington, Louisiana and Minnesota now also mandate that a certain percentage of all diesel fuel sold must be biodiesel.

Use of biodiesel is diverse, with a variety of users (e.g., municipalities, agencies, and utilities) and equipment and vehicle fleets, such as the following examples (Berkeleybioddiesel.org 2016):

- New common rail engines use biodiesel fuel, B5 or B20, depending on manufacturer.
- Automobile manufacturer acceptance and vehicular usage of biodiesel fuel began when Chrysler released the Jeep Liberty CRD diesels into the American market with B5, which was an indication of at least partial acceptance of biodiesel fuel usage in the automotive industry.
- The City of Halifax, Nova Scotia updated its bus system to allow the fleet of city buses to run completely on a fish-oil based biodiesel fuel.
- The McDonalds Corporation in United Kingdom produced biodiesel from the waste oil of its restaurants and use as biodiesel fuel to run its vehicle fleet. The British Train Operating Company, Virgin Trains was transformed to run on B20. The Royal Train runs onB100.
- The Disneyland Theme Park operates its park trains on B98 biodiesel blends.
- Caterpillar Corporation uses of blends up to B20 in its off-road Tier 4 938K wheel loader. Caterpillar has approved the use of B20 biodiesel across its range of compact and mid-range engines.
- Komatsu Corporation announced that an acceptable biodiesel fuel blend of up to B20 can be used for all Komatsu engines.
- The Volvo Corporation warranty statement for Volvo Trucks' D11, D13, and D16 engines that the use of biodiesel up to a maximum of B20 in and of itself, will not affect the manufacturer's mechanical warranty as to engine and emissions system related components, provided the bio fuel used in the blend conforms to ASTM standards.

- The John Deere Corporation announced that all John Deere engines can use biodiesel blends. B5 blends are preferred, but concentrations up to B20 can be used providing the biodiesel used in the fuel blend meets the ASTM standards.

Applications of biodiesel fuel can also be seen as a heating fuel in domestic and commercial boilers, using a blend of heating oil and standardized biofuel, known as "bio heat" (Berkeleybioddiesel.org 2016).

As of 2015, the annual U.S. production of biodiesel was 1,263 million gallons (U.S. Energy Information Administration (EIA 2016), and 32 million gallons in California (California Biodiesel Alliance 2016).

The USEPA has set a target of 18.8 billion (bn) gallons blended into the U.S.' fuel supply in 2017, up 4 percent from the 18.1 bn gallons set for this year, which includes 14.8 bn for conventional biofuels, mainly ethanol, up from 14.5 bn for this year. This figure is still far below the 24 bn gallon target in the Renewable Fuel Standard set in 2007 by Congress, which was aimed at cutting US oil imports and increasing renewable fuel use. In addition:

- Total renewable fuel volumes would grow by nearly 700 million gallons between 2016 and 2017.
- Biomass-based biodiesel, which must achieve at least 50 percent lifecycle emissions reductions, would grow by 100 million gallons between 2017 and 2018.
- Cellulosic biofuel, which requires 60 percent lifecycle carbon emissions reductions, would grow by 82 million gallons, or 35 percent, between 2016 and 2017.

Biodiesel Benefits and Drawbacks

The use of biodiesel has benefits and drawbacks. According to a USEPA study, the use of B20 can reduce emissions of hydrocarbons by 20 percent, CO by 11 percent, and PM by 10 percent; however it can increase NO_X emissions by 2 percent. The use of biodiesel does not contribute substantial amounts of GHGs to the global climate change problem since they only emit back to the environment the CO_2 that their source plants absorbed from the atmosphere as part of the natural carbon cycle. A benefit of biodiesel is that it can be used in existing diesel engines with no physical changes needed.

Many producers have been unable to produce biodiesel that meets ASTM 6751 quality due primarily to their inability to remove all impurities and water during the washing and refining processes. The USEPA found that the use of B20 can reduce fuel efficiency by 1 to 2 percent. B100, and other diesel/biodiesel blends, are more expensive to consumers than standard diesel fuel, as a result of the rapidly rising feedstock prices and production problems of producers.

Applicability to Proposed Project:

Future tenants and suppliers of the WLCSP warehouses may choose to use biodiesel. Given that buildout of the WLC will result in daily emissions of NOx well in excess of applicable significance levels, and NOx is the primary culprit in the Basin's ozone nonattainment status, the use of biodiesel in Project-related vehicles should not be mandated. However, because the use of biodiesel results in a reduction of hydrocarbons, CO, and PM as compared to conventional diesel, its use should not be discouraged or limited.

Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG)

CNG and LNG are two forms of natural gas currently used in vehicles. CNG is produced by compressing natural gas to less than 1 percent of its volume at standard atmospheric pressure. To provide adequate driving range, CNG is stored onboard a vehicle in a compressed gaseous state within cylinders at a pressure of 3,000 to 3,600 pounds per square inch. CNG is used in light-, medium-, and heavy-duty applications. A CNG-powered vehicle gets about the same fuel economy as a conventional gasoline vehicle on a gallon of gasoline equivalent (GGE) basis. GGE is the typical way CNG is sold at public fueling stations. One GGE equals about 5.66 pounds of CNG.

LNG is natural gas that has been converted to liquid form for easier storage and transport. LNG is produced by purifying natural gas and super-cooling it to approximately -260 °F to turn it into a liquid. During the process known as liquefaction, natural gas is cooled below its boiling point, removing most of the compounds found in the fuel. The remaining natural gas is primarily methane with small amounts of other hydrocarbons. LNG must be kept at cold temperatures and stored in double-walled, vacuum-insulated pressure vessels. Because of LNG's relatively high production cost as well as the need to store it in expensive cryogenic tanks, the fuel's widespread use in commercial applications has been limited. One GGE equals about 1.5 gallons of LNG (U.S. Department of Energy, 2016).

There are three types of natural gas vehicles (NGVs):

- **Dedicated:** designed to run only on natural gas.
- **Bi-fuel**: have two separate fueling systems that enable them to run on either natural gas or gasoline.
- **Dual-fuel**: traditionally limited to heavy-duty applications have fuel systems that run on natural gas, and use diesel fuel for ignition assistance.

Light-duty vehicles are typically equipped with dedicated or bi-fuel systems, while heavy-duty vehicles use dedicated or dual-fuel systems. On the vehicle, natural gas is stored in tanks as CNG. Dedicated NGVs only have one fuel tank, and are not as heavy as bi-fuel NGVs and can offer more cargo capacity. The driving range of NGVs is generally less than that of comparable conventional vehicles because of the lower energy density of natural gas. Extra storage tanks can increase range, but the additional weight may displace cargo capacity.

LNG, a more expensive option, is used in some heavy-duty vehicles. The form of natural gas used is typically chosen based on the range an application needs. Because it is a liquid, the energy density of LNG is greater than CNG, so more fuel can be stored onboard the vehicle. As a result, LNG is more suitable than CNG for trucks that require longer ranges because liquid is more dense than gas, and, therefore, more energy can be stored by volume in a given tank. LNG is typically used in medium- and heavy-duty vehicles, such as Class 7 and 8 trucks requiring a greater range.

CNG/LNG Availability

Natural gas powers approximately 150,000 vehicles in the United States and approximately 15.2 million vehicles worldwide. Both CNG and LNG are domestically produced, relatively low priced, and commercially available. Considered alternative fuels under the Energy Policy Act of 1992, CNG and LNG are sold in units of GGEs or diesel gallon equivalents (DGEs) based on the energy content of a gallon of gasoline or diesel fuel. A CNG/LNG fueling station is planned for the WLC site, as described in the WLC Specific Plan. It would service smaller on-

site CNG vehicles (e.g., forklifts) associated with the warehouses and would also be publically available for refueling.

CNG/LNG Usage

CNG and LNG usage has been supported by various companies in the past for off-road construction trucks and on-road heavy duty trucks, such as the following:

- With regard to off-road construction trucks, Caterpillar is developing large CNG powered mining trucks that would be used mainly for hauling mining ore, debris, and soil.
- For on-road trucks, Volvo offers two CNG-powered on-road heavy duty day cabs (Model VNL and VNM) equipped with a factory-installed Cummins ISL G engine (available 2013). The larger, more robust VNL model features a 12-liter Cummins- Westport ISX12 G gas engine. As of November 2016, Volvo VNL models are commercially available with the ISX12 natural gas engine.
- Terex introduced its first natural-gas-fueled mixer truck -- the front-discharge FD5000 “Great Lakes” --with a new 12-liter Cummins ISX12G engine available in ratings up to 400 hp and 1450 ft. lb. of torque, in 2014.
- Freightliner Trucks showcased its first 114SD concrete mixer with CNG technology at the 2013 World of Concrete in Las Vegas. In addition, there are other Freightliner trucks that run off of natural gas.

These engines discussed above are also incorporated into a number of mass transit uses. CNG/LNG is used in a variety of heavy-duty sources, such as school buses, transit buses, capacity trucks, tractors, and freightliners.

CNG/LNG Benefits and Drawbacks

Natural gas vehicles are good choices for centrally fueled fleets. CNG tank technology and safety are improving, and in many cases CNG can provide operators with adequate range (less than 250 miles/day) for their operations. For vehicles needing to travel long distances (greater than 250 miles/day), LNG is a better choice. The advantages of natural gas as a transportation fuel include its domestic availability, widespread distribution infrastructure, low cost, and inherently clean-burning qualities.

The horsepower, acceleration, and cruise speed of NGVs are comparable to those of equivalent conventional vehicles. However, torque levels are slightly lower compared to diesel fueled engines. The Cummins ISL G natural gas engine has a diesel counterpart, the ISL 9 engine. The ISL G (natural gas) provides torque levels of up to 1,000 lb-ft, while the ISL 9 (diesel) provides torque levels of up to 1,300 lb-ft. Although the ISL G and ISL 9 engines are rated for 80,000 lb line haul applications, the deficiency in torque result in trucks travelling slower to the receiver destination. As torque is required for hauling heavy loads upgrade, use of natural gas engines may not be feasible for hauling heavy loads.

Compared with conventional diesel and gasoline vehicles, NGVs can produce some emissions benefits. When used as a vehicle fuel, natural gas can offer life cycle GHG emissions benefits over conventional fuels, depending on vehicle type, drive cycle, and engine calibration. In addition, using natural gas may reduce some types of tailpipe emissions from fuel combustion in a vehicle's engine. The emissions of primary concern include the regulated emissions of hydrocarbons, NO_X, CO, as well as CO_2. Due to increasingly stringent emissions regulations, the gap has narrowed between tailpipe emissions benefits from NGVs and conventional vehicles with modern emissions controls. USEPA is requiring all fuels and vehicle types to meet increasingly lower, near zero, thresholds for tailpipe emissions of air pollutants. Still, NGVs continue to provide emissions benefits, especially when replacing older conventional vehicles or when considering life cycle emissions (ADFC 2016).

There are many heavy-duty NVGs —as well as a number of light-duty NGVs—available from original equipment manufacturers. Qualified system retrofitters can also economically, safely, and reliably convert many vehicles for natural gas operation.

However, unlike biodiesel, which is a fuel which can be used interchangeably with conventional diesel with no physical alteration of the engine needed, powering heavy duty equipment with CNG or LNG requires a major engine retrofit or for new equipment to be purchased with a CNG/LNG compatible engine to be installed by the original engine manufacturer (OEM). Thus, the use of CNG or LNG can prove to be costly.

California's Low Carbon Fuel Standard (LCFS) is starting to drive a growing preference for EVs over natural gas and other fossil-fueled vehicles. Even after accounting for the emissions associated with generating electricity (based on California's grid mix), electric buses, for example, typically have 70 percent lower GHGs and 50 percent lower NOX emissions than diesel and natural gas buses on a life cycle basis (Chandler, Espino, and O'Dea 2017). The LCFS helps make electric trucks and buses more affordable to companies and government agencies that purchase heavy-duty vehicle fleets because they can generate and sell LCFS credits and use the proceeds however best serves their business needs.

Applicability to Proposed Project:

The WLC Specific Plan requires that smaller on-site service vehicles associated with the warehouses will (such as forklifts) use non-diesel fuels such as compressed natural gas (CNG). The Proposed Project would include a CNG/LNG fueling station on-site that would service these vehicles and would also provide refueling to the public. Environmental Analysis for the project indicates that 204 trucks could refuel at the station each day based on trip rates presented in the Project's traffic study. The environmental analysis is conservative in that the traffic study uses a gas station with convenience store for deriving trip generation rates, which would be higher than for a CNG/LNG station.

CNG and LNG vehicles, along with a supporting refueling infrastructure, are applicable to the Proposed Project, and the Proposed Project is providing the refueling infrastructure to support their use. However, future growth of CNG/LNG trucks is speculative due to the financial incentive of the LCFS, increasingly strict NOx regulations, and market competition from BEVs and other ZEVs. Future tenants and suppliers of the WLCSP warehouses may choose to use trucks powered by natural gas. Given that buildout of the WLC will result in daily emissions of NOx well in excess of applicable significance levels, and NOx is the primary culprit in the Basin's ozone nonattainment status, the use of natural gas in Project-related vehicles could benefit the project relative to the use of diesel-powered trucks, but it should not be mandated because ZEVs provide even more benefit.

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E-2 WSP Renewable Technology Feasibility Report

HIGHLAND FAIRVIEW

WORLD LOGISTICS CENTER

COMPARISON OF RENEWABLE ENERGY TECHNOLOGIES

MAY 24, 2018



WORLD LOGISTICS CENTER

COMPARISON OF RENEWABLE ENERGY TECHNOLOGIES

TECHNICAL REPORT (5TH DRAFT)

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EXECUTIVE SUMMARY

OVERVIEW

At the request of Highland Fairview, WSP has conducted a comparison of renewable energy technologies and energy efficiency strategies which could be incorporated into the World Logistics Center (WLC) project ("Project") to reduce its energy use and energy-related environmental impacts.

The Project is a 40.6 million square foot logistics campus on the eastern side of the City of Moreno Valley. For the purposes of this analysis the project is assumed to be developed in two phases. Phase 1 consists of 15 buildings totaling 22,560,000 sf and is assumed to be completed in the year 2025. Phase 2 consists of 12 buildings totaling 18,040,000 sf and is assumed to be completed in 2040.

WSP's approach involved first estimating the Project's overall energy needs. This is known as the "Demand-Side Energy Analysis." WSP then identified specific ways that these energy needs could be reduced through the incorporation of a variety of energy efficiency technologies into the project design. Once the Demand-Side Energy Analysis was complete, WSP evaluated various means for supplying renewable clean energy to meet the reduced energy needs. This is known as the "Supply-Side Energy Analysis".

DEMAND-SIDE ENERGY ANALYSIS

The demand-side energy analysis was conducted using the IES hourly energy simulation software. To utilize the software, an accurate model of a typical Project building was developed, which included the details of a typical building such as the type of building construction material (concrete, wood, or metal), the amount of heating, ventilation and air-conditioning (HVAC) equipment, the type and extent of interior lighting, and the type and extent of material-handling equipment that would go into a typical WLC building. This established a prototype building that would be minimally compliant with the State of California's Title 24 building code requirements.
The Title 24-compliant prototype was then modified to incorporate the energy conservation measures (ECMs) to which the Project has committed in the WLC Specific Plan. The adjusted model represented the baseline model against which the energy performance of several additional ECMs were compared, creating a Project Building Model that took the Project well beyond Title 24 compliance.

The Demand-Side Analysis showed the package of ECMs in the Project Building Model provided a 17% improvement in energy performance and an equally impressive 18% reduction in GHG emissions over the baseline model. Key ECMs assumed in the Project Building Model were variable refrigerant flow (VRF) heat pumps providing heating and cooling to the office spaces, direct evaporative cooling as the first cooling stage and VRF as the supplemental cooling stage for any potential air-conditioned warehouse spaces, LED lighting throughout the offices and warehouses, and LED exterior and parking lot lighting.

The estimated overall energy demand for the Project assumes that all WLC buildings will incorporate the features of the Project Building Model, and will also accommodate electric vehicle (EV) energy usage at WLC, as discussed herein. While EV usage is expected to increase substantially over time, EV energy usage was not included in the

Demand-Side Analysis to highlight the effectiveness of the ECM's, which do not have any effect or offer any benefits regarding EV energy usage. A Summary of the Overall Energy Analysis Results with EV usage included is below.

SUPPLY-SIDE ENERGY ANALYSIS

The Project Building Model incorporating the recommended ECMs provided the analytical baseline against which potential renewable clean energy options were measured. WSP evaluated the Project site, its land uses, the circulation plan and existing utilities, along with other constraints and opportunities, to compile a comprehensive list of potential energy supply options. A screening process was applied to narrow the comprehensive list down to those several options that held the greatest potential for being successfully implemented at the Project. Screening criteria that caused some of the energy supply options to be discarded involved safety considerations, regulatory barriers, air emissions concerns, and technical impracticalities. The following table summarizes the Energy Resources considered.

Energy Resources Screening Results

Supply Option	Screening Criteria				
	Carbon	Resiliency	Financial	Technical	Regulatory
Recommended for further investigation:					
Combined Cooling, Heat and Power (CCHP)	—	✓	✓	✓	—
Ground Source Heat Pump (GSHP)	✓	—	—	—	✓
Solar photovoltaic (PV)	✓	—	—	✓	✓
Solar PV + battery	✓	✓	—	✓	✓
Off-site procurement	—	—	✓	✓	—
Not recommended for further investigation:					
Biomass	✓	✓	—	✗	✗
Biogas/landfill gas	✓	✓	—	✗	—
District energy	✓	✓	✗	✗	—
In-line hydro	✓	✓	—	✗	—
Microgrid	✓	✓	✗	✓	✗
Natural gas pressure recovery	✓	✓	—	✗	—
Wind	✓	—	—	✗	✗

The energy supply options emerging from the screening process were then subjected to engineering analysis to develop a technical basis for identifying the single best supply-side option for use at the WLC project. Ground-source heat pumps (GSHPs); combined cooling, heat, and power (CCHP); and solar photovoltaics (PV) with and without battery storage were modeled with the HOMER Energy simulation tool and other specialized software. Purchasing of green power (offsite procurement) from renewable energy projects located away from the WLC site was also considered among the sustainable energy options.

SUPPLY-SIDE CONCLUSIONS

WSP concluded in its analysis that GSHPs are not recommended for the Project due to the cooling requirements within the building being much greater than the building heating needs as a result of year-round weather conditions at the WLC site. Such an imbalance would cause the geoexchange field (where excess heat removed from the building by the cooling process is transferred via piping into the ground) to grow increasingly warmer over time. This, in turn, would degrade GSHP performance in providing building space cooling.

CCHP produces air emissions, resulting from the combustion of fossil fuels, that exacerbate the poor air quality of Moreno Valley and the entire South Coast Air Quality Basin. Furthermore, CCHP increases the Project's GHG emissions since it produces more GHG emissions than California's increasingly green grid.

Moreno Valley Utilities (MVU) is the utility provider for the Project and while solar PV is a viable option, MVU has limitations in its Electric Service Rules on the amount of PV allowed for commercial and industrial projects. A system that combines PV with battery storage of excess solar generation was considered, but the MVU solar sizing limitations and the estimated WLC Project demands do not result in excess solar generation to charge a battery. In addition, MVU's Time-of-Use rate structure is not compatible with the Project's peak electrical usage (load curve) making the use of batteries to deliver any meaningful reduction an unviable option.

Considering the air emissions constraints, MVU rate structures, Project electric load curves, and MVU PV sizing rules, rooftop PV systems without energy storage were determined to be the Project's best sustainable clean energy supply option. To determine the specific allowable PV size, WSP analyzed the hourly electric loads simulated using the IES modeling software. Phase 1 building simulation produced a minimum daytime electric load of about 600 kW. The minimum daytime electric load for Phase 2 buildings was simulated to be about 1,600 kW. Thus, since MVU limits on-site PV size to one-half the minimum electric demand a building experiences during daytime hours, Phase 1 buildings can provide up to 300 kW of PV (one-half the 600 kW minimum daytime electric load) and Phase 2 buildings can provide up to 800 kW (one-half the 1,600 kW minimum daytime electric load). The combination of the recommended ECM package and allowed rooftop solar enables the Project to meet more than 50% of its annual energy requirements from renewable energy.

Utilizing the maximum permitted amount of rooftop PV would enable the Project office spaces to achieve effectively net-zero energy (NZE) operations. In Phase 1 this would amount to the equivalent of fifteen 60,000 square-foot NZE office buildings. At full build-out this would amount to the equivalent of twenty-seven 60,000 square-foot NZE office buildings. To put this in context, the entire state of California has about 30 NZE office buildings in operation, under construction, or publicly committed as of 2016.

WSP's IES computer model of the Project buildings established the following annual energy usage of the office spaces for each building and the PV generation for each building as follows. Note that advances over time in energy efficiency technologies are assumed to result in less energy usage by Phase 2 offices:

Office Demand and PV Generation per Building

Description	Phase 1		Phase 2	
	Annual Energy Use (kWh/yr)	Peak Demand (kW)	Annual Energy (kWh/yr)	Peak Demand (kW)
Office-only energy usage per building	474,120	280	417,230	270
PV generation per building	512,400	300	1,366,400	800
Total project office energy usage	7,111,800	4,200	5,006,707	3,240
Total project PV generation	7,686,000	4,500	16,396,800	9,600

As shown in the table above, the use of PV in each phase would cover both the peak electric load generated by the offices and the annual energy usage of the offices, thereby achieving effective NZE status for the offices. Due to the highly speculative nature of the EV penetration in Phase 2, project mitigation measures require the project to upgrade the structural integrity of the roof on each building to accommodate the possibility of future solar installation over the entire roof. At a minimum, the project will install enough solar power in both phases to meet energy needs of the Project's office spaces.

ELECTRIC VEHICLE CHARGING LOADS

The use of electric vehicles (EVs) by the motoring public and in industry is projected to increase substantially over the period of Project build-out. Title 24 currently requires 6% of on-site parking spaces be designed to accommodate EV charging of passenger and light-duty truck vehicle classes. These minimum Title 24 requirements were applied to estimate the additional Phase 1 electricity usage at the Project attributable to EV charging. Because Phase 2 build-out concludes in 2040, EV charging energy usage is highly speculative, but the Project analysis assumed EV projections consistent with California policy trends.

The projected EV electric needs are significant for Phase 1 of the Project, amounting to about 6% of the total energy usage. At full build-out of the Project, projected EV impact is substantial, accounting for more than one-third of total energy usage by the WLC project. The incremental EV charging needs determine the overall minimum daytime electric load on each building. This, in turn, defines MVU's allowable amount of PV on each building's roof, establishing 300 kW as the expected maximum amount of allowed PV on each Phase 1 building, and accounting for the increase to a maximum of 800 kW of PV expected to be allowed on each Phase 2 building.

OVERALL PROJECT ELECTRICITY NEEDS

The combination of the electricity consumed by the buildings and that used by on-site EV chargers will result in a significant new load to be met by MVU's system. The table below summarizes the megawatts of peak electric demand projected to be associated with each phase of WLC development.

Peak Electric Demand for WLC Development

Stage	Number of Buildings	Total Peak Demand (MW)
Phase 1	15	36.5
Full Build	27	83.3

SUMMARY OF ENERGY ANALYSIS RESULTS

A summary of the projected energy performance of the Project is presented in the following tables. Phase 1 results are multiplied by the 15 buildings that are planned for the initial phase of construction. Build-out results are multiplied by 27 buildings in the total Project (15 buildings in Phase 1 plus 12 buildings in Phase 2). The first table summarizes the impact of the recommended ECM package, relative to buildings that are minimally compliant with Title 24. Note that these figures *do not include EV electricity usage or PV generation* in order to paint a clear picture of the efficacy of the recommended ECM package. The results demonstrate that the recommended ECMs are expected to deliver energy savings of 16 – 17%.

Energy Efficiency Performance for WLC Development

Stage	Energy Savings (MWh/yr)	Energy Savings (%)	GHG Savings (tonnes CO_2e/yr)	GHG Savings (%)	Renewable Energy Supply (%)*
Phase 1	34,892	16.7%	6,019	10%	49%
Full Build	57,449	16.2%	9,085	18%	55%

The second table summarizes the impact of the allowed PV capacities, relative to buildings incorporating the recommended ECM package. Note that these figures *include EV electricity usage* in order to paint a clear picture of the efficacy of on-site electricity generation via PV. This explains the much smaller values for energy savings and GHG savings.

Solar PV Performance for WLC Development

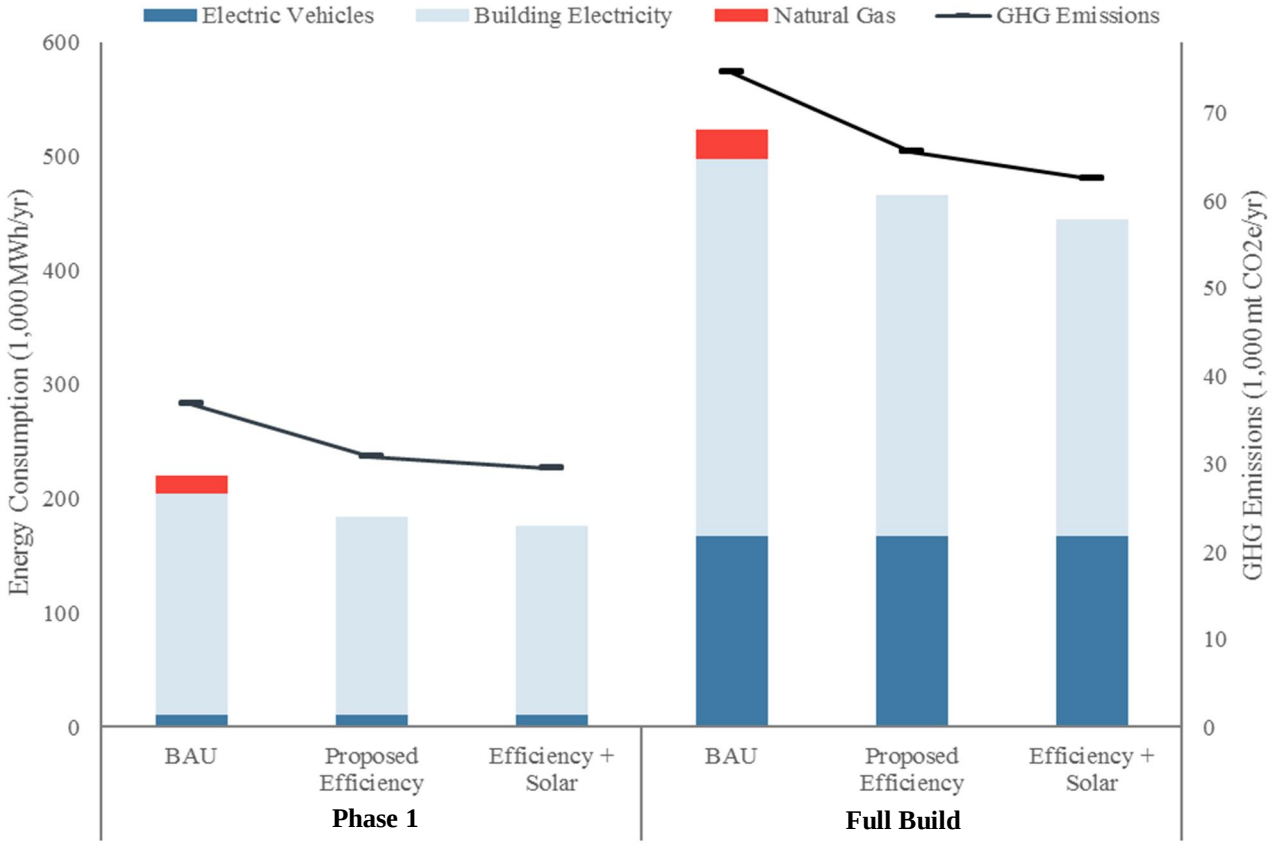
Stage	Energy Savings (MWh/yr)	Energy Savings (%)	GHG Savings (tonnesCO2e/yr)	GHG Savings (%)	Renewable Energy Supply (%)*
Phase 1	7,686	4%	1,276	4%	51%
Full Build	24,083	5%	3,386	5%	57%

*Renewable energy fraction takes account of renewables on the California grid

The bar chart below graphically presents the projected energy usage and GHG emissions for the entire Project at the end of Phase 1 and the end of Phase 2. The business-as-usual (BAU) bar reflects minimal compliance with Title 24;

the middle bar represents the recommended ECM package; and the third bar shows the combination of the ECM package and allowable PV.

Phase 1 and Full Build-Out Energy and GHG Results



OFF-SITE RENEWABLE ENERGY PROCUREMENT

Under current regulations, WLC tenants will be able to purchase electricity only from MVU. In the interest of completeness of the discussion on the topic of renewable energy, we herein describe multiple off-site renewable electricity procurement methods that are available in many other electric utility service territories. These include:

- Unbundled renewable energy certificates (RECs);
- Power purchase agreements (PPAs);
- Community choice aggregation (CCA);
- Green tariffs.

There is no one-size-fits-all recommendation for procurement of off-site renewable energy. Each customer's circumstances are likely to be unique, so the best off-site procurement option for one may very well not be the best option for another.

To meet the Project Objectives and the City's Economic Development Objectives (see Section 3.6 of the Project Final EIR and Section 1.3.1 of the WLC Specific Plan), WLC must establish and maintain a competitive position in meeting these objectives. The price premium associated with off-site renewable energy procurement would increase

WLC tenant utility costs and thus run counter to the Project Objectives and the City's Economic Development Objectives. Even if regulations allowed it, it would be counterproductive to require WLC tenants to procure renewable energy from off-site sources. For these reasons, the concept of requiring a tenant to procure off-site renewable energy was not considered a viable sustainable supply option to impose on the Project. Should electricity regulations change in the future to allow procurement of off-site renewable energy, and should WLC tenants elect for corporate, marketing, or other reasons to pursue procurement of off-site renewable energy, the means of doing so via one of the means presented in this report may become available to them.

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1 INTRODUCTION

1.1 AUTHORIZATION

WSP has been engaged to undertake an analysis of feasible renewable energy technologies that make sense for the World Logistics Center (WLC).

1.2 PURPOSE

The objective of this analysis is to identify potential renewable energy options for the WLC that will improve energy performance and reduce greenhouse gas (GHG) emissions of the WLC. The analysis considers Phase 1 and Phase 2 of the WLC. This document reports on analytical outcomes including:

- High level screening of all potential demand-side options to maximize the energy efficiency of the buildings and therefore minimize WLC energy consumption,
- High level screening of all potential supply-side options to deliver sustainable energy to the buildings,
- More detailed analysis of the options that show the best potential.

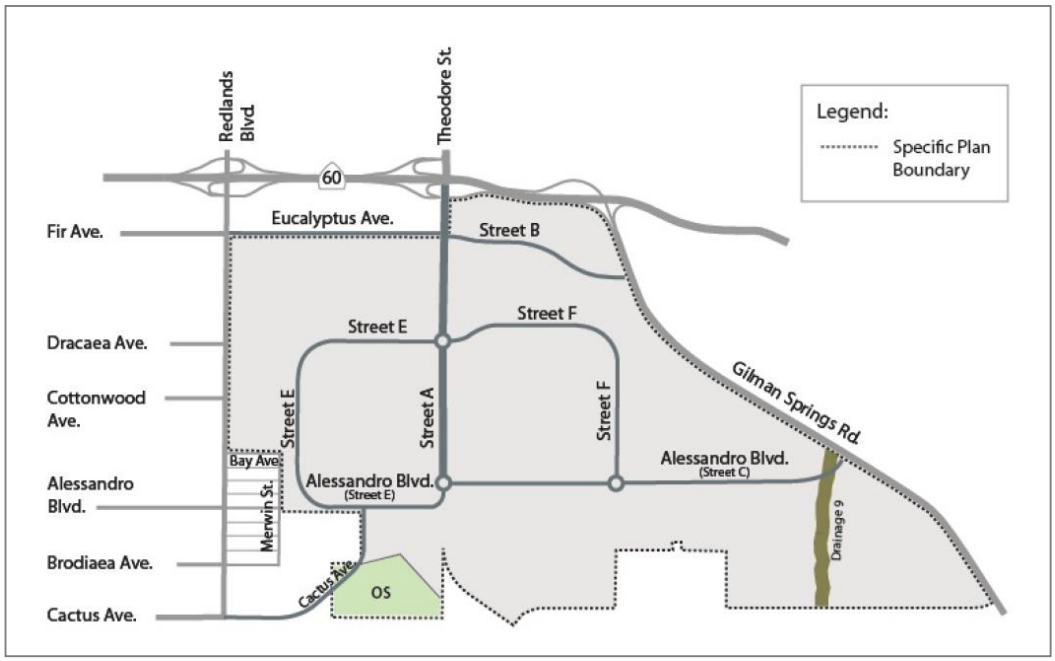
Evaluations considered the financial, energy, carbon, and technical feasibility of each option. Obviously infeasible options were screened out, including any supply-side options involving combustion of fossil fuels, due to Moreno Valley and the entire South Coast Air Quality Basin being out of compliance for NO_x and other air pollutants. This analysis includes electricity consumption of mobile energy end uses, including electric forklifts used in future WLC warehouses and electric passenger vehicles and electric light-duty trucks expected to be charged in future WLC parking lots.

2 BACKGROUND

2.1 WORLD LOGISTICS CENTER

The World Logistics Center (WLC) is a master-planned development encompassing 2,610 acres in Moreno Valley California, as shown in Figure 1. At full build-out the development will include up to 40.6 million square feet of building area. The vision for the World Logistics Center is to establish a world class corporate park specifically designed to support large-scale logistics operations.

Figure 1: WLC Map



WSP has undertaken an energy analysis the results of which are presented in this report. This report is intended to guide development of an updated EIR and help determine the best path forward to incorporate renewable energy into the development.

2.2 ENERGY CONTEXT

2.2.1 ELECTRIC UTILITIES

Moreno Valley Electric Utility (MVU) is expected to provide electric services to the WLC. A report developed by Utility Specialists determined that MVU will need to construct additional substation capacity beyond already planned expansions to meet the electric needs of the WLC. Therefore, reducing peak electricity demand from the WLC can also reduce the additional substation capacity required to serve the WLC.

Tenants of the WLC will contract for utility services directly with MVU. The rate structure for each account is determined by the monthly maximum demand. WSP expects that all proposed buildings in the WLC will exceed the 20 kW demand threshold specified by MVU and will therefore be subject to *Schedule C – Large General Service*. Tenants will also be eligible for *Schedule TOU-LGS – Time of Use – Large General Service* rates. However, analysis using energy models and

15-minute interval consumption data from five existing logistics buildings in the MVU service territory determined that a time-of-use rate is not advantageous to the customer. Therefore, the WSP analysis was conducted with the assumption that tenants at the WLC will be subject to the rates specified in *Schedule C – Large General Service* for primary voltage customers. The rate structure is such that customers can decrease their energy costs by reducing monthly peak electricity demand, reducing electricity consumption, or improving the power factor of their facility. Analysis of the renewable energy options within this report considers the impact of reducing monthly peak electricity demand and reducing electricity consumption.

MVU offers a solar net energy metering program to its customers. A successor rate to net energy metering, NEM 2.0, was adopted by the City Council on April 17, 2018. Under this new rate, customers will be paid for any excess generation at the end of each billing period, and will receive a dollar-denominated credit on their bill. However, based on conversation with MVU, WSP expects that this program will not be available to the WLC because of the expected size of each of the warehouses at the development. Furthermore, MVU imposes limits on the capacity of on-site solar PV generation that can be installed by their customers. Per *Resolution No. 2017-20* the "maximum solar generating capacity that will be approved to be connected to each meter is up to 50% of the meter minimum daytime load." This dramatically limits the amount of on-site solar generation that can be installed at WLC buildings.

2.2.2 NATURAL GAS UTILITIES

Southern California Gas Company (SCG) provides natural gas services in the WLC area for space heating and service water in the business-as-usual scenario. It is assumed that the tenants of the WLC will contract for natural gas services directly with SCG and be subject to the *GN-10* rates. A new natural gas distribution network at the site is required to provide natural gas services to individual buildings. In an all-electric scenario where WLC buildings do not consume natural gas, there is no need for a natural gas distribution network and capital cost savings can be realized.

2.2.3 GHG EMISSIONS

Electricity emissions factors for both Phase 1 and Phase 2 were calculated using 2016 eGRID factors for California-Mexico Power Area (CAMX) and changes in the energy resource mix projected by U.S. Energy Information Administration (EIA). As discussed in Appendix A: Current and Future Energy Context, the EIA projects that the California grid's emission factor will decline 31% from current levels by 2025 and 41% by 2040.

For natural gas, an emissions factor of 117 lb CO_2e/MMBTU (pounds of CO_2-equivalent per million BTU) was used to calculated GHG emissions per guidance from EPA's mandatory reporting rule. This emissions factor was held constant for both Phase 1 and Phase 2.

Table 1: GHG emissions factors

Phasing	Grid Electricity (lb CO_2e /MWh)	Natural Gas (lb CO_2e /MMBTU)
Phase 1 (2025)	366	117
Phase 2 (2040)	310	117

2.2.4 CRITERIA POLLUTANTS

The Moreno Valley air shed within the South Coast Air Quality Management District (SCAQMD) currently exceeds allowable NO_x limits by a factor of three. Consequently, distributed energy resources that emit NO_x were excluded from further analysis.

3 BASELINE PERFORMANCE

3.1 PROJECT PHASING

The WLC project will be built out over a 20-year period. For purposes of this analysis, it was assumed that there will be a total of 27 distribution centers, each of approximately 1.5 M ft^2, planned for construction completion by 2040. Fifteen of the 27 buildings will be built during Phase 1 (2020-2025) with the remaining 12 buildings being constructed during Phase 2 (2025 – 2040). When complete, WLC will total approximately 40.6 M ft^2 of floor area.

Based on the distribution centers that currently exist within the MVU service territory, this analysis assumes that about 11% of the WLC buildings will feature air-conditioned warehouses. No refrigerated warehouses were included.

The complete phasing schedule is detailed in Table 2.

Table 2: WLC phasing schedule

		Unconditioned	Air-Conditioned	Total
Phase 1 2020 - 2025	**Number of Buildings**	13	2	15
	Floor Area (ft^2)	19.55 M	3.01 M	22.56 M
Phase 2 2025 - 2040	**Number of Buildings**	11	1	12
	Floor Area (ft^2)	16.54 M	1.5 M	18.04 M
Full Buildout	**Number of Buildings**	24	3	27
	Floor Area (ft^2)	36.09 M	4.51 M	40.6 M

3.2 PROTOTYPE BUILDINGS

WSP developed Title 24-compliant energy models for air-conditioned and unconditioned prototype buildings. Each model contains details about building construction; lighting systems and controls; heating, ventilating, and air-conditioning (HVAC) systems and controls; and office equipment. The prototype buildings were created based on the building space usages, floor areas, and operating schedules specified in Table 3.

Table 3: Prototype building characteristics

Primary Usage	Area Breakdown		Operating Schedule		
	Area (ft^2)	Percent	Weekdays	Saturday	Sunday/Holiday
Office	60,144	4%	8:00 AM – 6:00 PM	Not Operational	Not Operational
Warehouse	1,443,556	96%	8:00 AM – 12:00 AM	8:00 AM – 4:00 PM	Not Operational
Whole Building	**1,503,700**	**100%**			

As-built construction drawings and actual metered electricity usage data for the existing Skechers building and a sample of other distribution center buildings in the MVU territory were used to estimate the process loads (such as electric forklifts and conveyance systems) within the warehouses. The process loads were extracted from hourly metered data by subtracting the lighting and HVAC loads produced by the baseline building energy models. The resulting estimate of process equipment electricity usage was spot-checked against actual metered data collected by MVU on select Skechers forklift battery chargers and conveyance motors. This estimated process load data was adjusted to account for WLC's projected operating schedule and then used as inputs to the prototype models.

The air-conditioned and unconditioned prototype models were then driven with Moreno Valley long-term average weather data to produce the baseline annual hourly building energy loads against which the energy demand-side options and the energy supply-side options were evaluated (see Sections 4 and 5).

Figure 2 details monthly energy consumption for both the air-conditioned and unconditioned warehouses. Lighting and equipment is responsible for most of the energy consumption, even in the air-conditioned warehouses. Energy usage in the air-conditioned warehouses is highest during the winter months with natural gas representing 30% of the monthly energy consumption. In contrast, the unconditioned warehouse shows little seasonal variation. *Note that the Title 24-compliant buildings use natural gas for space heating and for domestic hot water.*

Figure 2: Baseline monthly energy consumption

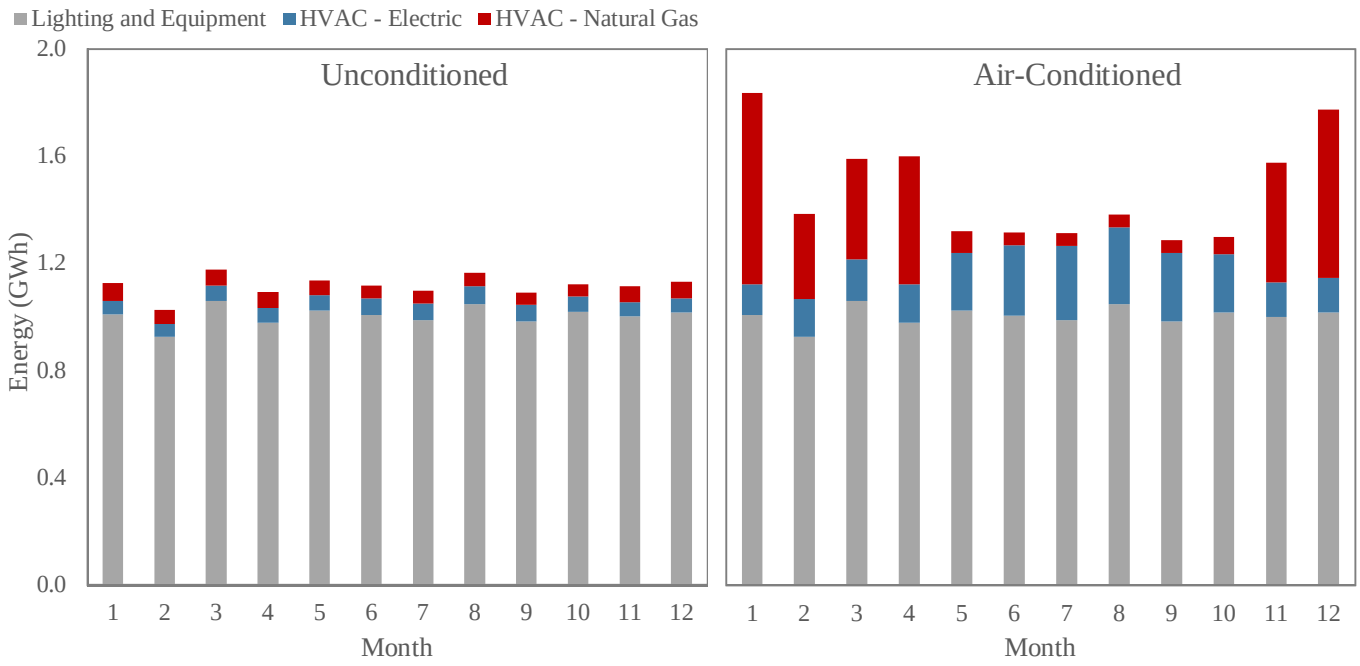
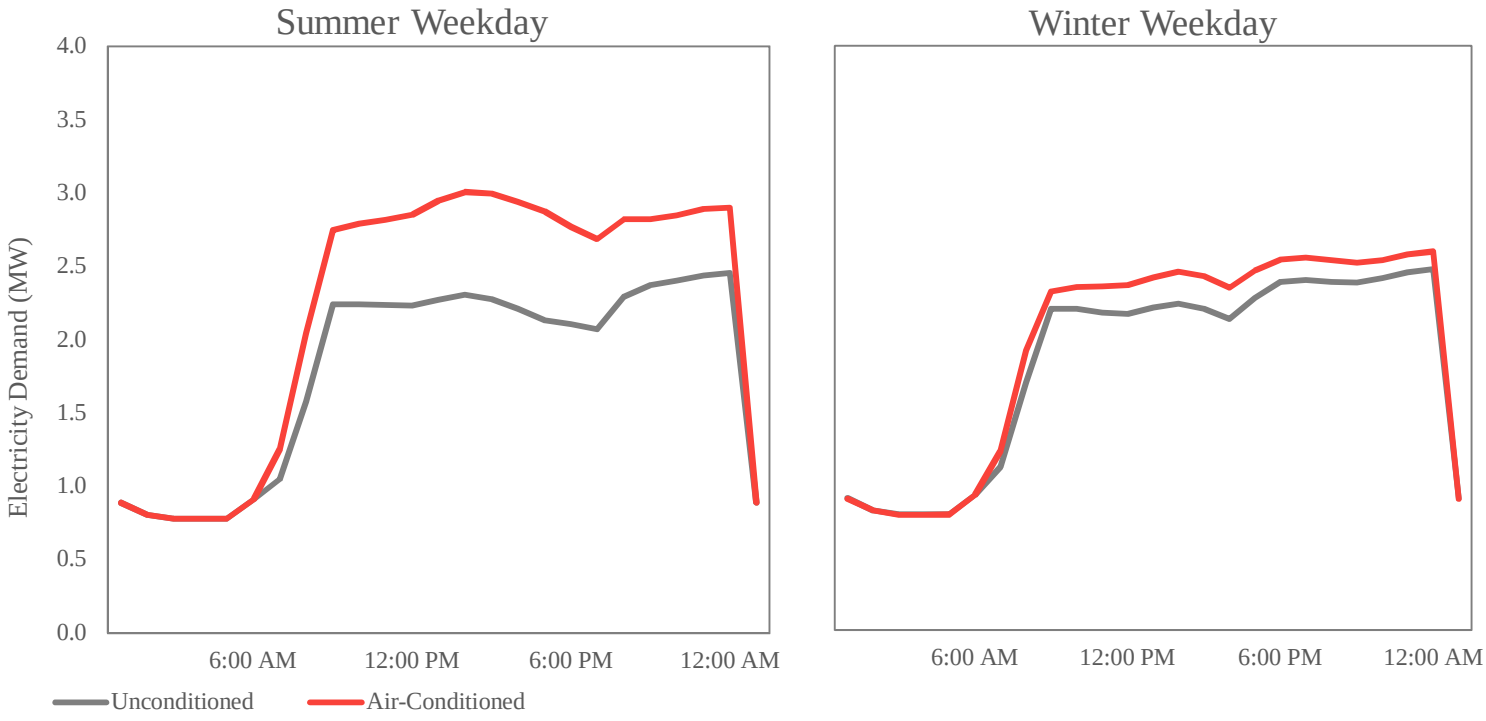


Figure 3 details an average weekday electric load profile projected for the Phase 1 unconditioned and air-conditioned WLC buildings during the summer and winter. As anticipated, the warehouse's operating schedule determines the shape of the load profiles. Demand quickly ramps up during the start of the 8:00 AM shifts and then remains relatively flat for the rest of the day. There is a small dip around 6:00 PM when the office schedule ends but the major drop happens at 12:00 AM when the warehouse shift ends. The need for air conditioning adds to the air-conditioned warehouse demand during the summer while there is little difference between the unconditioned and air-conditioned warehouses during the winter.

Figure 3: Average weekday electric load profiles for Phase 1 buildings



The peak electric demand for each of the 13 Phase 1 buildings with an unconditioned warehouse is projected to be about 2.1 MW, including estimated EV charging loads. The peak for each of the two Phase 1 buildings with air-conditioned warehouses is projected to be about 4.1 MW. Total aggregated peak demand at the end of Phase 1 construction is projected to be approximately 34.9 MW across 13 buildings with unconditioned warehouses and two buildings with air-conditioned warehouses. *Note that these are peak demand values as opposed to the average demand values depicted in Figure 3.*

For Phase 2, the peak electric demand for each of the 11 Phase 2 buildings with an unconditioned warehouse is projected to be about 3.7 MW, including the substantially greater EV charging loads that are projected for the 2025 – 2040 Phase 2 period. The peak for the one Phase 2 building with an air-conditioned warehouse is projected to be about 5.4 MW. Total aggregated peak demand at full build-out is projected to be approximately 58.2 MW across 24 buildings with unconditioned warehouses and three buildings with air-conditioned warehouses.

3.3 ELECTRIC VEHICLES

In addition to building energy consumption, electric vehicles are expected to contribute significantly to the electricity demand and consumption at the WLC. For this analysis, electric vehicle (EV) demand and consumption were calculated based on Title 24 code requirements, vehicle traffic, battery sizes, and anticipated charging requirements. Only passenger EVs and light-duty truck EVs were considered. No medium-duty or heavy-duty trucks were included since current code is silent on these vehicle classes. The resulting hourly data was then added to the building model outputs to create combined load profiles.

Peak EV charging rate was estimated by allocating the annual electricity consumption of EVs – the average daily consumption multiplied by 365 – on an hourly basis per the building operating schedules. Specifically, EV charging was assumed to follow the same hourly schedule as that of the building interior lighting and process loads. Logically, when the lights are on and the process equipment is operating, staff are on duty and the vehicles that brought them to the building are parked in the parking lot. The annual EV electricity usage was allocated across each week day and each weekend day such that the hourly EV load shape tracked the lighting and process load shape all year long.

The resulting peak electric load imposed by EV charging is about 25% of the aggregate nameplate capacity of all charging stations. This result is in line with industry expectations that charging blocks managed with automated 'smart' controls will reduce the coincident peak demand to 20-25% of the aggregate capacity of the individual charging stations. So for example, when all charging stations of a 100 kW-rated charging block are plugged into EVs, the block is expected to experience a maximum power draw of only about 25 kW at any point in time.

The incremental EV charging loads projected for WLC determine the peak and the minimum daytime electric loads on each building. The daytime minimum defines the maximum amount of PV that MVU's rules allow on each building's roof. See Section 5.4 for details.

3.4 BASELINE ENERGY PERFORMANCE

Because of the anticipated improvements in building energy performance and the expected rise of electric vehicles, Phase 2 models were adjusted to 2040 conditions. The electric vehicle load is expected to increase 20-fold during Phase 2 while the average Title 24-compliant building energy consumption is expected to decrease by about 13% in Phase 2. The breakdown of energy usage intensity (kWh/ft^2-yr) is shown in Table 4 for Phase 1 and Phase 2 buildings with unconditioned and air-conditioned warehouses.

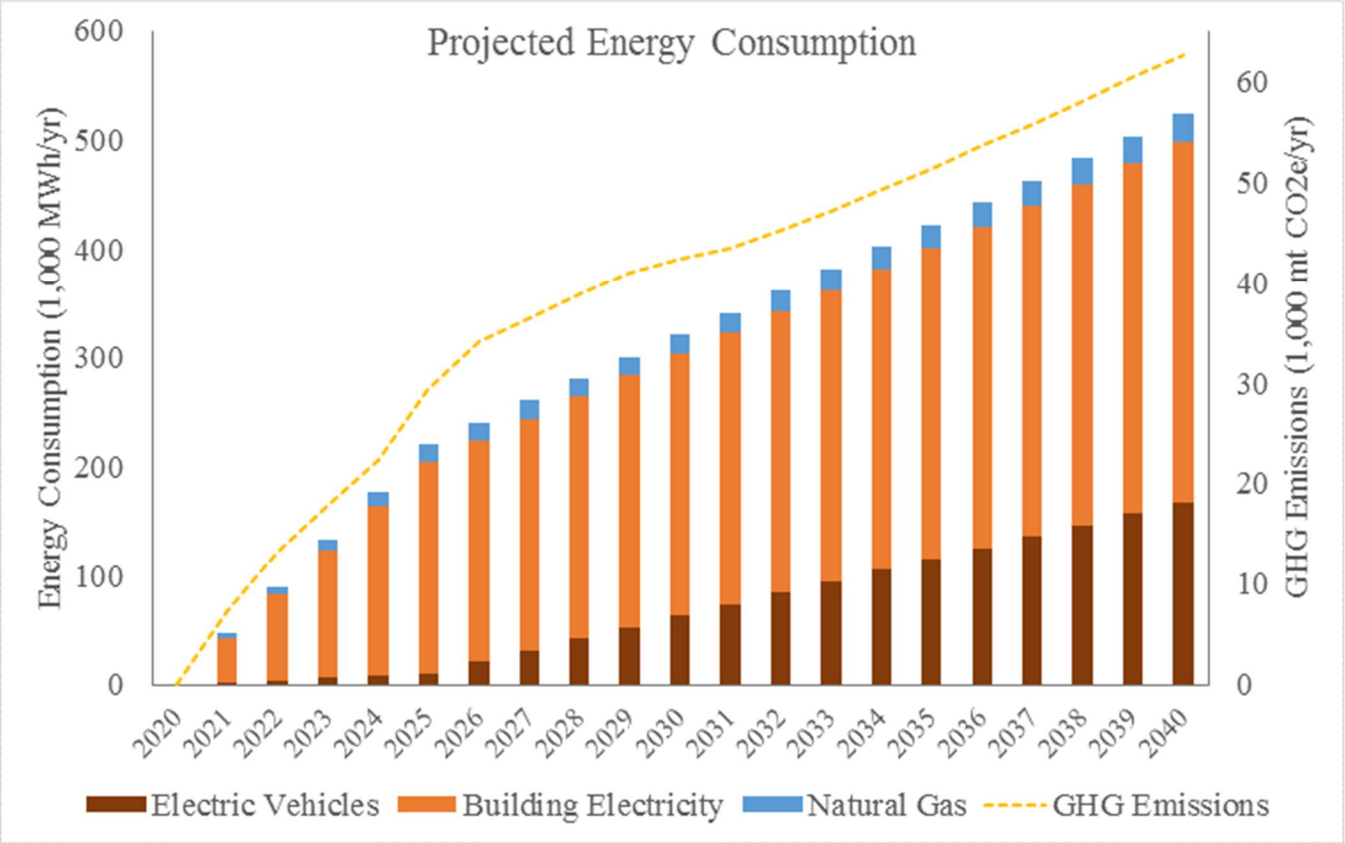
Table 4: Breakdown of energy usage intensity (kWh/ft^2-yr) for Title 24-compliant buildings

End Use	Phase 1		Phase 2	
	Unconditioned	Air-Conditioned	Unconditioned	Air-Conditioned
Equipment and Lighting	8.02	8.02	7.08	7.08
HVAC	0.88	3.73	0.81	3.43
Building Total	8.90	11.75	7.88	10.51
Electric Vehicles	0.48	0.48	9.66	9.66
TOTAL	**9.38**	**12.23**	**17.55**	**20.17**

3.5 WLC ENERGY PROJECTIONS

Based on the results of the energy modeling and electric vehicle load definitions, the Title 24-compliant annual energy consumption and GHG emissions profile shown in the following figure were derived for the WLC over the buildout of the project. This projection considers expected changes to California's electric grid (ever-increasing amounts of renewable electricity in the mix) as well as the estimated increased penetration of passenger EVs and light-duty truck EVs at WLC in future years.

Figure 4: Projected Title 24-compliant annual energy consumption and GHG emissions of WLC over build-out period



4 DEMAND-SIDE ENERGY ANALYSIS

4.1 RECOMMENDED MEASURES

Energy efficiency is often the most cost-effective method to reduce the energy and carbon impacts of a building. Regulatory constraints limiting the capacity of on-site renewables that can be implemented at the WLC, outlined further in Section 5: Supply-Side Energy Strategy, further highlight the importance of reducing energy consumption through demand-side measures.

Using the baseline energy models discussed in Section 3: Baseline Performance, WSP evaluated a wide range of energy conservation measures (ECMs) to identify the most cost-effective set for reducing building energy consumption and related emissions beyond Title 24 energy code. The engineering analysis underpinning this proposal led WSP to reject some of the evaluated demand-side options because they are duplicative with other more advantageous options or are incompatible with the most advantageous HVAC systems. The ECMs outlined in Table 5 are the best choice for the WLC based on maximizing environmental protections in the most cost-effective manner practical.

The ECMs address internal loads, such as lighting and equipment, as well as the energy required to provide heating, cooling, and domestic hot water. While most energy consumption is due to lighting and equipment loads, there is still an opportunity to reduce the amount of energy required to provide heating and cooling for the buildings. For the office space, the recommended system is underfloor air distribution coupled with water-cooled variable refrigerant flow (VRF) technology that is served by a shared water loop. The shared water loop allows for sharing of energy among zones so that if one zone requires heating while another requires cooling, energy can be transferred between zones resulting in built-in energy recovery. If additional cooling is needed during extremely warm weather, a cooling tower provides supplemental heat rejection to the atmosphere.

Air-conditioned warehouse spaces are recommended to be served by displacement ventilation whereby conditioned air is delivered at low velocity from air diffusers near floor level. Cooling of supply air is achieved via direct evaporative cooling sections that deliver sufficiently cool air at required warehouse conditions for most hours during the typical weather year. During hours that evaporative cooling doesn't meet the cooling load or doesn't maintain acceptable relative humidity in the warehouse, VRF systems are utilized for supplemental space cooling. The shared water loop of the warehouse VRF systems is connected to an air-to-water heat pump to provide supplemental cooling via heat rejection to the atmosphere. When heating requirements exceed the heat recovered within the shared water loop by the VRF units, supplemental heat for the water loop is extracted from the atmosphere by the same air-to-water heat pump running in reverse.

Because all heating and cooling in the buildings is provided via direct evaporative cooling and heat pumps, natural gas is not required. This allows the WLC to eliminate on-site fossil fuel combustion that would normally be associated with service water and space heating, thereby eliminating associated air emissions. Additionally, in all-electric buildings there is not a need for natural gas distribution infrastructure. Cleaner options could be considered by WLC tenants to fuel back-up generators, including E85 (85% ethanol, 15% gasoline), biodiesel, propane, and batteries. SCAQMD discusses permitted emergency generation at http://www.aqmd.gov/home/permits/emergency-generators#Fact1.

The WLC Specific Plan has previously publicly committed to certain energy efficiency features that will appear in the WLC buildings. The ECMs in Table 5 go substantially beyond that previous commitment in terms of the features of the buildings. They individually and collectively, in addition to the HVAC systems recommended above, reduce the amount of energy consumed by the various equipment that the buildings will contain. This package of ECMs delivers energy performance that exceeds minimal compliance with current Title 24 requirements by 16-17%. Table 6 summarizes the energy performance of the ECM package.

Table 5: ECM Descriptions

Category	ECM Description	Application Area
Envelope	Optimal Choice of Vertical Fenestration Construction	All
	Optimal Choice of Skylight Construction	Warehouse
	Optimal Window to Wall Ratio	All
	Optimal Skylight to Roof Ratio	Warehouse
Exterior Loads	LED exterior lighting	All
	Daylight sensor based exterior lighting	All
Internal Equip. Loads	Automatic Receptacle Control	Office
	Highest Efficiency Office Equipment	Office
	Highest Efficiency Other Internal Loads	Office
Lighting	Multi-Level Switching	All
	High Performance Lighting (LED)	All
	Use separate controls for lighting areas near windows	All
	Occupant sensors	Office
Daylighting	High-on-wall continuous daylighting windows/clerestory windows	Warehouse
	Optimal Daylighting Control	All
	Dimming daylight controls	Office
HVAC	Thermostat setback/setup	Office
	Shut off outdoor air and exhaust air dampers during unoccupied periods	Office
	Supply air temperature reset	Office
	High Performance Fans	All
	Variable Speed Fans	Office
	High efficiency pumps	All
	Variable Speed Pump motors	All
	Reduce service water consumption	All
	Efficient service water pumping	All
	Integrated and optimized air side economizer	Office
	Direct Evaporative Cooling	Warehouse
	Variable refrigerant flow heat pump & cooling	Office
	Dedicated Outside Air System Ventilation with Heat Recovery	Office
	Demand controlled ventilation/CO_2 controls	Office

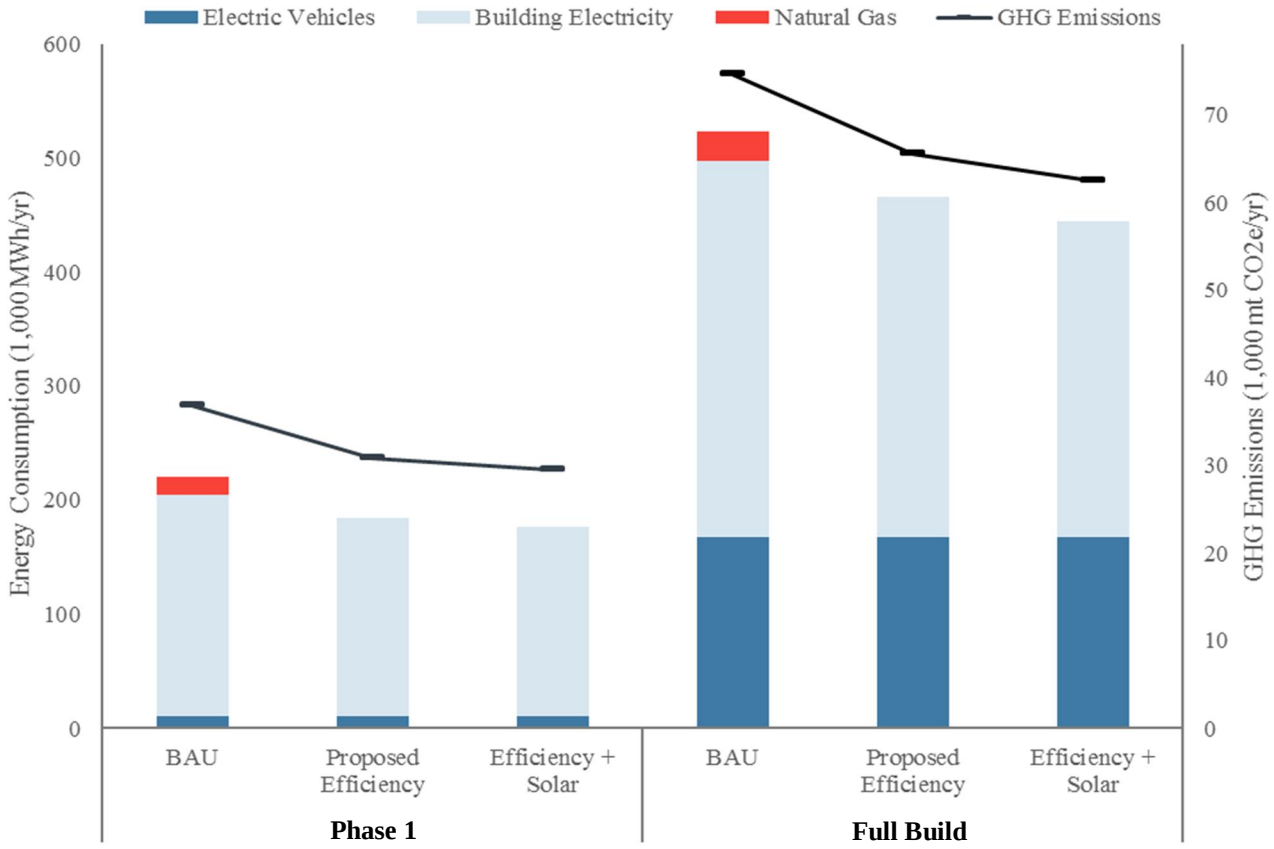
Table 6: Efficiency Scenario Performance

Stage	Energy Savings (MWh/yr)	Energy Savings (%)	GHG Savings (tonnes CO_2e/yr)	GHG Savings (%)	Renewable Energy Supply (%)*
Phase 1	34,892	16.7%	6,019	10%	49%
Full build	57,449	16.2%	9,085	18%	55%

*Renewable energy fraction takes account of renewables on the California grid

The impact of the recommended ECMs on the annual energy consumption and GHG emissions of the WLC at the end of Phase 1 is shown in Figure 5.

Figure 5: Phase 1 and Full Build-Out Energy and GHG Results



4.2 TENANT LOADS

It is unknown at this time who will be the tenants within the WLC buildings. Warehouse operations could vary widely, from relatively low-energy operations featuring high-pile goods storage and materials to relatively high-energy operations featuring highly automated facilities with extensive material handling equipment. WSP's analysis assumes the typical WLC tenant will have highly automated warehouse operations. Because the WLC developer has no direct control over warehouse equipment and operations, the ECM analysis did not consider any opportunities to reduce energy usage by warehouse equipment.

5 SUPPLY-SIDE ENERGY STRATEGY

5.1 ENERGY SUPPLY SCREENING

As a preliminary step in developing a sustainable energy strategy for WLC, WSP has undertaken a high-level screening analysis of renewable energy technologies. The purpose is to identify feasible supply options. The screening criteria used in this exercise are categorized in the matrix below as Carbon, Resiliency, Financial, Technical, and Regulatory:

Table 7: Screening Criteria Matrix

Screening Criteria	✓	✕	—
Carbon	Net carbon emissions will be reduced	Net carbon emissions will not be reduced	Effect on net carbon emissions is unclear without analysis
Resiliency	Energy resiliency will be enhanced	Energy resiliency will not be enhanced	Effect on energy resiliency is unclear without analysis
Financial	Financial performance will likely be attractive	Financial performance will likely be unattractive	Financial performance is unclear without analysis
Technical	No anticipated technical challenges	Technical challenges are expected	Existence of technical challenges is unclear without analysis
Regulatory	No anticipated regulatory challenges	Regulatory challenges are expected	Existence of regulatory challenges is unclear without analysis

Incorporating high-performance energy efficiency into the WLC is the least-cost sustainable energy resource available and, thus, should be the first step in reducing energy demand and greenhouse gas (GHG) emissions. Furthermore, improving the energy efficiency of the buildings will reduce the additional electrical distribution capacity that must be built to supply the WLC, and MVU may be able to avoid associated substation, transformer, and local distribution capital costs. WLC has committed to achieve energy efficiency 10% better than 2008 Title 24 code or the most current code at the time of construction, whichever is more efficient. Additional, cost effective efficiency improvements are possible through adoption of additional available energy efficiency opportunities identified by the Energy Demand Side Analysis task (see Section 5 of this report).

In the business-as-usual (BAU) scenario, each warehouse will be served by 12 kV service from the Moreno Valley Electric Utility (MVU). Currently the WLC developer intends to own the buildings. However, under certain circumstance, the developer may wish to sell portions of an individual building or an entire building. In any case, the developer expects that the building occupants will be responsible for paying utility bills.

The figure below shows the results of the high-level qualitative screening analysis.

Table 8: Energy Resources Screening Results

Supply Option	Screening Criteria				
	Carbon	Resiliency	Financial	Technical	Regulatory
Recommended for further investigation:					
Combined Cooling, Heat and Power (CCHP)	—	✓	✓	✓	—
Ground Source Heat Pump (GSHP)	✓	—	—	—	✓
Solar photovoltaic (PV)	✓	—	—	✓	✓
Solar PV + battery	✓	✓	—	✓	✓
Off-site procurement	—	—	✓	✓	—
Not recommended for further investigation:					
Biomass	✓	✓	—	✗	✗
Biogas/landfill gas	✓	✓	—	✗	—
District energy	✓	✓	✗	✗	—
In-line hydro	✓	✓	—	✗	—
Microgrid	✓	✓	✗	✓	✗
Natural gas pressure recovery	✓	✓	—	✗	—
Wind	✓	—	—	✗	✗

The WLC build-out cycle will occur over 20 years. The evident trends in the decreasing capital cost and the increasing efficiency over time of PV, batteries, lighting technology, and controls technology have been considered and are reflected in the analyses underpinning the comparison of renewable energy technologies.

Energy supply options that warrant further investigation are discussed in sections 5.3 – 5.6. These investigations were conducted using the HOMER energy modeling software. Several supply options were removed from consideration and are discussed briefly described below.

Biomass:

Biomass systems replace conventional fuel boilers with boilers that burn biofuels, such as agricultural residues, forest and mill residues, and urban wood waste. Biomass systems can be used to generate heat only, or, generate both heat and electricity. Because WLC is expected to have minimal heating loads, the most advantageous configuration would be to use biomass to generate electricity and potentially heat for use in an absorption chiller.

An analysis using National Renewable Energy Lab's System Advisor Model found that there are limited biomass resources available within a 50-mile radius of WLC, enough for roughly 11 MW of generating capacity, and that these resources primarily consist of urban wood waste. Due to the logistical complexity of obtaining and ensuring sufficient feedstock and concerns about criteria pollutant emissions, specifically NO_x in this SCAQMD air shed, WSP has not given biomass further consideration.

Biogas/landfill gas:

Biogas is a methane-rich gas, similar to natural gas, that can be generated from wastewater treatment plants, landfills, and anaerobic digesters. Biogas could potentially be sourced from the Badlands Landfill, which is less than a mile north of the planned site of WLC. However, the amount of gas presently being captured at the landfill is relatively small – 1.3 million cubic feet per day, which is sufficient to generate roughly 2 MW of electricity. Much of the gas is already being used to generate electricity at the Badlands Landfill[1]. Therefore, WSP has not given further consideration to the direct use of biogas.

District energy:

District energy distribution is a common approach for supplying both heating and cooling energy to universities, medical and military campuses, and urban areas. District energy can be a tool for achieving GHG and energy use reductions by serving buildings with centralized, high-efficiency equipment instead of distributed, less efficient systems. District energy systems can open the opportunity to recover heat rejection from one building to be used as a heat source in another building. Lastly, district energy systems can reduce the overall plant equipment installed in the district, since diversity (not all buildings peak at the same time) and back-up systems can be centralized.

However, the benefits mentioned above are best realized by dense development with a large building diversity, i.e. a mixture of commercial, community, residential, and retail space. In the WLC, it is expected that the buildings will have similar loads, therefore reducing the potential for capital savings to be unlocked by a district energy system's ability to exploit high demand diversity on the customer side. While there are no technical constraints to district energy, most of the warehouses are unconditioned and so the distance between air-conditioned spaces in the WLC makes the cost of installing a district energy distribution system prohibitively expensive.

In addition, SCAQMD air quality standards are greatly exceeded by current air pollution levels in the WLC air shed. District energy systems that are energized by the combustion of fuels will exacerbate the already untenable local air quality and so are not given further consideration. District energy energized by electrically driven heat pumps are discussed in Section 5.2 below.

In-line hydro:

WSP understands that a 145-inch diameter water transmission pipeline, owned by the California Aqueduct/Metropolitan Water District, crosses the project area. In-line turbines can be used to generate electricity from water flowing through transmission pipelines. While this offers the opportunity for zero-carbon electricity to be generated at WLC, the generation potential is expected to be small and complexity relatively high. Therefore, WSP did not give further consideration to in-line hydro.

Microgrid:

Microgrids are local electricity distribution systems that can be "islanded", ie, they can operate independently of the regional grid when the latter experiences a failure. The resiliency provided by microgrids can sustain operations that are mission-critical. Such resilience can also greatly benefit operations that value the ability to continue operating in the face of a grid interruption. However, electricity distribution regulations preclude delivery of electric power across public rights-of-way by any entity besides the utility. Furthermore, MVU is currently precluded from owning/operating generation assets. Finally, the extra expense of the specialized microgrid equipment causes microgrid economics to favor high-density collections of buildings, such as urban districts and campuses. The layout of WLC and MVU restrictions only accommodate small clusters of buildings, perhaps two or three buildings. At this scale, a microgrid is impractical and so WSP has not given microgrids further consideration.

Natural gas pressure recovery:

Several high-pressure natural gas pipelines cross the property. These can be used to generate electricity by dropping the high pressure in the pipes down to local distribution pressure through expansion turbines. There are strict rules and safety standards governing the natural gas transmission facilities. While this offers the opportunity for zero-carbon electricity to be

[1] EPA's LMOP database, *Landfill- and project-level data (2018).xlsx*, February 2018.

generated at WLC, the generation potential is expected to be small and complexity relatively high. Therefore, WSP has not given further consideration to natural gas pressure recovery.

Wind:

The annual average wind speed in Moreno Valley is relatively low[2]. In addition, while utility-scale wind farms are very cost competitive, smaller-scale wind technology deployments are less so. Furthermore, on-site deployment of wind turbines would likely face opposition by regulators and the public over safety and noise concerns. For these reasons, WSP has not given further consideration to on-site wind.

5.2 GROUND-SOURCE HEAT PUMP

A ground-source heat pump (GSHP) plant uses a reversible chiller (heat pump) to provide both heating and cooling to the building(s) being served. Typically, a ground loop consisting of a field of vertical geo-exchange boreholes (300-600 ft deep) is drilled below the lowest parking level of the site. Other configurations, such as foundation- and slab-integrated exchange fields, have been used successfully in numerous locations.

Under the right conditions, these systems can provide improved heating and cooling performance seasonally compared to an air-source heat pump or traditional natural gas or electric resistance heating. Furthermore, they can eliminate noise, rooftop equipment, and cooling towers and associated water use. GSHP heating and cooling is one means to make the transition to an all-electric energy profile, thereby creating a possible pathway for WLC to eventually offer buildings with the potential to be powered by 100% renewable energy.

However, GSHP is not recommended in the WLC location due to building space cooling requirements being much greater than space heating needs. Such an imbalance would cause the geo-exchange field to grow increasingly warmer over time. This, in turn, would degrade GSHP performance in providing building space cooling. For this reason, VRF reversible heat pumps are recommended for offices and air-conditioned warehouses. These systems also create a possible pathway for WLC to eventually offer buildings with the potential to be powered by 100% renewable energy.

5.3 FUEL CELL COMBINED COOLING, HEAT, AND POWER

CCHP plants generate electricity and useful thermal energy through the capture of waste heat. Combined heat and power plants (CHP) supply thermal energy as heat and combined cooling heat and power plants (CCHP) provide thermal energy as both heating and cooling, the latter by means of an absorption chiller. Making use of waste heat from electricity generation increases the overall efficiency of the plant.

WSP evaluated the suitability for CCHP – using a fuel cell as primary plant equipment – to reduce lifetime GHG emissions from the WLC. While fuel cells are costlier than combustion turbines and reciprocating engines (the CCHP primary equipment alternatives), they have the advantage of dramatically lowering NO_x emissions, which is an important criterion in this SCAQMD air shed.

Because the California electricity grid features so much renewable energy and is therefore so clean, and getting cleaner every year, on-site electricity generation by CCHP, energized by natural gas-fed fuel cells, actually produces more GHG emissions and requires more overall energy consumption when compared to WLC receiving all required energy from the grid.

While fuel cells offer an advantage through shifting energy usage from electricity to cheaper natural gas, they would increase site energy consumption and GHG emissions compared to the base case while decreasing the percentage of renewables in the WLC's energy supply due to decreased use of cleaner grid electricity. Because California's grid electricity already contains a high percentage of renewable electricity, it is less carbon intensive than the electricity generated by a fuel cell. While fuel cells are more efficient than the natural gas-fired power plants that operate during periods of peak power demand on the

[2] Wind resource estimates developed by AWS Truepower, LLC for windNavigator . Web: http://www.windnavigator.com | http://www.awstruepower.com. Spatial resolution of wind resource data: 2.5 km. Projection: UTM Zone 11 WGS84.

California grid, the long-term expectation of the California Energy Commission and EIA is that the majority of new capacity in California will come from renewables, not from gas-fired plants. Considering this, using generating capacity at WLC that relies on natural gas, even if it is efficient fuel cells, will increase WLC emissions.

Table 9 summarizes the performance of fuel cell CCHP at WLC. Negative values indicate net increases compared to baseline.

Table 9: Fuel Cell CCHP Performance

Stage	Energy Savings (MWh/yr)	Energy Savings (%)	GHG Savings (tonnes CO_2e/yr)	GHG Savings (%)	Renewable Energy Supply (%)*
Phase 1	-95,739	-52%	-18,425	-60%	19%
Full build	-240,849	-52%	-50,888	-78%	21%

*Renewable energy fraction takes account of renewables on the California grid

5.4 SOLAR PV

On-site solar PV generation is scalable, becoming more cost competitive as project size increases, and can thus be a foundational component of WLC's sustainable energy strategy. Understanding available options and trade-offs is important to optimize the use of solar at WLC. WSP has analyzed the feasibility and impact of on-site solar at the WLC, considering the trade-offs between roof- and ground-mounted solar and current and future electric rate structures.

As pointed out in Section 2.2.1, MVU limits on-site PV size to one-half the minimum electric demand a building experiences during daytime hours. To determine the specific allowable PV size, WSP analyzed the hourly electric loads simulated using the IES modeling software. Phase 1 building simulation produced a minimum daytime electric load of about 600 kW. The minimum daytime electric load for Phase 2 buildings was simulated to be about 1,600 kW. Thus, to stay within all the constraints facing the WLC project, Phase 1 buildings can feature 300 kW of PV (one-half the 600 kW minimum daytime electric load) and Phase 2 buildings can feature 800 kW. At these PV system sizes, a total of 4.5 MW of PV capacity would exist at WLC at the end of Phase 1 and a total of 14.1 MW of PV capacity would exist at WLC at full build-out.

The WLC Specific Plan commits to meet the annual energy requirements of all office spaces with PV, thereby effectively achieving net-zero energy (NZE) office operations. Since each individual WLC building is expected to feature about 60,000 sqft of office space, this is the equivalent of fifteen 60,000 square-foot office buildings at WLC achieving NZE consumption by 2025. The entire state of California has about 30 NZE office buildings in operation, under construction, or publicly committed as of 2016[3]. Thus, the WLC Specific Plan will grow California's NZE office population by about 50% by 2025. At full WLC build-out there will be the equivalent of twenty seven 60,000 square-foot office buildings achieving NZE status.

WSP estimates that the offices in each typical WLC building will consume about 474,120 kWh/yr and experience peak electric demand of about 280 kW. The maximum allowed amount of PV capacity/building in Phase 1 (300 kW) will generate about 512,275 kWh/yr at the WLC location. The maximum allowed amount of PV capacity/building in Phase 2 (800 kW) will generate about 1,366,400 kWh/yr. Thus, in all cases, the maximum allowed PV capacities are sufficient in both Phase 1 and Phase 2 to satisfy 100% of the office energy needs, thereby meeting the NZE objective for WLC office space.

[3] New Buildings Institute, 2016 List of Zero Net Energy Buildings

Table 10 summarizes the performance of solar PV at WLC in the amounts allowed by MVU.

Table 10: Solar PV Performance

Stage	Energy Savings (MWh/yr)	Energy Savings (%)	GHG Savings (tonnes CO_2e/yr)	GHG Savings (%)	Renewable Energy Supply (%)*
Phase 1	7,686	4%	1,276	4%	51%
Full build	24,083	5%	3,386	5%	57%

*Renewable energy fraction takes account of renewables on the California grid

5.5 ENERGY STORAGE

Energy storage using either Lithium-ion batteries or Vehicle-to-Grid technology (see below) is not viable under current regulatory and economic conditions. For example, MVU currently has no policies or rules that would allow WLC to use battery storage to increase usage of solar electricity. However, these conditions may change. In the future, energy storage may help:

- maximize direct use of on-site renewable electricity generation,
- optimize the building's demand curve ("peak shaving") to reduce strain on the electric grid and lower WLC tenant demand charges,
- shift WLC on-site electricity generation to time-of-use periods with lower electricity rates ("load shifting").

5.5.1 LITHIUM-ION BATTERIES

Lithium-ion (Li-ion) batteries can connect to electrical systems and store electricity. Because of the MVU solar sizing limit, there is no excess solar generation available to charge a battery with the Phase 1 and Phase 2 300 kW and 800 kW solar systems. In addition, MVU currently disallows the use of batteries to get around the PV size limits by enabling the generation and storage of excess solar output without feeding power to MVU's system. Consequently, greater renewable energy penetration at WLC is not currently possible. Further, MVU's rate structures, combined with WLC's load characteristics, make battery integration unviable – MVU's Time-of-Use rates do not match up with WLC's peak electric usage and WLC's electric load profiles are not 'spikey' enough for batteries to deliver meaningful reductions in the electric demand charge.

5.5.2 VEHICLE-TO-GRID

This section is included in the report for completeness of the energy storage discussion. Vehicle-to-grid (V2G) technology is not currently available but is expected to become available at some point during WLC build-out period.

A V2G system uses the on-board battery packs of parked electric vehicles as distributed energy resources to store electricity for use during peak electricity demand periods. Smart controls on EV charging stations will enable each EV owner to decide whether or not to allow V2G charging and discharging of the EV's battery pack. MVU rules and rate structures would need to change to accommodate V2G technology and to incentivize EV owners to make their vehicle's batteries available while the vehicle is parked.

Vehicle manufactures currently do not enable 2-way V2G exchanges of electricity, but this is expected to change in the coming years. Like stationary Li-ion batteries, V2G could be used by WLC in the future to maximize use of on-site renewable electricity and perform peak-shaving and load-shifting functions if MVU's rules and rate structures were to change. Electric vehicle population estimates for WLC suggest that significant amounts of potential V2G storage would be available for Phase 1 if electricity exchanges were enabled. With the anticipated proliferation of electric vehicles, V2G

storage potential will increase substantially for Phase 2. Should V2G technology be enabled in the future, it should be investigated.

5.6 OFF-SITE RENEWABLE ENERGY PROCUREMENT

Various mechanisms exist for many electricity customers to procure renewable energy from off-site projects, including renewable energy certificates, green tariffs, power purchase agreements, virtual power purchase agreements, community choice aggregation, and directed biogas. Procurement of off-site renewable energy can hedge against energy cost fluctuations, support the development of new renewable energy projects, and allow electricity consumers to claim the environmental benefits associated with the renewable energy generation. However, off-site procurement of renewable energy does not reduce the consumers' reliance on the electric grid to transport electricity nor the natural gas grid to transport biogas. Furthermore, off-site renewable energy procurement is likely to come at a cost premium to the energy end-user.

Under current regulations, WLC tenants will be able to purchase electricity only from MVU. Should electricity regulations change in the future to allow procurement of off-site renewable energy, and should WLC tenants elect for corporate, marketing, or other reasons to pursue procurement of off-site renewable energy, the means of doing so via one of the means presented in this report may become available to them.

The price premium associated with off-site renewable energy procurement would increase WLC tenant utility costs and thus run counter to the Project Objectives and the City's Economic Development Objectives (see Section 3.6 of the Project Final EIR and Section 1.3.1 of the WLC Specific Plan). Even if regulations allowed it, it would be counterproductive to require WLC tenants to procure renewable energy from off-site sources. Rather, WLC must establish and maintain a competitive position that supports achievement of the Project and City objectives. For these reasons, the concept of requiring a tenant to procure off-site renewable energy was not considered a viable sustainable supply option to impose on the Project. However, for the sake of completeness, WSP has evaluated the means for off-site procurement of renewable energy at WLC. We herein describe multiple off-site renewable electricity procurement methods that are available in many other electric utility service territories. These include:

- Unbundled renewable energy certificates (RECs);
- Power purchase agreements (PPAs);
- Community choice aggregation (CCA);
- Green tariffs.

Each option is evaluated on the following criteria:

- Market credibility;
- Relevance to future zero net energy regulations expected to be implemented in California;
- Risk profile;
- Impact on lifetime energy costs of the development.

Pricing of green power is highly variable depending on the particular circumstances surrounding each individual project or the current pricing offered by commodities markets. Thus, it is impossible to estimate with any accuracy what might be the impact on overall WLC energy costs if green power were part of the equation. The discussions below present some limited indications of possible cost considerations. It would be prudent to assume that some amount of cost premium would come with green power. To the extent this is the case, the resulting higher electricity costs would run counter to the strategic objective of the City of Moreno Valley to use low-cost electricity as an economic development tool.

5.6.1 BACKGROUND INFORMATION

RENEWABLE ENERGY CLAIMS

Renewable electricity generation projects produce two products of interest; physical electricity and RECs. RECs are an important characteristic of green power to understand, because they are the mechanism that allows an organization to claim the renewable benefits of a green power project. The Environmental Protection Agency (EPA) defines a REC as the

representation of the property rights to the environmental, social, and other non-power qualities of one MWh of renewable electricity generation, which can be sold as a separate commodity from the electricity being produced by the renewable energy system.[4]

If RECs are sold together with their associated electricity, they are known as bundled RECs. If they are sold separately, they are known as unbundled RECs.

To be able to claim and communicate the renewable energy benefits from any green power, an organization must own and retire the RECs associated with the green power, or have the RECs retired on its behalf per the Federal Trade Commission's Green Guides.[5]

For all options evaluated herein other than unbundled RECs and Community Choice Aggregation, it is assumed the end purchaser of off-site renewable energy can claim ownership to the associated RECs per the FTC's guidelines.

ZERO ENERGY BUILDINGS IN CALIFORNIA

Relevant to this project, the California Energy Efficiency Strategic Plan indicates that "50% of commercial buildings will be retrofit to Zero Net Energy by 2030."[6] Zero Net Energy for the commercial sector being defined as "an energy-efficient building where, on a source-energy basis, the actual annual consumed energy is less than or equal to the on-site renewable generated energy." Source energy is all energy consumed on-site "plus the energy consumed in the extraction, processing and transport of primary fuels such as coal, oil and natural gas; energy losses in thermal combustion in power generation plants; and energy losses in transmission and distribution to the building site."[7]

For the purposes of this analysis, it is assumed that the California Energy Efficiency Strategic Plan is aligned with the U.S. Department of Energy (USDOE) definition of Zero Energy Buildings and the associated guidance in relation to the use of off-site energy in achieving zero energy status. USDOE guidance indicates that net zero energy status can be achieved through the purchase of off-site renewable electricity for energy efficient buildings that have maximized the installation of on-site renewable energy. The USDOE Zero Energy Building definition does not include specific guidance on what off-site renewable energy procurement mechanisms can be used toward net zero energy status.

5.6.2 UNBUNDLED RENEWABLE ENERGY CERTIFICATES (RECS)

An organization can directly purchase RECs that are unbundled from the electricity supply. When purchased as unbundled commodities, RECs provide no physical electricity to the purchaser. Instead, the purchaser will continue to contract with their utility for electricity generated by the region's grid mix (including non-renewable fuel sources), but purchase the environmental attributes from individual green power projects.

RECs may be purchased in regulated or deregulated markets, and across markets, providing renewable attributes to electricity use at facilities of choice, regardless of geography or local green power resources. However, because unbundled RECs are typically purchased from existing renewable energy projects, their impact on the development of new green power projects is not as direct or significant as with other green power procurement options. Unbundled RECs are typically available for a price premium of about 1% of the cost of physical power.

[4] https://www.epa.gov/greenpower/renewable-energy-certificates-recs
[5] https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguidesstatement.pdf
[6] http://www.cpuc.ca.gov/ZNE/
[7] https://www.energy.gov/sites/prod/files/2015/09/f26/bto_common_definition_zero_energy_buildings_093015.pdf

Table 11: Unbundled RECs.

CRITERIA	EVALUATION
Market credibility	Based on WSP's experience in the renewable energy marketplace through memberships such as Rocky Mountain Institute's (RMI's) Business Renewable Center, corporate renewable energy buyers are evolving their renewable energy procurement strategies to go beyond unbundled RECs. This evolution is due to the desire to have more of an impact on development of new renewable energy generation. Unbundled RECs typically come from renewable energy generation already in operation, and thus are perceived to have a lower impact on new generation.
Relevance to future zero net energy regulations expected to be implemented in California	Per USDOE, energy efficient buildings can achieve net-zero energy status using RECs if physical limitations preclude the building from fully meeting its energy demand with on-site renewables. These buildings can achieve net zero energy status with the "REC-ZEB" qualifier.WSP's opinion is that unbundled RECs would qualify under the current forecasted regulation only after the demand and supply side options outlined herein are implemented. It is uncertain whether the limitations on the size of on-site solar imposed by MVU would qualify the buildings in the WLC to achieve net zero status using RECs. Importantly, unbundled RECs are increasingly being considered low impact, and the leading governing bodies in the net zero energy space may require long-term contracts for such procurement. WSP is aware that market credibility is shifting away from unbundled RECs.
Risk profile	Purchasers of unbundled RECs are subject to spot pricing on an ongoing (e.g., annual) procurement cycle. There is no physical power risk associated with unbundled purchases.
Impact on lifetime energy costs of the project	There is no direct financial return on investment in purchasing unbundled RECs, nor does the purchase reduce vulnerability to future increases in electricity prices. Regardless if WLC tenants purchase unbundled RECs, there will be an increase to the energy costs of the project. Unbundled RECs are typically available for about 1% of the cost of physical power.

5.6.3 POWER PURCHASER AGREEMENTS (PPAs)

PPAs are contractual agreements used in the utility power sector for the long-term purchase of electricity produced by a specific project. For electricity producers, PPAs offer long-term revenue certainty with a credit-worthy purchaser that allows the project to attract capital investment. For electricity purchasers, PPAs offer a long-term supply of green power with price stability. In California, "Direct Access" agreements offer an alternative similar to a PPA, but using the utility as an intermediary. However, the program is currently at capacity and therefore not available to WLC tenants.[8]

Alternatively, WLC tenants may consider a virtual power purchase agreement (VPPA), also known as a synthetic PPA or "contract for differences." A VPPA is a financial swap that allows an electricity purchaser to provide financial and credit support to a project developer by setting a floor price for electricity sold by the project to the wholesale electricity market. If the wholesale price is below the floor price, the purchaser pays the developer the difference. If the wholesale price exceeds

[8] http://www.cpuc.ca.gov/General.aspx?id=7881

the floor price, the developer pays the purchaser. In return for guaranteeing a floor price, the purchaser may receive RECs from the project.

This option is a potential solution for customers that have electricity load distributed over many facilities or with loads in regulated electricity markets, like California. Unlike a physical PPA, synthetic PPAs do not include the physical consumption of electricity and therefore, there is no need for a purchaser's facilities to be in the same power market as the project. The combination of wholesale electricity market revenues and the floor price provides financial and credit support to the project owner sufficient to proceed with project financing and construction, thereby providing the critical support necessary for a new project to be implemented.

From an electricity purchaser's perspective, a VPPA can provide a long-term fixed supply of RECs along with potential for annual revenues on the contract. The purchaser, in a sense, is making a bet that market prices will continue to rise and that revenue from increasing prices will flow through the project to the purchaser. If properly structured, this contract can hedge against future electricity price increases or volatility. Purchasers must also understand the risk and financial exposure they face if market prices decline over the term of the agreement.

PPA pricing is highly dependent on the deal, and given the confidential, bilateral nature of the deals, pricing details are not publicly available. Moreover, VPPA deals discussed in the report, beyond a long-term contract for RECs, are often structured to be a hedge against of the price of electricity being procured by the offtaker (e.g., WLC tenants from MVU). VPPA pricing has fallen considerably over the past several years. Current publicly available estimates have VPPA prices at $22/MWh. As to whether this would represent a price premium, be cost-neutral, or result in increased income is dependent on the deal structure and electricity market pricing forecasts. The VPPA imposes an incremental cost on top of the cost WLC tenants pay to MVU for electricity. If the VPPA yields a cost savings, this benefit would effectively reduce the net cost paid to MVU for delivered electricity. However, if the VPPA yields a cost adder, it would effectively raise the net cost of delivered electricity. See https://www.epa.gov/greenpower/green-power-pricing for more details.

Table 12: VPPA Evaluation

CRITERIA	EVALUATION
Market credibility	PPA and VPPA transactions are viewed as having a higher impact relative to development of new renewable energy generation sources when compared to purchasing unbundled RECs. Net zero energy certification through voluntary programs such as the International Future Living Institute may require the project to be located physically close to the WLC.[9]
Relevance to future zero net energy regulations expected to be rolled out in California	The previously referenced Department of Energy paper titled "A Common Definition for Zero Energy Buildings" dated 2015 does not specifically address PPAs or VPPAs in the context contemplated in this report. However, if the RECs are obtained through the PPA or VPPA, WSP expects that these procurement methods will qualify for achieving zero net energy status per the Department of Energy Guidance, once efficiency and on-site renewables have been maximized.
Risk profile	There are several risk factors to evaluate when completing investment-grade due diligence on a PPA or VPPA contract, many of which are beyond the scope of this analysis. However, two risks germane to WLC are the typical contract length and price risk. Both are addressed just below. - Contract length: While the market is currently grappling with overcoming the length of typical deals, current structures are long-term commitments of 10-20 years. If WLC tenants are party to a PPA or VPPA, assuming the transactional complexity due to multi-party offtakers could be overcome, they would be contracting for a length of time (again, 10-20 years) that many businesses are not comfortable with. For example, this term may in fact be longer than the lease agreement at WLC. - Price risk: In PPAs and VPPAs, the purchaser can be exposed if future electricity prices drop below contract pricing. Contracts are typically for an electricity price forecast believed to outperform escalation of their current utility's forecasted rate. Some purchasers find value in having price certainty, which a PPA or VPPA could provide depending on the details of the contract.
Impact on lifetime energy costs of the project	PPAs and VPPAs can provide a hedge or "price stability" mechanism for electricity. If structured well, there should be either minimal or, at best, an improvement on the lifetime energy costs of the project. The discussion on price brings up the issue of the parties at the WLC that would enter into the PPA or VPPA. There are two options: the developer of the WLC or the tenants. Due to transaction costs and complexity, it is likely the only applicable party to execute a PPA or VPPA would be the developer. However, since the developer is not responsible for purchasing electricity – the tenants are – the transaction costs and any reconciliation of the price of the energy delivered to WLC and the price of the PPA or VPPA would likely have to be incorporated into the lease agreements.

[9] https://living-future.org/wp-content/uploads/2017/03/Net-Zero-Energy-Offsite-Renewables-Exception.pdf

5.6.4 COMMUNITY CHOICE AGGREGATION (CCA)

Community Choice Aggregation (CCA) is a program that allows cities and counties to buy and/or generate electricity for residents and businesses within their areas."[10] Basically, CCA is intended to provide utility rate payers with more options, which are increasingly providing green power procurement options.

CCA options are not currently available in Moreno Valley.[11] The below evaluation is provided in the circumstance that CCA options become available to WLC in the future. CCAs in California have shown they can be competitive with local utility pricing.

Table 13: CCA Evaluation

CRITERIA	EVALUATION
Market credibility	Purchasing from a CCA who has a higher than the required renewable energy fuel mix by actively bringing new renewable energy projects on line as opposed to procuring unbundled RECs would be viewed as credibly procuring renewable energy.
Relevance to future zero net energy regulations expected to be rolled out in California	As highlighted in the unbundled REC section above, the current DOE definition for zero energy buildings is not clear on certain emerging renewable energy procurement options such as PPAs, CCA, and green tariffs. Based on a New Building Institute paper titled "ZNE Project Guide for State Buildings", co-sponsored by California utilities PG&E and Southern California Edison, procurement from a CCA would qualify towards a zero energy build status.[12]
Risk profile	CCA procurement has a similar risk profile to conventional procurement from the local utility.
Impact on lifetime energy costs of the project	CCAs in California have shown to be competitive with local utility pricing.

5.6.5 GREEN TARIFF

Electricity markets in a growing number of states offer customers the ability to purchase green power directly from a local utility. These agreements allow the customer to contract for some or all of their purchased electricity to be attributed to existing green power projects feeding into the local grid. The utility will then retire the coinciding RECs on the customer's behalf, allowing the customer to claim the environmental benefits associated with the purchase of green power. Variations of this mechanism are available in regulated and deregulated markets. In deregulated markets, a customer may directly choose their electricity provider (e.g., CCA programs discussed above), while customers in regulated markets may have the option to pay a premium on their electric bill to claim energy generated from the utility's renewable portfolio.

[10] https://www.pge.com/en_US/residential/customer-service/other-services/alternative-energy-providers/community-choice-aggregation/community-choice-aggregation.page
[11] https://cal-cca.org/
[12] https://newbuildings.org/wp-content/uploads/2018/04/ZneProjectGuideForStateBuildings.pdf

Because utility products and green tariffs are typically based on existing renewable energy projects, their impact on the development of new green power projects is not as direct or significant as with other green power procurement options. MVU currently does not have a green tariff option. However, there may be an opportunity for Highland Fairview to work with MVU to develop such a tariff.

Per MVU's Integrated Resource Plan (IRP; 2015-2016), the utility indicates a desire to contract for new renewable energy.[13]

"*It is important to note that, due to typical project development timelines associated with renewable generator development, most of MVU's near-term incremental renewable energy requirements will need to be served by existing generators that have already qualified for California RPS eligibility. Looking forward, MVU may choose to contract with yet-to-be developed resources for renewable energy needs that have been identified in the medium- and long-term planning horizons. These planning horizons will allow sufficient time for necessary solicitation and contracting activities (to be completed by MVU) as well as new resource development. Based on recently completed renewable energy solicitations throughout the market, there appears to be ample renewable energy supply available for interested buyers, although prices are above the cost of conventional energy purchases. As discussed in this Plan, before making firm purchase commitments for additional renewable energy supply, MVU will continue to evaluate the cost/rate impacts that would result from additional renewable energy procurement.*"

Due to the large energy demands WLC will put on MVU, the developer of WLC may consider exploring working with MVU on the development of a green tariff similar to recent projects in regulated markets.[14] For example, Facebook recently worked to deliver two green tariffs with their local utilities in New Mexico and Nebraska.[15]

Pricing analysis for a green tariff (which is distinguished from utility green pricing products which could be the utility simply delivering unbundled RECs as part of the rate) is highly subjective to the structure of the rate. They may be cost competitive with current utility rates. See https://www.nrel.gov/docs/fy17osti/68179.pdf for more details.

Table 14: Green Tariff Evaluation

CRITERIA	EVALUATION
Market credibility	Development of a green tariff by MVU that is delivering renewable energy through an owned asset or a contract with an independent power provider would be perceived as being highly credible.
Relevance to future zero net energy regulations expected to be rolled out in California	As highlighted in the unbundled REC section above, the current DOE definition for zero energy buildings is not clear on some of emerging renewable energy procurement options such as PPAs, CCA, and green tariffs. Provided the rate payer has claim to the environmental attributes of the electricity they are procuring, it is WSP's opinion that such purchases would qualify the building as zero net energy in that it's a similar argument to that made by the New Buildings Institute in the aforementioned paper.
Risk profile	Given MVU would be the offtaker or owner of the renewable energy generation, this option has a similar risk profile to conventional procurement from the local utility.
Impact on lifetime energy costs of the project	Unknown at this time. The rate would be dependent on MVU's agreements or assets. Per their IRP, MVU states "*Based on recently completed renewable energy solicitations throughout the market, there appears to be ample renewable energy supply available for interested buyers, although prices are above the cost of conventional energy purchases.*"

[13] http://www.moreno-valley.ca.us/resident_services/utilities/pdfs/mvuAnnualReport0217.pdf
[14] http://www.wri.org/sites/default/files/emerging-green-tariffs-in-us-regulated-electricity-markets-sep2017_0.pdf
[15] http://buyersprinciples.org/2017/04/05/facebook-implements-new-green-tariff-for-new-nebraska-data-center/

5.7 RECOMMENDED PATH FORWARD

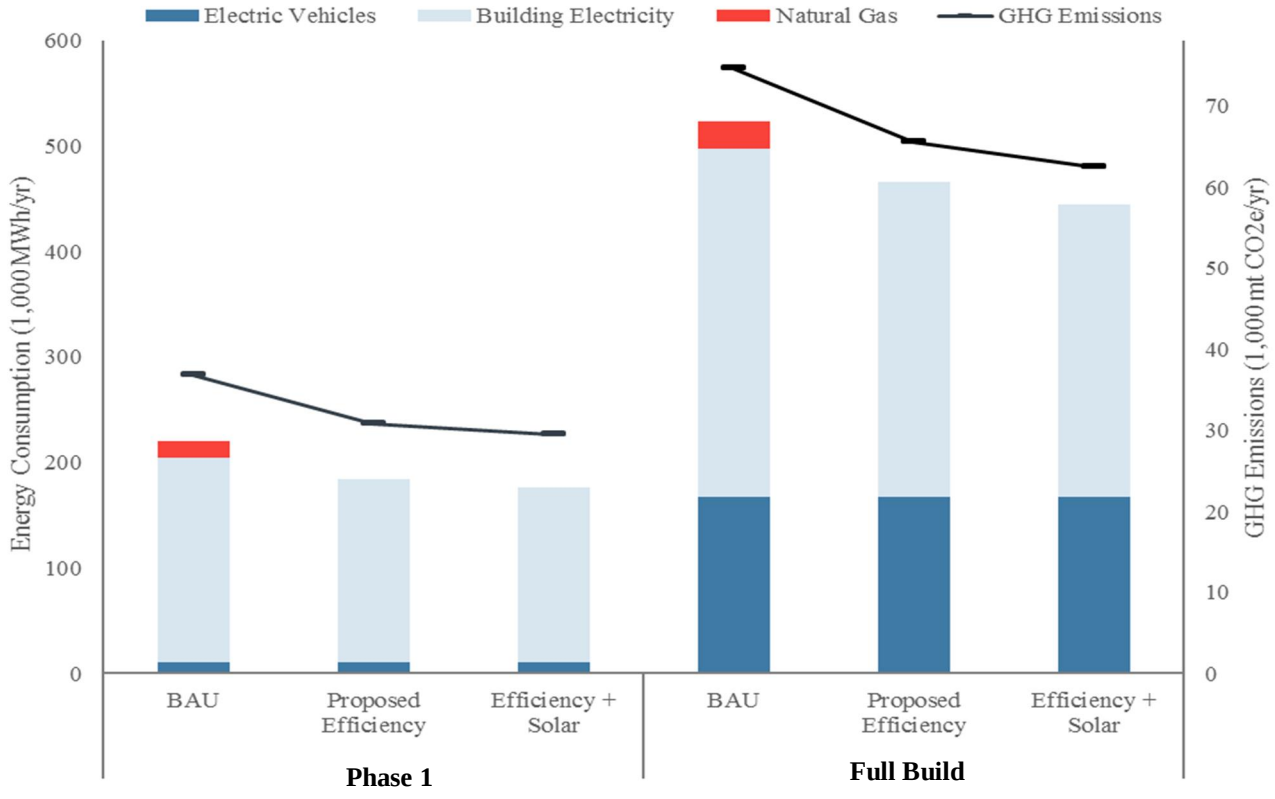
The recommended pathway does not include any on-site combustion or conversion of natural gas to electricity. Any CCHP configuration involving combustion is immediately disqualified due to the significant NO_x emissions it would contribute to an air shed that is already three times over the allowed NO_x limit. While fuel cells emit minimal NO_x and exploit the relatively low cost of natural gas compared to electricity, they result in a net increase in site energy consumption and GHG emissions and are therefore not recommended.

The recommended path forward also does not include requiring WLC tenants to procure renewable energy from off-site sources. The price premium associated with off-site renewable energy procurement would increase WLC tenant utility costs and thus run counter to the Project Objectives and the City's Economic Development Objectives.

The recommended path includes all-electric building systems which eliminates the need for on-site natural gas usage. WLC is then positioned with the future potential to operate 100% on renewable energy. However, PV capacity of 300 kW per building in Phase 1 is the maximum allowed by MVU rules.

The impact of the recommended ECMs and the proposed on-site PV on the annual energy consumption and GHG emissions of the WLC is shown in Figure 6.

Figure 6: Energy and GHG impact of proposed ECMs + PV for Phase 1 and Full Build-Out



6 CONCLUSION

6.1 SUMMARY OF OPPORTUNITIES

The State of California is expected to implement regulations to promote net-zero energy buildings. WLC has the opportunity to proactively embrace all-electric design standards at the outset of project construction. Doing so in advance of these regulations would make WLC net-zero-ready and position it to comply with future net-zero regulations. This, combined with WLC's commitment to solar-ready roof construction, positions the development to achieve its environmental stewardship and sustainability goals.

6.2 SUMMARY OF RECOMMENDATIONS

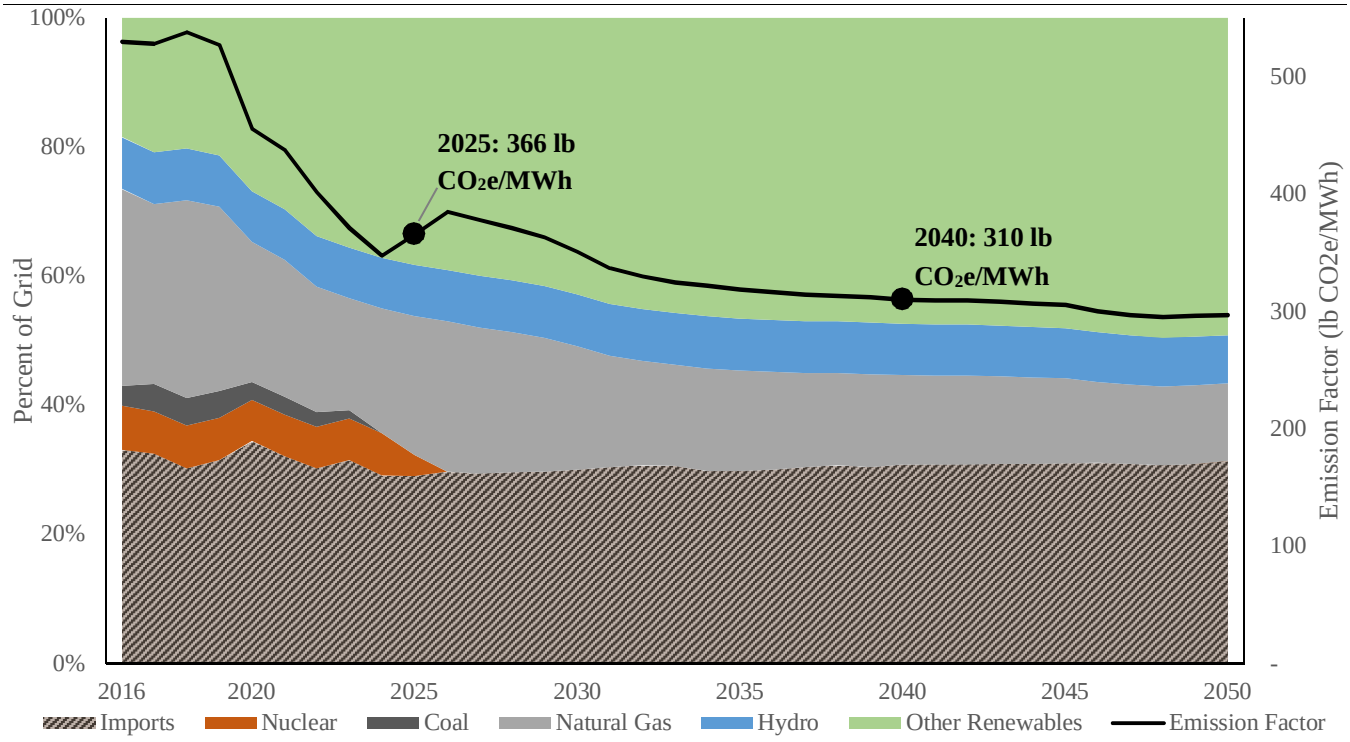
- Establish the ability of WLC to achieve net-zero energy over time by embracing all-electric design standards at the outset of project construction.
- Adopt maximum allowable solar PV capacity of 300 kW per building as a component of the Phase 1 design standards.
- Revisit this analysis with some frequency to capture inevitable changes over time in the MVU solar limit, MVU rate structures, Title 24 requirements, net-zero regulations, and changes in sustainable energy equipment costs.
- Implement recommended ECMs and maximum allowable solar PV capacity in Phase 1.

7 APPENDIX A: CURRENT AND FUTURE ENERGY CONTEXT

7.1 ELECTRIC GRID PROJECTIONS

Driven by an aggressive Renewable Portfolio Standard (RPS)[16] and a decreased reliance on coal, California's grid is one of the cleanest in the country. In 2017, 25% of its electricity was derived from renewable sources and the resulting carbon intensity of 529 lb $CO2_e$/MWh is nearly 50% below the national average of 1,000 lb $CO2_e$ /MWh. As highlighted in the graph below, rapid decarbonization of the California grid is expected to continue. The U.S. Energy Information Administration projects that that the grid's emissions factor will decline 31% from current levels by 2025 and 41% by 2040.

Figure 7: CAMX Emissions Factor Projection



[16] California's RPS requires retail sellers and publicly owned utilities to procure 50% of their electricity from eligible renewable sources by 2030

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E-3 Construction Fuel Consumption

World Logistics Center
Construction Energy Analysis

Annual Fuel Summary

	Heavy-Duty Construction Equipment
21,376,801	Total Project Consumption
1,370,308	Annual Consumption
	Haul Trucks
1,667,280	Total Project Consumption
106,877	Annual Consumption
	Vendor Trucks
1,195,386	Total Project Consumption
76,627	Annual Consumption
	Workers
844,012	Total Project Consumption
54,103	Annual Consumption
2,862,666	Project Consumption of diesel for Haul Trucks and Vendors
183,504	Annual Consumption
24,239,467	Total Gallons Diesel
844,012	Total Gallons Gasoline

15.6 Estimated Project Construction Duration (years)

1,553,812 Annual Average Gallons Diesel
54,103 Annual Average Gallons Gasoline

Riverside County			Percent of Annual Project Compared to Riverside County
Source	**Fuel Type**	**Gallons**	
Workers	Gasoline	1,052,000,000	0.0051%
Off-Road/Vendor/Haul Trucks	Diesel	275,000,000	0.5650%

Notes:

1 Gasoline and diesel amounts from CEC, 2019. Available: https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

World Logistics Center
Construction Energy Analysis

Off-Road Equipment

Equipment ≤ 50 hp		
pounds fuel/hp-hr (OFFROAD2011 model, ≤ 1000 hp):	0.408	lb/hp-hr
diesel pounds/gallon (CARB density assumption):	7.11	lb/gal
diesel gallons/hp-hr:	0.0574	gal/hp-hr
Total <100:	72,413,316	hp-hr
Total diesel gallons:	4,156,006	gal
Equipment > 50 hp		
pounds fuel/hp-hr (OFFROAD2011 model, > 100 hp):	0.367	lb/hp-hr
diesel pounds/gallon (CARB density assumption):	7.11	lb/gal
diesel gallons/hp-hr:	0.0516	gal/hp-hr
Total >100:	333,571,957	hp-hr
Total diesel gallons:	17,220,795	gal
Total diesel gallons (off-road equipment):	**21,376,801**	**gal**

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 2 and 4 (2020) Mass Excavation	Graders	1	10	193	0.41	262	207,321
Plots 2 and 4 (2020) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	262	398,240
Plots 2 and 4 (2020) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	262	70,006
Plots 2 and 4 (2020) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	262	70,006
Plots 2 and 4 (2020) Mass Excavation	Plate Compactors	1	10	354	0.43	262	398,816
Plots 2 and 4 (2020) Mass Excavation	Plate Compactors	1	10	354	0.43	262	398,816
Plots 2 and 4 (2020) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	262	1,215,680
Plots 2 and 4 (2020) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	262	1,215,680
Plots 2 and 4 (2020) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	262	859,360
Plots 2 and 4 (2020) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	262	319,640
Plots 2 and 4 (2020) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	262	146,720
Plots 2 and 4 (2020) Mass Excavation	Rubber Tired Dozers	3	10	85	0.4	262	267,240
Plots 2 and 4 (2020) Mass Excavation	Scrapers	6	10	550	0.48	262	4,150,080
Plots 2 and 4 (2020) Mass Excavation	Scrapers	12	10	550	0.48	262	8,300,160
Plots 2 and 4 (2020) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	262	82,399
Plots 2 and 4 (2020) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	262	17,502

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 2 and 4 (2020) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	262	17,502
Plots 2 and 4 (2020) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	262	146,720
Plots 2 and 4 (2020) Finish Grading	Rubber Tired Dozers	3	10	85	0.4	262	267,240
Plots 2 and 4 (2020) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	262	82,399
Plots 2 and 4 (2020) Utilities	Cement and Mortar Mixers	8	1	9	0.56	262	10,564
Plots 2 and 4 (2020) Utilities	Excavators	2	10	523	0.38	262	1,041,398
Plots 2 and 4 (2020) Utilities	Excavators	5	10	286	0.38	262	1,423,708
Plots 2 and 4 (2020) Utilities	Excavators	2	10	190	0.38	262	378,328
Plots 2 and 4 (2020) Utilities	Excavators	4	10	396	0.38	262	1,577,030
Plots 2 and 4 (2020) Utilities	Excavators	2	10	190	0.38	262	378,328
Plots 2 and 4 (2020) Utilities	Excavators	2	10	188	0.38	262	374,346
Plots 2 and 4 (2020) Utilities	Excavators	8	10	40	0.38	262	318,592
Plots 2 and 4 (2020) Utilities	Forklifts	4	10	89	0.2	262	186,544
Plots 2 and 4 (2020) Utilities	Other Material Handling Equipment	7	1	167	0.4	262	122,511
Plots 2 and 4 (2020) Utilities	Other Material Handling Equipment	16	1	167	0.4	262	280,026
Plots 2 and 4 (2020) Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	262	164,798
Plots 2 and 4 (2020) Utilities	Tractors/Loaders/Backhoes	8	10	90	0.37	262	697,968
Plots 2 and 4 (2020) Landscaping	Excavators	2	10	29	0.38	262	57,745
Plots 2 and 4 (2020) Landscaping	Forklifts	2	10	125	0.2	262	131,000
Plots 2 and 4 (2020) Landscaping	Other Material Handling Equipment	2	1	167	0.4	262	35,003
Plots 2 and 4 (2020) Landscaping	Other Material Handling Equipment	10	1	167	0.4	262	175,016
Plots 2 and 4 (2020) Landscaping	Rubber Tired Loaders	2	10	149	0.36	262	281,074
Plots 2 and 4 (2020) Landscaping	Skid Steer Loaders	2	10	69	0.37	262	133,777
Plots 2 and 4 (2020) Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	262	141,532
Plots 2 and 4 (2020) Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	262	151,226
Plots 2 and 4 (2020) Landscaping	Trenchers	2	10	39	0.5	262	102,180
Plots 2 and 4 (2020) Building Concrete	Cement and Mortar Mixers	15	1	9	0.56	262	19,807
Plots 2 and 4 (2020) Building Concrete	Other Material Handling Equipment	2	1	167	0.4	262	35,003
Plots 2 and 4 (2020) Building Concrete	Pumps	2	10	84	0.74	262	325,718
Plots 2 and 4 (2020) Building Concrete	Tractors/Loaders/Backhoes	4	10	78	0.37	262	302,453
Plots 2 and 4 (2020) Building-Wet Utilities	Excavators	2	10	300	0.38	262	597,360
Plots 2 and 4 (2020) Building-Wet Utilities	Excavators	2	10	179	0.38	262	356,425
Plots 2 and 4 (2020) Building-Wet Utilities	Excavators	2	10	173	0.38	262	344,478
Plots 2 and 4 (2020) Building-Wet Utilities	Other Material Handling Equipment	15	1	167	0.4	262	262,524
Plots 2 and 4 (2020) Building-Wet Utilities	Rubber Tired Loaders	6	10	152	0.36	262	860,198
Plots 2 and 4 (2020) Building-Wet Utilities	Tractors/Loaders/Backhoes	4	10	85	0.37	262	329,596
Plots 2 and 4 (2020) Building-Wet Utilities	Tractors/Loaders/Backhoes	6	10	108	0.37	262	628,171
Plots 2 and 4 (2020) Building-Electrical	Cement and Mortar Mixers	16	1	9	0.56	262	21,128
Plots 2 and 4 (2020) Building-Electrical	Excavators	4	10	40	0.38	262	159,296
Plots 2 and 4 (2020) Building-Electrical	Forklifts	4	10	89	0.2	262	186,544

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 2 and 4 (2020) Building-Electrical	Other Material Handling Equipment	6	1	167	0.4	262	105,010
Plots 2 and 4 (2020) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	262	348,984
Plots 2 and 4 (2020) Temporary Utilities	Cranes	2	10	445	0.29	262	676,222
Plots 2 and 4 (2020) Building-Landscaping	Excavators	2	10	29	0.38	262	57,745
Plots 2 and 4 (2020) Building-Landscaping	Forklifts	2	10	125	0.2	262	131,000
Plots 2 and 4 (2020) Building-Landscaping	Rubber Tired Loaders	2	10	149	0.36	262	281,074
Plots 2 and 4 (2020) Building-Landscaping	Skid Steer Loaders	2	10	69	0.37	262	133,777
Plots 2 and 4 (2020) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	262	141,532
Plots 2 and 4 (2020) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	262	151,226
Plots 2 and 4 (2020) Building-Landscaping	Trenchers	2	10	39	0.5	262	102,180
Plots 2 and 4 (2020) Paving	Other Material Handling Equipment	6	1	167	0.4	262	105,010
Plots 2 and 4 (2020) Paving	Pavers	2	10	126	0.42	262	277,301
Plots 2 and 4 (2020) Paving	Paving Equipment	2	10	131	0.36	262	247,118
Plots 2 and 4 (2020) Paving	Plate Compactors	2	10	8	0.43	262	18,026
Plots 2 and 4 (2020) Paving	Rollers	2	10	81	0.38	262	161,287
Plots 2 and 4 (2020) Paving	Scrapers	2	10	362	0.48	262	910,502
Plots 2 and 4 (2020) Paving	Tractors/Loaders/Backhoes	4	10	90	0.37	262	348,984
Plots 2 and 4 (2020) Curbing/Drive Approaches	Cement and Mortar Mixers	8	1	9	0.56	262	10,564
Plots 2 and 4 (2020) Curbing/Drive Approaches	Other Material Handling Equipment	4	1	167	0.4	262	70,006
Plots 2 and 4 (2020) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	262	93,377
Plots 2 and 4 (2020) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	262	123,559
Plots 2 and 4 (2020) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	262	53,317
Plot 4 (2021) Mass Excavation	Graders	2	10	193	0.41	261	413,059
Plot 4 (2021) Mass Excavation	Off-Highway Trucks	2	10	400	0.38	261	793,440
Plot 4 (2021) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plot 4 (2021) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plot 4 (2021) Mass Excavation	Plate Compactors	2	10	354	0.43	261	794,588
Plot 4 (2021) Mass Excavation	Plate Compactors	2	10	354	0.43	261	794,588
Plot 4 (2021) Mass Excavation	Rubber Tired Dozers	2	10	305	0.4	261	636,840
Plot 4 (2021) Mass Excavation	Rubber Tired Dozers	2	10	140	0.4	261	292,320
Plot 4 (2021) Mass Excavation	Rubber Tired Dozers	3	10	85	0.4	261	266,220
Plot 4 (2021) Mass Excavation	Rubber Tired Dozers	3	10	580	0.4	261	1,816,560
Plot 4 (2021) Mass Excavation	Rubber Tired Dozers	3	10	580	0.4	261	1,816,560
Plot 4 (2021) Mass Excavation	Rubber Tired Dozers	3	10	410	0.4	261	1,284,120
Plot 4 (2021) Mass Excavation	Scrapers	6	10	550	0.48	261	4,134,240
Plot 4 (2021) Mass Excavation	Scrapers	14	10	550	0.48	261	9,646,560
Plot 4 (2021) Mass Excavation	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169
Plot 4 (2021) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 4 (2021) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 4 (2021) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	261	146,160

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 4 (2021) Finish Grading	Rubber Tired Dozers	3	10	85	0.4	261	266,220
Plot 4 (2021) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plot 4 (2021) Utilities	Cement and Mortar Mixers	8	1	9	0.56	261	10,524
Plot 4 (2021) Utilities	Excavators	2	10	523	0.38	261	1,037,423
Plot 4 (2021) Utilities	Excavators	10	10	286	0.38	261	2,836,548
Plot 4 (2021) Utilities	Excavators	2	10	190	0.38	261	376,884
Plot 4 (2021) Utilities	Excavators	4	10	396	0.38	261	1,571,011
Plot 4 (2021) Utilities	Excavators	2	10	190	0.38	261	376,884
Plot 4 (2021) Utilities	Excavators	2	10	188	0.38	261	372,917
Plot 4 (2021) Utilities	Excavators	8	10	40	0.38	261	317,376
Plot 4 (2021) Utilities	Forklifts	4	10	89	0.2	261	185,832
Plot 4 (2021) Utilities	Other Material Handling Equipment	8	1	167	0.4	261	139,478
Plot 4 (2021) Utilities	Other Material Handling Equipment	18	1	167	0.4	261	313,826
Plot 4 (2021) Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169
Plot 4 (2021) Utilities	Tractors/Loaders/Backhoes	8	10	90	0.37	261	695,304
Plot 4 (2021) Building-Concrete	Cement and Mortar Mixers	30	1	9	0.56	261	39,463
Plot 4 (2021) Building-Concrete	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plot 4 (2021) Building-Concrete	Pumps	2	10	84	0.74	261	324,475
Plot 4 (2021) Building-Concrete	Tractors/Loaders/Backhoes	10	10	90	0.37	261	869,130
Plot 4 (2021) Building-Wet Utilities	Excavators	2	10	300	0.38	261	595,080
Plot 4 (2021) Building-Wet Utilities	Excavators	2	10	179	0.38	261	355,064
Plot 4 (2021) Building-Wet Utilities	Excavators	2	10	173	0.38	261	343,163
Plot 4 (2021) Building-Wet Utilities	Other Material Handling Equipment	15	1	167	0.4	261	261,522
Plot 4 (2021) Building-Wet Utilities	Rubber Tired Loaders	6	10	152	0.36	261	856,915
Plot 4 (2021) Building-Wet Utilities	Tractors/Loaders/Backhoes	4	10	108	0.37	261	417,182
Plot 4 (2021) Building-Wet Utilities	Tractors/Loaders/Backhoes	6	10	108	0.37	261	625,774
Plot 4 (2021) Building-Electrical	Cement and Mortar Mixers	18	1	9	0.56	261	23,678
Plot 4 (2021) Building-Electrical	Excavators	10	10	40	0.38	261	396,720
Plot 4 (2021) Building-Electrical	Forklifts	4	10	89	0.2	261	185,832
Plot 4 (2021) Building-Electrical	Other Material Handling Equipment	6	1	167	0.4	261	104,609
Plot 4 (2021) Building-Electrical	Tractors/Loaders/Backhoes	10	10	90	0.37	261	869,130
Plot 4 (2021) Building-Landscaping	Excavators	2	10	29	0.38	261	57,524
Plot 4 (2021) Building-Landscaping	Forklifts	2	10	125	0.2	261	130,500
Plot 4 (2021) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plot 4 (2021) Building-Landscaping	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 4 (2021) Building-Landscaping	Rubber Tired Loaders	2	10	149	0.36	261	280,001
Plot 4 (2021) Building-Landscaping	Skid Steer Loaders	2	10	69	0.37	261	133,267
Plot 4 (2021) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	261	140,992
Plot 4 (2021) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	261	150,649
Plot 4 (2021) Building-Landscaping	Trenchers	2	10	39	0.5	261	101,790

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 4 (2021) Landscaping	Excavators	2	10	29	0.38	261	57,524
Plot 4 (2021) Landscaping	Forklifts	2	10	125	0.2	261	130,500
Plot 4 (2021) Landscaping	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plot 4 (2021) Landscaping	Other Material Handling Equipment	10	1	167	0.4	261	174,348
Plot 4 (2021) Landscaping	Rubber Tired Loaders	2	10	149	0.36	261	280,001
Plot 4 (2021) Landscaping	Skid Steer Loaders	2	10	69	0.37	261	133,267
Plot 4 (2021) Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	261	140,992
Plot 4 (2021) Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	261	150,649
Plot 4 (2021) Landscaping	Trenchers	2	10	39	0.5	261	101,790
Plot 4 (2021) Temporary Utilities	Cranes	2	10	445	0.29	261	673,641
Plot 4 (2021) Curbing/Drive Approaches	Cement and Mortar Mixers	8	1	9	0.56	261	10,524
Plot 4 (2021) Curbing/Drive Approaches	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plot 4 (2021) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	261	93,020
Plot 4 (2021) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	261	123,088
Plot 4 (2021) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	261	53,114
Plot 4 (2021) Paving	Other Material Handling Equipment	6	1	167	0.4	261	104,609
Plot 4 (2021) Paving	Pavers	2	10	126	0.42	261	276,242
Plot 4 (2021) Paving	Paving Equipment	2	10	131	0.36	261	246,175
Plot 4 (2021) Paving	Plate Compactors	2	10	8	0.43	261	17,957
Plot 4 (2021) Paving	Rollers	2	10	81	0.38	261	160,672
Plot 4 (2021) Paving	Scrapers	2	10	362	0.48	261	907,027
Plot 4 (2021) Paving	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plots 4 and 9 (2022) Mass Excavation	Graders	2	10	193	0.41	260	411,476
Plots 4 and 9 (2022) Mass Excavation	Off-Highway Trucks	2	10	400	0.38	260	790,400
Plots 4 and 9 (2022) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plots 4 and 9 (2022) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plots 4 and 9 (2022) Mass Excavation	Plate Compactors	2	10	354	0.43	260	791,544
Plots 4 and 9 (2022) Mass Excavation	Plate Compactors	2	10	354	0.43	260	791,544
Plots 4 and 9 (2022) Mass Excavation	Rubber Tired Dozers	4	10	580	0.4	260	2,412,800
Plots 4 and 9 (2022) Mass Excavation	Rubber Tired Dozers	4	10	580	0.4	260	2,412,800
Plots 4 and 9 (2022) Mass Excavation	Rubber Tired Dozers	4	10	410	0.4	260	1,705,600
Plots 4 and 9 (2022) Mass Excavation	Rubber Tired Dozers	2	10	305	0.4	260	634,400
Plots 4 and 9 (2022) Mass Excavation	Rubber Tired Dozers	2	10	140	0.4	260	291,200
Plots 4 and 9 (2022) Mass Excavation	Rubber Tired Dozers	3	10	85	0.4	260	265,200
Plots 4 and 9 (2022) Mass Excavation	Scrapers	6	10	550	0.48	260	4,118,400
Plots 4 and 9 (2022) Mass Excavation	Scrapers	14	10	550	0.48	260	9,609,600
Plots 4 and 9 (2022) Mass Excavation	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plots 4 and 9 (2022) Finish Grading	Other Construction Equipment	2	10	167	0.42	260	364,728
Plots 4 and 9 (2022) Finish Grading	Other Construction Equipment	2	10	167	0.42	260	364,728
Plots 4 and 9 (2022) Finish Grading	Rubber Tired Dozers	2	10	140	0.4	260	291,200

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 4 and 9 (2022) Finish Grading	Rubber Tired Dozers	4	10	85	0.4	260	353,600
Plots 4 and 9 (2022) Finish Grading	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plots 4 and 9 (2022) Utilities	Cement and Mortar Mixers	8	1	9	0.56	260	10,483
Plots 4 and 9 (2022) Utilities	Excavators	2	10	523	0.38	260	1,033,448
Plots 4 and 9 (2022) Utilities	Excavators	10	10	286	0.38	260	2,825,680
Plots 4 and 9 (2022) Utilities	Excavators	2	10	190	0.38	260	375,440
Plots 4 and 9 (2022) Utilities	Excavators	4	10	396	0.38	260	1,564,992
Plots 4 and 9 (2022) Utilities	Excavators	2	10	190	0.38	260	375,440
Plots 4 and 9 (2022) Utilities	Excavators	2	10	188	0.38	260	371,488
Plots 4 and 9 (2022) Utilities	Excavators	8	10	40	0.38	260	316,160
Plots 4 and 9 (2022) Utilities	Forklifts	4	10	89	0.2	260	185,120
Plots 4 and 9 (2022) Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plots 4 and 9 (2022) Utilities	Other Material Handling Equipment	18	1	167	0.4	260	312,624
Plots 4 and 9 (2022) Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plots 4 and 9 (2022) Utilities	Tractors/Loaders/Backhoes	8	10	90	0.37	260	692,640
Plots 4 and 9 (2022) Building-Concrete	Cement and Mortar Mixers	30	1	9	0.56	260	39,312
Plots 4 and 9 (2022) Building-Concrete	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 4 and 9 (2022) Building-Concrete	Pumps	2	10	84	0.74	260	323,232
Plots 4 and 9 (2022) Building-Concrete	Tractors/Loaders/Backhoes	10	10	90	0.37	260	865,800
Plots 4 and 9 (2022) Building-Wet Utilities	Excavators	2	10	300	0.38	260	592,800
Plots 4 and 9 (2022) Building-Wet Utilities	Excavators	2	10	179	0.38	260	353,704
Plots 4 and 9 (2022) Building-Wet Utilities	Excavators	2	10	173	0.38	260	341,848
Plots 4 and 9 (2022) Building-Wet Utilities	Other Material Handling Equipment	15	1	167	0.4	260	260,520
Plots 4 and 9 (2022) Building-Wet Utilities	Rubber Tired Loaders	6	10	152	0.36	260	853,632
Plots 4 and 9 (2022) Building-Wet Utilities	Tractors/Loaders/Backhoes	4	10	85	0.37	260	327,080
Plots 4 and 9 (2022) Building-Wet Utilities	Tractors/Loaders/Backhoes	6	10	108	0.37	260	623,376
Plots 4 and 9 (2022) Building-Electrical	Cement and Mortar Mixers	18	1	9	0.56	260	23,587
Plots 4 and 9 (2022) Building-Electrical	Excavators	10	10	40	0.38	260	395,200
Plots 4 and 9 (2022) Building-Electrical	Forklifts	4	10	89	0.2	260	185,120
Plots 4 and 9 (2022) Building-Electrical	Other Material Handling Equipment	6	1	167	0.4	260	104,208
Plots 4 and 9 (2022) Building-Electrical	Tractors/Loaders/Backhoes	10	10	90	0.37	260	865,800
Plots 4 and 9 (2022) Building-Landscaping	Excavators	2	10	29	0.38	260	57,304
Plots 4 and 9 (2022) Building-Landscaping	Forklifts	2	10	125	0.2	260	130,000
Plots 4 and 9 (2022) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plots 4 and 9 (2022) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plots 4 and 9 (2022) Building-Landscaping	Rubber Tired Loaders	2	10	149	0.36	260	278,928
Plots 4 and 9 (2022) Building-Landscaping	Skid Steer Loaders	2	10	69	0.37	260	132,756
Plots 4 and 9 (2022) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	260	140,452
Plots 4 and 9 (2022) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	260	150,072
Plots 4 and 9 (2022) Building-Landscaping	Trenchers	2	10	39	0.5	260	101,400

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 4 and 9 (2022) Landscaping	Excavators	2	10	29	0.38	260	57,304
Plots 4 and 9 (2022) Landscaping	Forklifts	2	10	125	0.2	260	130,000
Plots 4 and 9 (2022) Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 4 and 9 (2022) Landscaping	Other Material Handling Equipment	10	1	167	0.4	260	173,680
Plots 4 and 9 (2022) Landscaping	Rubber Tired Loaders	2	10	149	0.36	260	278,928
Plots 4 and 9 (2022) Landscaping	Skid Steer Loaders	2	10	69	0.37	260	132,756
Plots 4 and 9 (2022) Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	260	140,452
Plots 4 and 9 (2022) Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	260	150,072
Plots 4 and 9 (2022) Landscaping	Trenchers	2	10	39	0.5	260	101,400
Plots 4 and 9 (2022) Temporary Utilities	Cranes	2	10	445	0.29	260	671,060
Plots 4 and 9 (2022) Curbing/Drive Approaches	Cement and Mortar Mixers	8	1	9	0.56	260	10,483
Plots 4 and 9 (2022) Curbing/Drive Approaches	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plots 4 and 9 (2022) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	260	92,664
Plots 4 and 9 (2022) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	260	122,616
Plots 4 and 9 (2022) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	260	52,910
Plots 4 and 9 (2022) Paving	Other Material Handling Equipment	6	1	167	0.4	260	104,208
Plots 4 and 9 (2022) Paving	Pavers	2	10	126	0.42	260	275,184
Plots 4 and 9 (2022) Paving	Paving Equipment	2	10	131	0.36	260	245,232
Plots 4 and 9 (2022) Paving	Plate Compactors	2	10	8	0.43	260	17,888
Plots 4 and 9 (2022) Paving	Rollers	2	10	81	0.38	260	160,056
Plots 4 and 9 (2022) Paving	Scrapers	2	10	362	0.48	260	903,552
Plots 4 and 9 (2022) Paving	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 9 (2023) Mass Excavation	Graders	2	10	193	0.41	260	411,476
Plot 9 (2023) Mass Excavation	Off-Highway Trucks	2	10	400	0.38	260	790,400
Plot 9 (2023) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plot 9 (2023) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plot 9 (2023) Mass Excavation	Plate Compactors	2	10	354	0.43	260	791,544
Plot 9 (2023) Mass Excavation	Plate Compactors	2	10	354	0.43	260	791,544
Plot 9 (2023) Mass Excavation	Rubber Tired Dozers	4	10	580	0.4	260	2,412,800
Plot 9 (2023) Mass Excavation	Rubber Tired Dozers	4	10	580	0.4	260	2,412,800
Plot 9 (2023) Mass Excavation	Rubber Tired Dozers	4	10	410	0.4	260	1,705,600
Plot 9 (2023) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	260	317,200
Plot 9 (2023) Mass Excavation	Rubber Tired Dozers	2	10	140	0.4	260	291,200
Plot 9 (2023) Mass Excavation	Rubber Tired Dozers	3	10	85	0.4	260	265,200
Plot 9 (2023) Mass Excavation	Scrapers	6	10	550	0.48	260	4,118,400
Plot 9 (2023) Mass Excavation	Scrapers	12	10	550	0.48	260	8,236,800
Plot 9 (2023) Mass Excavation	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plot 9 (2023) Finish Grading	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 9 (2023) Finish Grading	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 9 (2023) Finish Grading	Rubber Tired Dozers	2	10	140	0.4	260	291,200

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 9 (2023) Finish Grading	Rubber Tired Dozers	4	10	85	0.4	260	353,600
Plot 9 (2023) Finish Grading	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plot 9 (2023) Utilities	Cement and Mortar Mixers	8	1	9	0.56	260	10,483
Plot 9 (2023) Utilities	Excavators	2	10	523	0.38	260	1,033,448
Plot 9 (2023) Utilities	Excavators	10	10	286	0.38	260	2,825,680
Plot 9 (2023) Utilities	Excavators	2	10	190	0.38	260	375,440
Plot 9 (2023) Utilities	Excavators	4	10	396	0.38	260	1,564,992
Plot 9 (2023) Utilities	Excavators	2	10	190	0.38	260	375,440
Plot 9 (2023) Utilities	Excavators	2	10	188	0.38	260	371,488
Plot 9 (2023) Utilities	Excavators	8	10	40	0.38	260	316,160
Plot 9 (2023) Utilities	Forklifts	4	10	89	0.2	260	185,120
Plot 9 (2023) Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plot 9 (2023) Utilities	Other Material Handling Equipment	18	1	167	0.4	260	312,624
Plot 9 (2023) Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plot 9 (2023) Utilities	Tractors/Loaders/Backhoes	8	10	90	0.37	260	692,640
Plot 9 (2023) Building-Concrete	Cement and Mortar Mixers	30	1	9	0.56	260	39,312
Plot 9 (2023) Building-Concrete	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 9 (2023) Building-Concrete	Pumps	2	10	84	0.74	260	323,232
Plot 9 (2023) Building-Concrete	Tractors/Loaders/Backhoes	10	10	90	0.37	260	865,800
Plot 9 (2023) Building-Wet Utilities	Excavators	2	10	300	0.38	260	592,800
Plot 9 (2023) Building-Wet Utilities	Excavators	2	10	179	0.38	260	353,704
Plot 9 (2023) Building-Wet Utilities	Excavators	2	10	173	0.38	260	341,848
Plot 9 (2023) Building-Wet Utilities	Other Material Handling Equipment	15	1	167	0.4	260	260,520
Plot 9 (2023) Building-Wet Utilities	Rubber Tired Loaders	6	10	152	0.36	260	853,632
Plot 9 (2023) Building-Wet Utilities	Tractors/Loaders/Backhoes	6	10	108	0.37	260	623,376
Plot 9 (2023) Building-Wet Utilities	Tractors/Loaders/Backhoes	4	10	85	0.37	260	327,080
Plot 9 (2023) Building-Electrical	Cement and Mortar Mixers	18	1	9	0.56	260	23,587
Plot 9 (2023) Building-Electrical	Excavators	10	10	40	0.38	260	395,200
Plot 9 (2023) Building-Electrical	Forklifts	4	10	89	0.2	260	185,120
Plot 9 (2023) Building-Electrical	Other Material Handling Equipment	6	1	167	0.4	260	104,208
Plot 9 (2023) Building-Electrical	Tractors/Loaders/Backhoes	10	10	90	0.37	260	865,800
Plot 9 (2023) Building-Landscaping	Excavators	2	10	29	0.38	260	57,304
Plot 9 (2023) Building-Landscaping	Forklifts	2	10	125	0.2	260	130,000
Plot 9 (2023) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plot 9 (2023) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plot 9 (2023) Building-Landscaping	Rubber Tired Loaders	2	10	149	0.36	260	278,928
Plot 9 (2023) Building-Landscaping	Skid Steer Loaders	2	10	69	0.37	260	132,756
Plot 9 (2023) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	260	140,452
Plot 9 (2023) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	260	150,072
Plot 9 (2023) Building-Landscaping	Trenchers	2	10	39	0.5	260	101,400

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 9 (2023) Landscaping	Excavators	2	10	29	0.38	260	57,304
Plot 9 (2023) Landscaping	Forklifts	2	10	125	0.2	260	130,000
Plot 9 (2023) Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 9 (2023) Landscaping	Other Material Handling Equipment	10	1	167	0.4	260	173,680
Plot 9 (2023) Landscaping	Rubber Tired Loaders	2	10	149	0.36	260	278,928
Plot 9 (2023) Landscaping	Skid Steer Loaders	2	10	69	0.37	260	132,756
Plot 9 (2023) Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	260	140,452
Plot 9 (2023) Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	260	150,072
Plot 9 (2023) Landscaping	Trenchers	2	10	39	0.5	260	101,400
Plot 9 (2023) Temporary Utilities	Cranes	2	10	445	0.29	260	671,060
Plot 9 (2023) Curbing/Drive Approaches	Cement and Mortar Mixers	8	1	9	0.56	260	10,483
Plot 9 (2023) Curbing/Drive Approaches	Other Material Handling Equipment	6	1	167	0.4	260	104,208
Plot 9 (2023) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	260	92,664
Plot 9 (2023) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	260	122,616
Plot 9 (2023) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	260	52,910
Plot 9 (2023) Paving	Other Material Handling Equipment	6	1	167	0.4	260	104,208
Plot 9 (2023) Paving	Pavers	2	10	126	0.42	260	275,184
Plot 9 (2023) Paving	Paving Equipment	2	10	131	0.36	260	245,232
Plot 9 (2023) Paving	Plate Compactors	2	10	8	0.43	260	17,888
Plot 9 (2023) Paving	Rollers	2	10	81	0.38	260	160,056
Plot 9 (2023) Paving	Scrapers	2	10	362	0.48	260	903,552
Plot 9 (2023) Paving	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 9 (2023) Interchange	Bore/Drill Rigs	1	10	206	0.5	260	267,800
Plot 9 (2023) Interchange	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 9 (2023) Interchange	Cranes	1	10	226	0.29	260	170,404
Plot 9 (2023) Interchange	Excavators	1	10	190	0.38	260	187,720
Plot 9 (2023) Interchange	Graders	1	10	259	0.41	260	276,094
Plot 9 (2023) Interchange	Other General Industrial Equipment	1	10	88	0.34	260	77,792
Plot 9 (2023) Interchange	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plot 9 (2023) Interchange	Rubber Tired Dozers	1	10	410	0.4	260	426,400
Plot 9 (2023) Interchange	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plot 9 (2023) Interchange	Rubber Tired Loaders	1	10	180	0.36	260	168,480
Plot 9 (2023) Interchange	Scrapers	1	10	330	0.48	260	411,840
Plot 9 (2023) Interchange	Tractors/Loaders/Backhoes	1	10	98	0.37	260	94,276
Plot 9 (2023) Interchange	Tractors/Loaders/Backhoes	1	10	90	0.37	260	86,580
Plots 9 and 1,3,20 (2024) Mass Excavation	Graders	2	10	193	0.41	261	413,059
Plots 9 and 1,3,20 (2024) Mass Excavation	Off-Highway Trucks	2	10	400	0.38	261	793,440
Plots 9 and 1,3,20 (2024) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plots 9 and 1,3,20 (2024) Mass Excavation	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plots 9 and 1,3,20 (2024) Mass Excavation	Plate Compactors	2	10	354	0.43	261	794,588

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 9 and 1,3,20 (2024) Mass Excavation	Plate Compactors	2	10	354	0.43	261	794,588
Plots 9 and 1,3,20 (2024) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plots 9 and 1,3,20 (2024) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plots 9 and 1,3,20 (2024) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	261	856,080
Plots 9 and 1,3,20 (2024) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	261	318,420
Plots 9 and 1,3,20 (2024) Mass Excavation	Rubber Tired Dozers	2	10	140	0.4	261	292,320
Plots 9 and 1,3,20 (2024) Mass Excavation	Rubber Tired Dozers	3	10	85	0.4	261	266,220
Plots 9 and 1,3,20 (2024) Mass Excavation	Scrapers	6	10	550	0.48	261	4,134,240
Plots 9 and 1,3,20 (2024) Mass Excavation	Scrapers	12	10	550	0.48	261	8,268,480
Plots 9 and 1,3,20 (2024) Mass Excavation	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169
Plots 9 and 1,3,20 (2024) Utilities	Cement and Mortar Mixers	8	1	9	0.56	262	10,564
Plots 9 and 1,3,20 (2024) Utilities	Excavators	2	10	523	0.38	262	1,041,398
Plots 9 and 1,3,20 (2024) Utilities	Excavators	10	10	286	0.38	262	2,847,416
Plots 9 and 1,3,20 (2024) Utilities	Excavators	2	10	190	0.38	262	378,328
Plots 9 and 1,3,20 (2024) Utilities	Excavators	4	10	396	0.38	262	1,577,030
Plots 9 and 1,3,20 (2024) Utilities	Excavators	2	10	190	0.38	262	378,328
Plots 9 and 1,3,20 (2024) Utilities	Excavators	2	10	188	0.38	262	374,346
Plots 9 and 1,3,20 (2024) Utilities	Excavators	8	10	40	0.38	262	318,592
Plots 9 and 1,3,20 (2024) Utilities	Forklifts	4	10	89	0.2	262	186,544
Plots 9 and 1,3,20 (2024) Utilities	Other Material Handling Equipment	8	1	167	0.4	262	140,013
Plots 9 and 1,3,20 (2024) Utilities	Other Material Handling Equipment	20	1	167	0.4	262	350,032
Plots 9 and 1,3,20 (2024) Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	262	164,798
Plots 9 and 1,3,20 (2024) Utilities	Tractors/Loaders/Backhoes	8	10	90	0.37	262	697,968
Plots 9 and 1,3,20 (2024) Building-Concrete	Cement and Mortar Mixers	30	1	9	0.56	262	39,614
Plots 9 and 1,3,20 (2024) Building-Concrete	Other Material Handling Equipment	2	1	167	0.4	262	35,003
Plots 9 and 1,3,20 (2024) Building-Concrete	Pumps	2	10	84	0.74	262	325,718
Plots 9 and 1,3,20 (2024) Building-Concrete	Tractors/Loaders/Backhoes	10	10	90	0.37	262	872,460
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Excavators	2	10	300	0.38	262	597,360
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Excavators	2	10	179	0.38	262	356,425
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Excavators	2	10	173	0.38	262	344,478
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Other Material Handling Equipment	15	1	167	0.4	262	262,524
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Rubber Tired Loaders	6	10	152	0.36	262	860,198
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Tractors/Loaders/Backhoes	6	10	108	0.37	262	628,171
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	Tractors/Loaders/Backhoes	4	10	85	0.37	262	329,596
Plots 9 and 1,3,20 (2024) Building-Electrical	Cement and Mortar Mixers	12	1	9	0.56	262	15,846
Plots 9 and 1,3,20 (2024) Building-Electrical	Excavators	10	10	40	0.38	262	398,240
Plots 9 and 1,3,20 (2024) Building-Electrical	Forklifts	4	10	89	0.2	262	186,544
Plots 9 and 1,3,20 (2024) Building-Electrical	Other Material Handling Equipment	6	1	167	0.4	262	105,010
Plots 9 and 1,3,20 (2024) Building-Electrical	Tractors/Loaders/Backhoes	10	10	90	0.37	262	872,460
Plots 9 and 1,3,20 (2024) Building-Landscaping	Excavators	2	10	29	0.38	262	57,745

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 9 and 1,3,20 (2024) Building-Landscaping	Forklifts	2	10	125	0.2	262	131,000
Plots 9 and 1,3,20 (2024) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	262	70,006
Plots 9 and 1,3,20 (2024) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	262	70,006
Plots 9 and 1,3,20 (2024) Building-Landscaping	Rubber Tired Loaders	2	10	149	0.36	262	281,074
Plots 9 and 1,3,20 (2024) Building-Landscaping	Skid Steer Loaders	2	10	69	0.37	262	133,777
Plots 9 and 1,3,20 (2024) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	262	141,532
Plots 9 and 1,3,20 (2024) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	262	151,226
Plots 9 and 1,3,20 (2024) Building-Landscaping	Trenchers	2	10	39	0.5	262	102,180
Plots 9 and 1,3,20 (2024) Landscaping	Excavators	2	10	29	0.38	262	57,745
Plots 9 and 1,3,20 (2024) Landscaping	Forklifts	2	10	125	0.2	262	131,000
Plots 9 and 1,3,20 (2024) Landscaping	Other Material Handling Equipment	2	1	167	0.4	262	35,003
Plots 9 and 1,3,20 (2024) Landscaping	Other Material Handling Equipment	10	1	167	0.4	262	175,016
Plots 9 and 1,3,20 (2024) Landscaping	Rubber Tired Loaders	2	10	149	0.36	262	281,074
Plots 9 and 1,3,20 (2024) Landscaping	Skid Steer Loaders	2	10	69	0.37	262	133,777
Plots 9 and 1,3,20 (2024) Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	262	141,532
Plots 9 and 1,3,20 (2024) Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	262	151,226
Plots 9 and 1,3,20 (2024) Landscaping	Trenchers	2	10	39	0.5	262	102,180
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	Cement and Mortar Mixers	8	1	9	0.56	262	10,564
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	Other Material Handling Equipment	6	1	167	0.4	262	105,010
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	Paving Equipment	2	10	99	0.36	262	186,754
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	Paving Equipment	2	10	131	0.36	262	247,118
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	2	10	55	0.37	262	106,634
Plots 9 and 1,3,20 (2024) Temporary Utilities	Cranes	2	10	445	0.29	262	676,222
Plots 9 and 1,3,20 (2024) Interchange	Bore/Drill Rigs	1	10	206	0.5	262	269,860
Plots 9 and 1,3,20 (2024) Interchange	Cement and Mortar Mixers	4	1	9	0.56	262	5,282
Plots 9 and 1,3,20 (2024) Interchange	Cranes	1	10	226	0.29	262	171,715
Plots 9 and 1,3,20 (2024) Interchange	Excavators	1	10	190	0.38	262	189,164
Plots 9 and 1,3,20 (2024) Interchange	Graders	1	10	259	0.41	262	278,218
Plots 9 and 1,3,20 (2024) Interchange	Other General Industrial Equipment	1	10	88	0.34	262	78,390
Plots 9 and 1,3,20 (2024) Interchange	Other Material Handling Equipment	4	1	167	0.4	262	70,006
Plots 9 and 1,3,20 (2024) Interchange	Rubber Tired Dozers	1	10	410	0.4	262	429,680
Plots 9 and 1,3,20 (2024) Interchange	Rubber Tired Dozers	1	10	140	0.4	262	146,720
Plots 9 and 1,3,20 (2024) Interchange	Rubber Tired Loaders	1	10	180	0.36	262	169,776
Plots 9 and 1,3,20 (2024) Interchange	Scrapers	1	10	330	0.48	262	415,008
Plots 9 and 1,3,20 (2024) Interchange	Tractors/Loaders/Backhoes	1	10	98	0.37	262	95,001
Plots 9 and 1,3,20 (2024) Interchange	Tractors/Loaders/Backhoes	1	10	90	0.37	262	87,246
Plots 9 and 1,3,20 (2024) Finish Grading	Other Material Handling Equipment	2	1	167	0.4	262	35,003
Plots 9 and 1,3,20 (2024) Finish Grading	Other Material Handling Equipment	2	1	167	0.4	262	35,003
Plots 9 and 1,3,20 (2024) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	262	146,720
Plots 9 and 1,3,20 (2024) Finish Grading	Rubber Tired Dozers	4	10	85	0.4	262	356,320

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 9 and 1,3,20 (2024) Finish Grading	Tractors/Loaders/Backhoes	2	10	85	0.37	262	164,798
Plots 9 and 1,3,20 (2024) Paving	Other Material Handling Equipment	6	1	167	0.4	262	105,010
Plots 9 and 1,3,20 (2024) Paving	Pavers	2	10	126	0.42	262	277,301
Plots 9 and 1,3,20 (2024) Paving	Paving Equipment	2	10	131	0.36	262	247,118
Plots 9 and 1,3,20 (2024) Paving	Plate Compactors	2	10	8	0.43	262	18,026
Plots 9 and 1,3,20 (2024) Paving	Rollers	2	10	81	0.38	262	161,287
Plots 9 and 1,3,20 (2024) Paving	Scrapers	2	10	362	0.48	262	910,502
Plots 9 and 1,3,20 (2024) Paving	Tractors/Loaders/Backhoes	4	10	90	0.37	262	348,984
Plots 5 and 10 (2025) Mass Excavation	Graders	1	10	193	0.41	261	206,529
Plots 5 and 10 (2025) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	261	396,720
Plots 5 and 10 (2025) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 5 and 10 (2025) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 5 and 10 (2025) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plots 5 and 10 (2025) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plots 5 and 10 (2025) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plots 5 and 10 (2025) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plots 5 and 10 (2025) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	261	856,080
Plots 5 and 10 (2025) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	261	318,420
Plots 5 and 10 (2025) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plots 5 and 10 (2025) Mass Excavation	Rubber Tired Dozers	3	10	85	0.4	261	266,220
Plots 5 and 10 (2025) Mass Excavation	Scrapers	2	10	550	0.48	261	1,378,080
Plots 5 and 10 (2025) Mass Excavation	Scrapers	7	10	550	0.48	261	4,823,280
Plots 5 and 10 (2025) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plots 5 and 10 (2025) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plots 5 and 10 (2025) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plots 5 and 10 (2025) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plots 5 and 10 (2025) Finish Grading	Rubber Tired Dozers	3	10	85	0.4	261	266,220
Plots 5 and 10 (2025) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plots 5 and 10 (2025) Utilities	Cement and Mortar Mixers	8	1	9	0.56	261	10,524
Plots 5 and 10 (2025) Utilities	Excavators	2	10	523	0.38	261	1,037,423
Plots 5 and 10 (2025) Utilities	Excavators	10	10	286	0.38	261	2,836,548
Plots 5 and 10 (2025) Utilities	Excavators	2	10	190	0.38	261	376,884
Plots 5 and 10 (2025) Utilities	Excavators	4	10	396	0.38	261	1,571,011
Plots 5 and 10 (2025) Utilities	Excavators	2	10	190	0.38	261	376,884
Plots 5 and 10 (2025) Utilities	Excavators	2	10	188	0.38	261	372,917
Plots 5 and 10 (2025) Utilities	Excavators	8	10	40	0.38	261	317,376
Plots 5 and 10 (2025) Utilities	Forklifts	4	10	89	0.2	261	185,832
Plots 5 and 10 (2025) Utilities	Other Material Handling Equipment	8	1	167	0.4	261	139,478
Plots 5 and 10 (2025) Utilities	Other Material Handling Equipment	18	1	167	0.4	261	313,826
Plots 5 and 10 (2025) Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 5 and 10 (2025) Utilities	Tractors/Loaders/Backhoes	8	10	90	0.37	261	695,304
Plots 5 and 10 (2025) Building-Concrete	Cement and Mortar Mixers	20	1	9	0.56	261	26,309
Plots 5 and 10 (2025) Building-Concrete	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plots 5 and 10 (2025) Building-Concrete	Pumps	2	10	84	0.74	261	324,475
Plots 5 and 10 (2025) Building-Concrete	Tractors/Loaders/Backhoes	6	10	90	0.37	261	521,478
Plots 5 and 10 (2025) Building-Wet Utilities	Excavators	2	10	300	0.38	261	595,080
Plots 5 and 10 (2025) Building-Wet Utilities	Excavators	2	10	179	0.38	261	355,064
Plots 5 and 10 (2025) Building-Wet Utilities	Excavators	2	10	173	0.38	261	343,163
Plots 5 and 10 (2025) Building-Wet Utilities	Other Material Handling Equipment	10	1	167	0.4	261	174,348
Plots 5 and 10 (2025) Building-Wet Utilities	Rubber Tired Loaders	6	10	152	0.36	261	856,915
Plots 5 and 10 (2025) Building-Wet Utilities	Tractors/Loaders/Backhoes	6	10	108	0.37	261	625,774
Plots 5 and 10 (2025) Building-Wet Utilities	Tractors/Loaders/Backhoes	4	10	85	0.37	261	328,338
Plots 5 and 10 (2025) Building-Electrical	Cement and Mortar Mixers	8	1	9	0.56	261	10,524
Plots 5 and 10 (2025) Building-Electrical	Excavators	6	10	40	0.38	261	238,032
Plots 5 and 10 (2025) Building-Electrical	Forklifts	4	10	89	0.2	261	185,832
Plots 5 and 10 (2025) Building-Electrical	Other Material Handling Equipment	6	1	167	0.4	261	104,609
Plots 5 and 10 (2025) Building-Electrical	Tractors/Loaders/Backhoes	6	10	90	0.37	261	521,478
Plots 5 and 10 (2025) Building-Landscaping	Excavators	2	10	29	0.38	261	57,524
Plots 5 and 10 (2025) Building-Landscaping	Forklifts	2	10	125	0.2	261	130,500
Plots 5 and 10 (2025) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 5 and 10 (2025) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 5 and 10 (2025) Building-Landscaping	Rubber Tired Loaders	2	10	149	0.36	261	280,001
Plots 5 and 10 (2025) Building-Landscaping	Skid Steer Loaders	2	10	69	0.37	261	133,267
Plots 5 and 10 (2025) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	261	140,992
Plots 5 and 10 (2025) Building-Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	261	150,649
Plots 5 and 10 (2025) Building-Landscaping	Trenchers	2	10	39	0.5	261	101,790
Plots 5 and 10 (2025) Landscaping	Excavators	2	10	29	0.38	261	57,524
Plots 5 and 10 (2025) Landscaping	Forklifts	2	10	125	0.2	261	130,500
Plots 5 and 10 (2025) Landscaping	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plots 5 and 10 (2025) Landscaping	Other Material Handling Equipment	10	1	167	0.4	261	174,348
Plots 5 and 10 (2025) Landscaping	Rubber Tired Loaders	2	10	149	0.36	261	280,001
Plots 5 and 10 (2025) Landscaping	Skid Steer Loaders	2	10	69	0.37	261	133,267
Plots 5 and 10 (2025) Landscaping	Tractors/Loaders/Backhoes	2	10	73	0.37	261	140,992
Plots 5 and 10 (2025) Landscaping	Tractors/Loaders/Backhoes	2	10	78	0.37	261	150,649
Plots 5 and 10 (2025) Landscaping	Trenchers	2	10	39	0.5	261	101,790
Plots 5 and 10 (2025) Temporary Utilities	Cranes	2	10	445	0.29	261	673,641
Plots 5 and 10 (2025) Curbing/Drive Approaches	Cement and Mortar Mixers	6	1	9	0.56	261	7,893
Plots 5 and 10 (2025) Curbing/Drive Approaches	Other Material Handling Equipment	6	1	167	0.4	261	104,609
Plots 5 and 10 (2025) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	261	93,020
Plots 5 and 10 (2025) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	261	123,088

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 5 and 10 (2025) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	261	53,114
Plots 5 and 10 (2025) Paving	Other Material Handling Equipment	6	1	167	0.4	261	104,609
Plots 5 and 10 (2025) Paving	Pavers	2	10	126	0.42	261	276,242
Plots 5 and 10 (2025) Paving	Paving Equipment	2	10	131	0.36	261	246,175
Plots 5 and 10 (2025) Paving	Plate Compactors	2	10	8	0.43	261	17,957
Plots 5 and 10 (2025) Paving	Rollers	2	10	81	0.38	261	160,672
Plots 5 and 10 (2025) Paving	Scrapers	2	10	362	0.48	261	907,027
Plots 5 and 10 (2025) Paving	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plots 10 and 8 (2026) Mass Excavation	Graders	1	10	193	0.41	261	206,529
Plots 10 and 8 (2026) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	261	396,720
Plots 10 and 8 (2026) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 10 and 8 (2026) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plots 10 and 8 (2026) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plots 10 and 8 (2026) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plots 10 and 8 (2026) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plots 10 and 8 (2026) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plots 10 and 8 (2026) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	261	856,080
Plots 10 and 8 (2026) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	261	318,420
Plots 10 and 8 (2026) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plots 10 and 8 (2026) Mass Excavation	Rubber Tired Dozers	2	10	85	0.4	261	177,480
Plots 10 and 8 (2026) Mass Excavation	Scrapers	2	10	550	0.48	261	1,378,080
Plots 10 and 8 (2026) Mass Excavation	Scrapers	6	10	550	0.48	261	4,134,240
Plots 10 and 8 (2026) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plots 10 and 8 (2026) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plots 10 and 8 (2026) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plots 10 and 8 (2026) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plots 10 and 8 (2026) Finish Grading	Rubber Tired Dozers	2	10	85	0.4	261	177,480
Plots 10 and 8 (2026) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plots 10 and 8 (2026) Utilities	Cement and Mortar Mixers	4	1	9	0.56	261	5,262
Plots 10 and 8 (2026) Utilities	Excavators	1	10	523	0.38	261	518,711
Plots 10 and 8 (2026) Utilities	Excavators	10	10	286	0.38	261	2,836,548
Plots 10 and 8 (2026) Utilities	Excavators	1	10	190	0.38	261	188,442
Plots 10 and 8 (2026) Utilities	Excavators	2	10	396	0.38	261	785,506
Plots 10 and 8 (2026) Utilities	Excavators	1	10	190	0.38	261	188,442
Plots 10 and 8 (2026) Utilities	Excavators	1	10	188	0.38	261	186,458
Plots 10 and 8 (2026) Utilities	Excavators	4	10	40	0.38	261	158,688
Plots 10 and 8 (2026) Utilities	Forklifts	2	10	89	0.2	261	92,916
Plots 10 and 8 (2026) Utilities	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 10 and 8 (2026) Utilities	Other Material Handling Equipment	10	1	167	0.4	261	174,348
Plots 10 and 8 (2026) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 10 and 8 (2026) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plots 10 and 8 (2026) Building-Concrete	Cement and Mortar Mixers	20	1	9	0.56	261	26,309
Plots 10 and 8 (2026) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plots 10 and 8 (2026) Building-Concrete	Pumps	1	10	84	0.74	261	162,238
Plots 10 and 8 (2026) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plots 10 and 8 (2026) Building-Wet Utilities	Excavators	1	10	300	0.38	261	297,540
Plots 10 and 8 (2026) Building-Wet Utilities	Excavators	1	10	179	0.38	261	177,532
Plots 10 and 8 (2026) Building-Wet Utilities	Excavators	1	10	173	0.38	261	171,581
Plots 10 and 8 (2026) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	261	139,478
Plots 10 and 8 (2026) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	261	428,458
Plots 10 and 8 (2026) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	261	312,887
Plots 10 and 8 (2026) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169
Plots 10 and 8 (2026) Building-Electrical	Cement and Mortar Mixers	5	1	9	0.56	261	6,577
Plots 10 and 8 (2026) Building-Electrical	Excavators	4	10	40	0.38	261	158,688
Plots 10 and 8 (2026) Building-Electrical	Forklifts	2	10	89	0.2	261	92,916
Plots 10 and 8 (2026) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plots 10 and 8 (2026) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plots 10 and 8 (2026) Building-Landscaping	Excavators	1	10	29	0.38	261	28,762
Plots 10 and 8 (2026) Building-Landscaping	Forklifts	1	10	125	0.2	261	65,250
Plots 10 and 8 (2026) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plots 10 and 8 (2026) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 10 and 8 (2026) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	261	140,000
Plots 10 and 8 (2026) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	261	66,633
Plots 10 and 8 (2026) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	261	70,496
Plots 10 and 8 (2026) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	261	75,325
Plots 10 and 8 (2026) Building-Landscaping	Trenchers	1	10	39	0.5	261	50,895
Plots 10 and 8 (2026) Landscaping	Excavators	1	10	29	0.38	261	28,762
Plots 10 and 8 (2026) Landscaping	Forklifts	1	10	125	0.2	261	65,250
Plots 10 and 8 (2026) Landscaping	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plots 10 and 8 (2026) Landscaping	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plots 10 and 8 (2026) Landscaping	Rubber Tired Loaders	1	10	149	0.36	261	140,000
Plots 10 and 8 (2026) Landscaping	Skid Steer Loaders	1	10	69	0.37	261	66,633
Plots 10 and 8 (2026) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	261	70,496
Plots 10 and 8 (2026) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	261	75,325
Plots 10 and 8 (2026) Landscaping	Trenchers	1	10	39	0.5	261	50,895
Plots 10 and 8 (2026) Temporary Utilities	Cranes	1	10	445	0.29	261	336,821
Plots 10 and 8 (2026) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	261	3,946
Plots 10 and 8 (2026) Curbing/Drive Approaches	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plots 10 and 8 (2026) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	261	93,020
Plots 10 and 8 (2026) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	261	123,088

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 10 and 8 (2026) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	261	53,114
Plots 10 and 8 (2026) Paving	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plots 10 and 8 (2026) Paving	Pavers	1	10	126	0.42	261	138,121
Plots 10 and 8 (2026) Paving	Paving Equipment	1	10	131	0.36	261	123,088
Plots 10 and 8 (2026) Paving	Plate Compactors	1	10	8	0.43	261	8,978
Plots 10 and 8 (2026) Paving	Rollers	1	10	81	0.38	261	80,336
Plots 10 and 8 (2026) Paving	Scrapers	1	10	362	0.48	261	453,514
Plots 10 and 8 (2026) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	261	173,826
Plot 8 (2027) Mass Excavation	Graders	1	10	193	0.41	261	206,529
Plot 8 (2027) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	261	396,720
Plot 8 (2027) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 8 (2027) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plot 8 (2027) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plot 8 (2027) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plot 8 (2027) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plot 8 (2027) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plot 8 (2027) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	261	856,080
Plot 8 (2027) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	261	318,420
Plot 8 (2027) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plot 8 (2027) Mass Excavation	Rubber Tired Dozers	2	10	85	0.4	261	177,480
Plot 8 (2027) Mass Excavation	Scrapers	2	10	550	0.48	261	1,378,080
Plot 8 (2027) Mass Excavation	Scrapers	6	10	550	0.48	261	4,134,240
Plot 8 (2027) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plot 8 (2027) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 8 (2027) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 8 (2027) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plot 8 (2027) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	261	88,740
Plot 8 (2027) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plot 8 (2027) Utilities	Cement and Mortar Mixers	4	1	9	0.56	261	5,262
Plot 8 (2027) Utilities	Excavators	1	10	523	0.38	261	518,711
Plot 8 (2027) Utilities	Excavators	5	10	286	0.38	261	1,418,274
Plot 8 (2027) Utilities	Excavators	1	10	190	0.38	261	188,442
Plot 8 (2027) Utilities	Excavators	2	10	396	0.38	261	785,506
Plot 8 (2027) Utilities	Excavators	1	10	190	0.38	261	188,442
Plot 8 (2027) Utilities	Excavators	1	10	188	0.38	261	186,458
Plot 8 (2027) Utilities	Excavators	4	10	40	0.38	261	158,688
Plot 8 (2027) Utilities	Forklifts	2	10	89	0.2	261	92,916
Plot 8 (2027) Utilities	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plot 8 (2027) Utilities	Other Material Handling Equipment	10	1	167	0.4	261	174,348
Plot 8 (2027) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 8 (2027) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plot 8 (2027) Building-Concrete	Cement and Mortar Mixers	20	1	9	0.56	261	26,309
Plot 8 (2027) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 8 (2027) Building-Concrete	Pumps	1	10	84	0.74	261	162,238
Plot 8 (2027) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plot 8 (2027) Building-Wet Utilities	Excavators	1	10	300	0.38	261	297,540
Plot 8 (2027) Building-Wet Utilities	Excavators	1	10	179	0.38	261	177,532
Plot 8 (2027) Building-Wet Utilities	Excavators	1	10	173	0.38	261	171,581
Plot 8 (2027) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	261	139,478
Plot 8 (2027) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	261	428,458
Plot 8 (2027) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	261	312,887
Plot 8 (2027) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169
Plot 8 (2027) Building-Electrical	Cement and Mortar Mixers	5	1	9	0.56	261	6,577
Plot 8 (2027) Building-Electrical	Excavators	4	10	40	0.38	261	158,688
Plot 8 (2027) Building-Electrical	Forklifts	2	10	89	0.2	261	92,916
Plot 8 (2027) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 8 (2027) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plot 8 (2027) Building-Landscaping	Excavators	1	10	29	0.38	261	28,762
Plot 8 (2027) Building-Landscaping	Forklifts	1	10	125	0.2	261	65,250
Plot 8 (2027) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plot 8 (2027) Building-Landscaping	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plot 8 (2027) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	261	140,000
Plot 8 (2027) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	261	66,633
Plot 8 (2027) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	261	70,496
Plot 8 (2027) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	261	75,325
Plot 8 (2027) Building-Landscaping	Trenchers	1	10	39	0.5	261	50,895
Plot 8 (2027) Landscaping	Excavators	1	10	29	0.38	261	28,762
Plot 8 (2027) Landscaping	Forklifts	1	10	125	0.2	261	65,250
Plot 8 (2027) Landscaping	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 8 (2027) Landscaping	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plot 8 (2027) Landscaping	Rubber Tired Loaders	1	10	149	0.36	261	140,000
Plot 8 (2027) Landscaping	Skid Steer Loaders	1	10	69	0.37	261	66,633
Plot 8 (2027) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	261	70,496
Plot 8 (2027) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	261	75,325
Plot 8 (2027) Landscaping	Trenchers	1	10	39	0.5	261	50,895
Plot 8 (2027) Temporary Utilities	Cranes	1	10	445	0.29	261	336,821
Plot 8 (2027) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	261	3,946
Plot 8 (2027) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plot 8 (2027) Paving	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 8 (2027) Paving	Pavers	1	10	126	0.42	261	138,121

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 8 (2027) Paving	Paving Equipment	1	10	131	0.36	261	123,088
Plot 8 (2027) Paving	Plate Compactors	1	10	8	0.43	261	8,978
Plot 8 (2027) Paving	Rollers	1	10	81	0.38	261	80,336
Plot 8 (2027) Paving	Scrapers	1	10	362	0.48	261	453,514
Plot 8 (2027) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	261	173,826
Plots 11 and 6,7 (2028) Mass Excavation	Graders	1	10	193	0.41	260	205,738
Plots 11 and 6,7 (2028) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	260	395,200
Plots 11 and 6,7 (2028) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 11 and 6,7 (2028) Mass Excavation	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plots 11 and 6,7 (2028) Mass Excavation	Plate Compactors	1	10	354	0.43	260	395,772
Plots 11 and 6,7 (2028) Mass Excavation	Plate Compactors	1	10	354	0.43	260	395,772
Plots 11 and 6,7 (2028) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	260	1,206,400
Plots 11 and 6,7 (2028) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	260	1,206,400
Plots 11 and 6,7 (2028) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	260	852,800
Plots 11 and 6,7 (2028) Mass Excavation	Rubber Tired Dozers	2	10	305	0.4	260	634,400
Plots 11 and 6,7 (2028) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plots 11 and 6,7 (2028) Mass Excavation	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plots 11 and 6,7 (2028) Mass Excavation	Scrapers	2	10	550	0.48	260	1,372,800
Plots 11 and 6,7 (2028) Mass Excavation	Scrapers	6	10	550	0.48	260	4,118,400
Plots 11 and 6,7 (2028) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 11 and 6,7 (2028) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 6,7 (2028) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 6,7 (2028) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plots 11 and 6,7 (2028) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plots 11 and 6,7 (2028) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 11 and 6,7 (2028) Utilities	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plots 11 and 6,7 (2028) Utilities	Excavators	1	10	523	0.38	260	516,724
Plots 11 and 6,7 (2028) Utilities	Excavators	5	10	286	0.38	260	1,412,840
Plots 11 and 6,7 (2028) Utilities	Excavators	1	10	190	0.38	260	187,720
Plots 11 and 6,7 (2028) Utilities	Excavators	2	10	396	0.38	260	782,496
Plots 11 and 6,7 (2028) Utilities	Excavators	1	10	190	0.38	260	187,720
Plots 11 and 6,7 (2028) Utilities	Excavators	1	10	188	0.38	260	185,744
Plots 11 and 6,7 (2028) Utilities	Excavators	4	10	40	0.38	260	158,080
Plots 11 and 6,7 (2028) Utilities	Forklifts	2	10	89	0.2	260	92,560
Plots 11 and 6,7 (2028) Utilities	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plots 11 and 6,7 (2028) Utilities	Other Material Handling Equipment	10	1	167	0.4	260	173,680
Plots 11 and 6,7 (2028) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 11 and 6,7 (2028) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 11 and 6,7 (2028) Building-Concrete	Cement and Mortar Mixers	10	1	9	0.56	260	13,104
Plots 11 and 6,7 (2028) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	260	17,368

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 11 and 6,7 (2028) Building-Concrete	Pumps	1	10	84	0.74	260	161,616
Plots 11 and 6,7 (2028) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 11 and 6,7 (2028) Building-Wet Utilities	Excavators	1	10	300	0.38	260	296,400
Plots 11 and 6,7 (2028) Building-Wet Utilities	Excavators	1	10	179	0.38	260	176,852
Plots 11 and 6,7 (2028) Building-Wet Utilities	Excavators	1	10	173	0.38	260	170,924
Plots 11 and 6,7 (2028) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plots 11 and 6,7 (2028) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	260	426,816
Plots 11 and 6,7 (2028) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	260	311,688
Plots 11 and 6,7 (2028) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plots 11 and 6,7 (2028) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plots 11 and 6,7 (2028) Building-Electrical	Excavators	4	10	40	0.38	260	158,080
Plots 11 and 6,7 (2028) Building-Electrical	Forklifts	2	10	89	0.2	260	92,560
Plots 11 and 6,7 (2028) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 11 and 6,7 (2028) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 11 and 6,7 (2028) Building-Landscaping	Excavators	1	10	29	0.38	260	28,652
Plots 11 and 6,7 (2028) Building-Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plots 11 and 6,7 (2028) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 11 and 6,7 (2028) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 11 and 6,7 (2028) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plots 11 and 6,7 (2028) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plots 11 and 6,7 (2028) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plots 11 and 6,7 (2028) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plots 11 and 6,7 (2028) Building-Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plots 11 and 6,7 (2028) Landscaping	Excavators	1	10	29	0.38	260	28,652
Plots 11 and 6,7 (2028) Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plots 11 and 6,7 (2028) Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 6,7 (2028) Landscaping	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plots 11 and 6,7 (2028) Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plots 11 and 6,7 (2028) Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plots 11 and 6,7 (2028) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plots 11 and 6,7 (2028) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plots 11 and 6,7 (2028) Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plots 11 and 6,7 (2028) Temporary Utilities	Cranes	1	10	445	0.29	260	335,530
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	260	3,931
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	260	92,664
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	260	122,616
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	260	52,910
Plots 11 and 6,7 (2028) Paving	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 11 and 6,7 (2028) Paving	Pavers	1	10	126	0.42	260	137,592

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 11 and 6,7 (2028) Paving	Paving Equipment	1	10	131	0.36	260	122,616
Plots 11 and 6,7 (2028) Paving	Plate Compactors	1	10	8	0.43	260	8,944
Plots 11 and 6,7 (2028) Paving	Rollers	1	10	81	0.38	260	80,028
Plots 11 and 6,7 (2028) Paving	Scrapers	1	10	362	0.48	260	451,776
Plots 11 and 6,7 (2028) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	260	173,160
Plot 11 (2029) Mass Excavation	Graders	1	10	193	0.41	261	206,529
Plot 11 (2029) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	261	396,720
Plot 11 (2029) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 11 (2029) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 11 (2029) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plot 11 (2029) Mass Excavation	Plate Compactors	1	10	354	0.43	261	397,294
Plot 11 (2029) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plot 11 (2029) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	261	1,211,040
Plot 11 (2029) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	261	856,080
Plot 11 (2029) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	261	318,420
Plot 11 (2029) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plot 11 (2029) Mass Excavation	Rubber Tired Dozers	1	10	85	0.4	261	88,740
Plot 11 (2029) Mass Excavation	Scrapers	1	10	550	0.48	261	689,040
Plot 11 (2029) Mass Excavation	Scrapers	6	10	550	0.48	261	4,134,240
Plot 11 (2029) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plot 11 (2029) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 11 (2029) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 11 (2029) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	261	146,160
Plot 11 (2029) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	261	88,740
Plot 11 (2029) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plot 11 (2029) Utilities	Cement and Mortar Mixers	4	1	9	0.56	261	5,262
Plot 11 (2029) Utilities	Excavators	1	10	523	0.38	261	518,711
Plot 11 (2029) Utilities	Excavators	5	10	286	0.38	261	1,418,274
Plot 11 (2029) Utilities	Excavators	1	10	190	0.38	261	188,442
Plot 11 (2029) Utilities	Excavators	2	10	396	0.38	261	785,506
Plot 11 (2029) Utilities	Excavators	1	10	190	0.38	261	188,442
Plot 11 (2029) Utilities	Excavators	1	10	188	0.38	261	186,458
Plot 11 (2029) Utilities	Excavators	4	10	40	0.38	261	158,688
Plot 11 (2029) Utilities	Forklifts	2	10	89	0.2	261	92,916
Plot 11 (2029) Utilities	Other Material Handling Equipment	4	1	167	0.4	261	69,739
Plot 11 (2029) Utilities	Other Material Handling Equipment	10	1	167	0.4	261	174,348
Plot 11 (2029) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	261	82,085
Plot 11 (2029) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plot 11 (2029) Building-Concrete	Cement and Mortar Mixers	10	1	9	0.56	261	13,154
Plot 11 (2029) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	261	17,435

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 11 (2029) Building-Concrete	Pumps	1	10	84	0.74	261	162,238
Plot 11 (2029) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plot 11 (2029) Building-Wet Utilities	Excavators	1	10	300	0.38	261	297,540
Plot 11 (2029) Building-Wet Utilities	Excavators	1	10	179	0.38	261	177,532
Plot 11 (2029) Building-Wet Utilities	Excavators	1	10	173	0.38	261	171,581
Plot 11 (2029) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	261	139,478
Plot 11 (2029) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	261	428,458
Plot 11 (2029) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	261	312,887
Plot 11 (2029) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	261	164,169
Plot 11 (2029) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	261	5,262
Plot 11 (2029) Building-Electrical	Excavators	4	10	40	0.38	261	158,688
Plot 11 (2029) Building-Electrical	Forklifts	2	10	89	0.2	261	92,916
Plot 11 (2029) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 11 (2029) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	261	347,652
Plot 11 (2029) Building-Landscaping	Excavators	1	10	29	0.38	261	28,762
Plot 11 (2029) Building-Landscaping	Forklifts	1	10	125	0.2	261	65,250
Plot 11 (2029) Building-Landscaping	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 11 (2029) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plot 11 (2029) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	261	140,000
Plot 11 (2029) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	261	66,633
Plot 11 (2029) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	261	70,496
Plot 11 (2029) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	261	75,325
Plot 11 (2029) Building-Landscaping	Trenchers	1	10	39	0.5	261	50,895
Plot 11 (2029) Landscaping	Excavators	1	10	29	0.38	261	28,762
Plot 11 (2029) Landscaping	Forklifts	1	10	125	0.2	261	65,250
Plot 11 (2029) Landscaping	Other Material Handling Equipment	1	1	167	0.4	261	17,435
Plot 11 (2029) Landscaping	Other Material Handling Equipment	5	1	167	0.4	261	87,174
Plot 11 (2029) Landscaping	Rubber Tired Loaders	1	10	149	0.36	261	140,000
Plot 11 (2029) Landscaping	Skid Steer Loaders	1	10	69	0.37	261	66,633
Plot 11 (2029) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	261	70,496
Plot 11 (2029) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	261	75,325
Plot 11 (2029) Landscaping	Trenchers	1	10	39	0.5	261	50,895
Plot 11 (2029) Temporary Utilities	Cranes	1	10	445	0.29	261	336,821
Plot 11 (2029) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	261	3,946
Plot 11 (2029) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	261	34,870
Plot 11 (2029) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	261	93,020
Plot 11 (2029) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	261	123,088
Plot 11 (2029) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	261	53,114
Plot 11 (2029) Paving	Other Material Handling Equipment	3	1	167	0.4	261	52,304
Plot 11 (2029) Paving	Pavers	1	10	126	0.42	261	138,121

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 11 (2029) Paving	Paving Equipment	1	10	131	0.36	261	123,088
Plot 11 (2029) Paving	Plate Compactors	1	10	8	0.43	261	8,978
Plot 11 (2029) Paving	Rollers	1	10	81	0.38	261	80,336
Plot 11 (2029) Paving	Scrapers	1	10	362	0.48	261	453,514
Plot 11 (2029) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	261	173,826
Plot 11 (2030) Mass Excavation	Graders	1	10	193	0.41	260	205,738
Plot 11 (2030) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	260	395,200
Plot 11 (2030) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2030) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2030) Mass Excavation	Plate Compactors	1	10	354	0.43	260	395,772
Plot 11 (2030) Mass Excavation	Plate Compactors	1	10	354	0.43	260	395,772
Plot 11 (2030) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	260	1,206,400
Plot 11 (2030) Mass Excavation	Rubber Tired Dozers	2	10	580	0.4	260	1,206,400
Plot 11 (2030) Mass Excavation	Rubber Tired Dozers	2	10	410	0.4	260	852,800
Plot 11 (2030) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	260	317,200
Plot 11 (2030) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plot 11 (2030) Mass Excavation	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plot 11 (2030) Mass Excavation	Scrapers	6	10	550	0.48	260	4,118,400
Plot 11 (2030) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 11 (2030) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2030) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2030) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plot 11 (2030) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plot 11 (2030) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 11 (2030) Utilities	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 11 (2030) Utilities	Excavators	1	10	523	0.38	260	516,724
Plot 11 (2030) Utilities	Excavators	5	10	286	0.38	260	1,412,840
Plot 11 (2030) Utilities	Excavators	1	10	190	0.38	260	187,720
Plot 11 (2030) Utilities	Excavators	2	10	396	0.38	260	782,496
Plot 11 (2030) Utilities	Excavators	1	10	190	0.38	260	187,720
Plot 11 (2030) Utilities	Excavators	1	10	188	0.38	260	185,744
Plot 11 (2030) Utilities	Excavators	4	10	40	0.38	260	158,080
Plot 11 (2030) Utilities	Forklifts	2	10	89	0.2	260	92,560
Plot 11 (2030) Utilities	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plot 11 (2030) Utilities	Other Material Handling Equipment	10	1	167	0.4	260	173,680
Plot 11 (2030) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 11 (2030) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 11 (2030) Building-Concrete	Cement and Mortar Mixers	10	1	9	0.56	260	13,104
Plot 11 (2030) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2030) Building-Concrete	Pumps	1	10	84	0.74	260	161,616

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 11 (2030) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 11 (2030) Building-Wet Utilities	Excavators	1	10	300	0.38	260	296,400
Plot 11 (2030) Building-Wet Utilities	Excavators	1	10	179	0.38	260	176,852
Plot 11 (2030) Building-Wet Utilities	Excavators	1	10	173	0.38	260	170,924
Plot 11 (2030) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plot 11 (2030) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	260	426,816
Plot 11 (2030) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	260	311,688
Plot 11 (2030) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plot 11 (2030) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 11 (2030) Building-Electrical	Excavators	4	10	40	0.38	260	158,080
Plot 11 (2030) Building-Electrical	Forklifts	2	10	89	0.2	260	92,560
Plot 11 (2030) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2030) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 11 (2030) Building-Landscaping	Excavators	1	10	29	0.38	260	28,652
Plot 11 (2030) Building-Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plot 11 (2030) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 11 (2030) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 11 (2030) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plot 11 (2030) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plot 11 (2030) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plot 11 (2030) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plot 11 (2030) Building-Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plot 11 (2030) Landscaping	Excavators	1	10	29	0.38	260	28,652
Plot 11 (2030) Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plot 11 (2030) Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2030) Landscaping	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plot 11 (2030) Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plot 11 (2030) Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plot 11 (2030) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plot 11 (2030) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plot 11 (2030) Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plot 11 (2030) Temporary Utilities	Cranes	1	10	445	0.29	260	335,530
Plot 11 (2030) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	260	3,931
Plot 11 (2030) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 11 (2030) Paving	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2030) Paving	Pavers	1	10	126	0.42	260	137,592
Plot 11 (2030) Paving	Paving Equipment	1	10	131	0.36	260	122,616
Plot 11 (2030) Paving	Plate Compactors	1	10	8	0.43	260	8,944
Plot 11 (2030) Paving	Rollers	1	10	81	0.38	260	80,028
Plot 11 (2030) Paving	Scrapers	1	10	362	0.48	260	451,776

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 11 (2030) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	260	173,160
Plot 11 (2031) Mass Excavation	Graders	1	10	193	0.41	260	205,738
Plot 11 (2031) Mass Excavation	Off-Highway Trucks	1	10	400	0.38	260	395,200
Plot 11 (2031) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2031) Mass Excavation	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2031) Mass Excavation	Plate Compactors	1	10	354	0.43	260	395,772
Plot 11 (2031) Mass Excavation	Plate Compactors	1	10	354	0.43	260	395,772
Plot 11 (2031) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	260	317,200
Plot 11 (2031) Mass Excavation	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plot 11 (2031) Mass Excavation	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plot 11 (2031) Mass Excavation	Scrapers	6	10	550	0.48	260	4,118,400
Plot 11 (2031) Mass Excavation	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 11 (2031) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2031) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2031) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plot 11 (2031) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plot 11 (2031) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 11 (2031) Utilities	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 11 (2031) Utilities	Excavators	1	10	523	0.38	260	516,724
Plot 11 (2031) Utilities	Excavators	5	10	286	0.38	260	1,412,840
Plot 11 (2031) Utilities	Excavators	1	10	190	0.38	260	187,720
Plot 11 (2031) Utilities	Excavators	2	10	396	0.38	260	782,496
Plot 11 (2031) Utilities	Excavators	1	10	190	0.38	260	187,720
Plot 11 (2031) Utilities	Excavators	1	10	188	0.38	260	185,744
Plot 11 (2031) Utilities	Excavators	4	10	40	0.38	260	158,080
Plot 11 (2031) Utilities	Forklifts	2	10	89	0.2	260	92,560
Plot 11 (2031) Utilities	Other Material Handling Equipment	4	1	167	0.4	260	69,472
Plot 11 (2031) Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plot 11 (2031) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 11 (2031) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 11 (2031) Building-Concrete	Cement and Mortar Mixers	10	1	9	0.56	260	13,104
Plot 11 (2031) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2031) Building-Concrete	Pumps	1	10	84	0.74	260	161,616
Plot 11 (2031) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 11 (2031) Building-Wet Utilities	Excavators	1	10	300	0.38	260	296,400
Plot 11 (2031) Building-Wet Utilities	Excavators	1	10	179	0.38	260	176,852
Plot 11 (2031) Building-Wet Utilities	Excavators	1	10	173	0.38	260	170,924
Plot 11 (2031) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plot 11 (2031) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	260	426,816
Plot 11 (2031) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	260	311,688

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 11 (2031) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plot 11 (2031) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 11 (2031) Building-Electrical	Excavators	4	10	40	0.38	260	158,080
Plot 11 (2031) Building-Electrical	Forklifts	2	10	89	0.2	260	92,560
Plot 11 (2031) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2031) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 11 (2031) Building-Landscaping	Excavators	1	10	29	0.38	260	28,652
Plot 11 (2031) Building-Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plot 11 (2031) Building-Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2031) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 11 (2031) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plot 11 (2031) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plot 11 (2031) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plot 11 (2031) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plot 11 (2031) Building-Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plot 11 (2031) Landscaping	Excavators	1	10	29	0.38	260	28,652
Plot 11 (2031) Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plot 11 (2031) Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 11 (2031) Landscaping	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plot 11 (2031) Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plot 11 (2031) Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plot 11 (2031) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plot 11 (2031) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plot 11 (2031) Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plot 11 (2031) Temporary Utilities	Cranes	1	10	445	0.29	260	335,530
Plot 11 (2031) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	260	3,931
Plot 11 (2031) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 11 (2031) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	260	92,664
Plot 11 (2031) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	260	122,616
Plot 11 (2031) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	260	52,910
Plot 11 (2031) Paving	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 11 (2031) Paving	Pavers	1	10	126	0.42	260	137,592
Plot 11 (2031) Paving	Paving Equipment	1	10	131	0.36	260	122,616
Plot 11 (2031) Paving	Plate Compactors	1	10	8	0.43	260	8,944
Plot 11 (2031) Paving	Rollers	1	10	81	0.38	260	80,028
Plot 11 (2031) Paving	Scrapers	1	10	362	0.48	260	451,776
Plot 11 (2031) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	260	173,160
Plots 11 and 12 (2032) Mass Excavation	Rubber Tired Dozers	1	10	305	0.4	260	317,200
Plots 11 and 12 (2032) Mass Excavation	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plots 11 and 12 (2032) Mass Excavation	Scrapers	6	10	550	0.48	260	4,118,400

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 11 and 12 (2032) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 12 (2032) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 12 (2032) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plots 11 and 12 (2032) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plots 11 and 12 (2032) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 11 and 12 (2032) Utilities	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plots 11 and 12 (2032) Utilities	Excavators	1	10	523	0.38	260	516,724
Plots 11 and 12 (2032) Utilities	Excavators	5	10	286	0.38	260	1,412,840
Plots 11 and 12 (2032) Utilities	Excavators	1	10	190	0.38	260	187,720
Plots 11 and 12 (2032) Utilities	Excavators	2	10	396	0.38	260	782,496
Plots 11 and 12 (2032) Utilities	Excavators	1	10	190	0.38	260	187,720
Plots 11 and 12 (2032) Utilities	Excavators	1	10	188	0.38	260	185,744
Plots 11 and 12 (2032) Utilities	Excavators	4	10	40	0.38	260	158,080
Plots 11 and 12 (2032) Utilities	Forklifts	2	10	89	0.2	260	92,560
Plots 11 and 12 (2032) Utilities	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 11 and 12 (2032) Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plots 11 and 12 (2032) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 11 and 12 (2032) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 11 and 12 (2032) Building-Concrete	Cement and Mortar Mixers	10	1	9	0.56	260	13,104
Plots 11 and 12 (2032) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 12 (2032) Building-Concrete	Pumps	1	10	84	0.74	260	161,616
Plots 11 and 12 (2032) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 11 and 12 (2032) Building-Wet Utilities	Excavators	1	10	300	0.38	260	296,400
Plots 11 and 12 (2032) Building-Wet Utilities	Excavators	1	10	179	0.38	260	176,852
Plots 11 and 12 (2032) Building-Wet Utilities	Excavators	1	10	173	0.38	260	170,924
Plots 11 and 12 (2032) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plots 11 and 12 (2032) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	260	426,816
Plots 11 and 12 (2032) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	260	311,688
Plots 11 and 12 (2032) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plots 11 and 12 (2032) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plots 11 and 12 (2032) Building-Electrical	Excavators	4	10	40	0.38	260	158,080
Plots 11 and 12 (2032) Building-Electrical	Forklifts	2	10	89	0.2	260	92,560
Plots 11 and 12 (2032) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 11 and 12 (2032) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 11 and 12 (2032) Building-Landscaping	Excavators	1	10	29	0.38	260	28,652
Plots 11 and 12 (2032) Building-Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plots 11 and 12 (2032) Building-Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 12 (2032) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 11 and 12 (2032) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plots 11 and 12 (2032) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 11 and 12 (2032) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plots 11 and 12 (2032) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plots 11 and 12 (2032) Building-Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plots 11 and 12 (2032) Landscaping	Excavators	1	10	29	0.38	260	28,652
Plots 11 and 12 (2032) Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plots 11 and 12 (2032) Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 11 and 12 (2032) Landscaping	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plots 11 and 12 (2032) Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plots 11 and 12 (2032) Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plots 11 and 12 (2032) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plots 11 and 12 (2032) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plots 11 and 12 (2032) Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plots 11 and 12 (2032) Temporary Utilities	Cranes	1	10	445	0.29	260	335,530
Plots 11 and 12 (2032) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	260	3,931
Plots 11 and 12 (2032) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 11 and 12 (2032) Paving	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 11 and 12 (2032) Paving	Pavers	1	10	126	0.42	260	137,592
Plots 11 and 12 (2032) Paving	Paving Equipment	1	10	131	0.36	260	122,616
Plots 11 and 12 (2032) Paving	Plate Compactors	1	10	8	0.43	260	8,944
Plots 11 and 12 (2032) Paving	Rollers	1	10	81	0.38	260	80,028
Plots 11 and 12 (2032) Paving	Scrapers	1	10	362	0.48	260	451,776
Plots 11 and 12 (2032) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	260	173,160
Plot 12 (2033) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 12 (2033) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 12 (2033) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plot 12 (2033) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plot 12 (2033) Utilities	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 12 (2033) Utilities	Excavators	1	10	523	0.38	260	516,724
Plot 12 (2033) Utilities	Excavators	5	10	286	0.38	260	1,412,840
Plot 12 (2033) Utilities	Excavators	1	10	190	0.38	260	187,720
Plot 12 (2033) Utilities	Excavators	2	10	396	0.38	260	782,496
Plot 12 (2033) Utilities	Excavators	1	10	190	0.38	260	187,720
Plot 12 (2033) Utilities	Excavators	1	10	188	0.38	260	185,744
Plot 12 (2033) Utilities	Excavators	4	10	40	0.38	260	158,080
Plot 12 (2033) Utilities	Forklifts	2	10	89	0.2	260	92,560
Plot 12 (2033) Utilities	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 12 (2033) Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plot 12 (2033) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plot 12 (2033) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 12 (2033) Building-Concrete	Cement and Mortar Mixers	10	1	9	0.56	260	13,104

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 12 (2033) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 12 (2033) Building-Concrete	Pumps	1	10	84	0.74	260	161,616
Plot 12 (2033) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 12 (2033) Building-Wet Utilities	Excavators	1	10	300	0.38	260	296,400
Plot 12 (2033) Building-Wet Utilities	Excavators	1	10	179	0.38	260	176,852
Plot 12 (2033) Building-Wet Utilities	Excavators	1	10	173	0.38	260	170,924
Plot 12 (2033) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plot 12 (2033) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	260	426,816
Plot 12 (2033) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	260	311,688
Plot 12 (2033) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plot 12 (2033) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plot 12 (2033) Building-Electrical	Excavators	4	10	40	0.38	260	158,080
Plot 12 (2033) Building-Electrical	Forklifts	2	10	89	0.2	260	92,560
Plot 12 (2033) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plot 12 (2033) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plot 12 (2033) Building-Landscaping	Excavators	1	10	29	0.38	260	28,652
Plot 12 (2033) Building-Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plot 12 (2033) Building-Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 12 (2033) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 12 (2033) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plot 12 (2033) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plot 12 (2033) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plot 12 (2033) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plot 12 (2033) Building-Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plot 12 (2033) Landscaping	Excavators	1	10	29	0.38	260	28,652
Plot 12 (2033) Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plot 12 (2033) Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plot 12 (2033) Landscaping	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plot 12 (2033) Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plot 12 (2033) Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plot 12 (2033) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plot 12 (2033) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plot 12 (2033) Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plot 12 (2033) Temporary Utilities	Cranes	1	10	445	0.29	260	335,530
Plot 12 (2033) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	260	3,931
Plot 12 (2033) Curbing/Drive Approaches	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plot 12 (2033) Curbing/Drive Approaches	Paving Equipment	1	10	99	0.36	260	92,664
Plot 12 (2033) Curbing/Drive Approaches	Paving Equipment	1	10	131	0.36	260	122,616
Plot 12 (2033) Curbing/Drive Approaches	Tractors/Loaders/Backhoes	1	10	55	0.37	260	52,910
Plot 12 (2033) Paving	Other Material Handling Equipment	3	1	167	0.4	260	52,104

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plot 12 (2033) Paving	Pavers	1	10	126	0.42	260	137,592
Plot 12 (2033) Paving	Paving Equipment	1	10	131	0.36	260	122,616
Plot 12 (2033) Paving	Plate Compactors	1	10	8	0.43	260	8,944
Plot 12 (2033) Paving	Rollers	1	10	81	0.38	260	80,028
Plot 12 (2033) Paving	Scrapers	1	10	362	0.48	260	451,776
Plot 12 (2033) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	260	173,160
Plots 12 and 21,22 (2034) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 12 and 21,22 (2034) Finish Grading	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 12 and 21,22 (2034) Finish Grading	Rubber Tired Dozers	1	10	140	0.4	260	145,600
Plots 12 and 21,22 (2034) Finish Grading	Rubber Tired Dozers	1	10	85	0.4	260	88,400
Plots 12 and 21,22 (2034) Finish Grading	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 12 and 21,22 (2034) Utilities	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plots 12 and 21,22 (2034) Utilities	Excavators	1	10	523	0.38	260	516,724
Plots 12 and 21,22 (2034) Utilities	Excavators	5	10	286	0.38	260	1,412,840
Plots 12 and 21,22 (2034) Utilities	Excavators	1	10	190	0.38	260	187,720
Plots 12 and 21,22 (2034) Utilities	Excavators	2	10	396	0.38	260	782,496
Plots 12 and 21,22 (2034) Utilities	Excavators	1	10	190	0.38	260	187,720
Plots 12 and 21,22 (2034) Utilities	Excavators	1	10	188	0.38	260	185,744
Plots 12 and 21,22 (2034) Utilities	Excavators	4	10	40	0.38	260	158,080
Plots 12 and 21,22 (2034) Utilities	Forklifts	2	10	89	0.2	260	92,560
Plots 12 and 21,22 (2034) Utilities	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 12 and 21,22 (2034) Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plots 12 and 21,22 (2034) Utilities	Tractors/Loaders/Backhoes	1	10	85	0.37	260	81,770
Plots 12 and 21,22 (2034) Utilities	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 12 and 21,22 (2034) Building-Concrete	Cement and Mortar Mixers	5	1	9	0.56	260	6,552
Plots 12 and 21,22 (2034) Building-Concrete	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 12 and 21,22 (2034) Building-Concrete	Pumps	1	10	84	0.74	260	161,616
Plots 12 and 21,22 (2034) Building-Concrete	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320
Plots 12 and 21,22 (2034) Building-Wet Utilities	Excavators	1	10	300	0.38	260	296,400
Plots 12 and 21,22 (2034) Building-Wet Utilities	Excavators	1	10	179	0.38	260	176,852
Plots 12 and 21,22 (2034) Building-Wet Utilities	Excavators	1	10	173	0.38	260	170,924
Plots 12 and 21,22 (2034) Building-Wet Utilities	Other Material Handling Equipment	8	1	167	0.4	260	138,944
Plots 12 and 21,22 (2034) Building-Wet Utilities	Rubber Tired Loaders	3	10	152	0.36	260	426,816
Plots 12 and 21,22 (2034) Building-Wet Utilities	Tractors/Loaders/Backhoes	3	10	108	0.37	260	311,688
Plots 12 and 21,22 (2034) Building-Wet Utilities	Tractors/Loaders/Backhoes	2	10	85	0.37	260	163,540
Plots 12 and 21,22 (2034) Building-Electrical	Cement and Mortar Mixers	4	1	9	0.56	260	5,242
Plots 12 and 21,22 (2034) Building-Electrical	Excavators	4	10	40	0.38	260	158,080
Plots 12 and 21,22 (2034) Building-Electrical	Forklifts	2	10	89	0.2	260	92,560
Plots 12 and 21,22 (2034) Building-Electrical	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 12 and 21,22 (2034) Building-Electrical	Tractors/Loaders/Backhoes	4	10	90	0.37	260	346,320

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 12 and 21,22 (2034) Building-Landscaping	Excavators	1	10	29	0.38	260	28,652
Plots 12 and 21,22 (2034) Building-Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plots 12 and 21,22 (2034) Building-Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 12 and 21,22 (2034) Building-Landscaping	Other Material Handling Equipment	2	1	167	0.4	260	34,736
Plots 12 and 21,22 (2034) Building-Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plots 12 and 21,22 (2034) Building-Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plots 12 and 21,22 (2034) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plots 12 and 21,22 (2034) Building-Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plots 12 and 21,22 (2034) Building-Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plots 12 and 21,22 (2034) Landscaping	Excavators	1	10	29	0.38	260	28,652
Plots 12 and 21,22 (2034) Landscaping	Forklifts	1	10	125	0.2	260	65,000
Plots 12 and 21,22 (2034) Landscaping	Other Material Handling Equipment	1	1	167	0.4	260	17,368
Plots 12 and 21,22 (2034) Landscaping	Other Material Handling Equipment	5	1	167	0.4	260	86,840
Plots 12 and 21,22 (2034) Landscaping	Rubber Tired Loaders	1	10	149	0.36	260	139,464
Plots 12 and 21,22 (2034) Landscaping	Skid Steer Loaders	1	10	69	0.37	260	66,378
Plots 12 and 21,22 (2034) Landscaping	Tractors/Loaders/Backhoes	1	10	73	0.37	260	70,226
Plots 12 and 21,22 (2034) Landscaping	Tractors/Loaders/Backhoes	1	10	78	0.37	260	75,036
Plots 12 and 21,22 (2034) Landscaping	Trenchers	1	10	39	0.5	260	50,700
Plots 12 and 21,22 (2034) Temporary Utilities	Cranes	1	10	445	0.29	260	335,530
Plots 12 and 21,22 (2034) Curbing/Drive Approaches	Cement and Mortar Mixers	3	1	9	0.56	260	3,931
Plots 12 and 21,22 (2034) Paving	Other Material Handling Equipment	3	1	167	0.4	260	52,104
Plots 12 and 21,22 (2034) Paving	Pavers	1	10	126	0.42	260	137,592
Plots 12 and 21,22 (2034) Paving	Paving Equipment	1	10	131	0.36	260	122,616
Plots 12 and 21,22 (2034) Paving	Plate Compactors	1	10	8	0.43	260	8,944
Plots 12 and 21,22 (2034) Paving	Rollers	1	10	81	0.38	260	80,028
Plots 12 and 21,22 (2034) Paving	Scrapers	1	10	362	0.48	260	451,776
Plots 12 and 21,22 (2034) Paving	Tractors/Loaders/Backhoes	2	10	90	0.37	260	173,160
Plots 2 and 4 (2020) Building Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 2 and 4 (2020) Building Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 2 and 4 (2020) Building Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 2 and 4 (2020) Building Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 2 and 4 (2020) Building Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 2 and 4 (2020) Building Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 4 (2021) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 4 (2021) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 4 (2021) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 4 (2021) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 4 (2021) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 4 (2021) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 4 and 9 (2022) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 4 and 9 (2022) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 4 and 9 (2022) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 4 and 9 (2022) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 4 and 9 (2022) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 4 and 9 (2022) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 9 (2023) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 9 (2023) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 9 (2023) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 9 (2023) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 9 (2023) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 9 (2023) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 9 and 1,3,20 (2024) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 9 and 1,3,20 (2024) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 9 and 1,3,20 (2024) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 9 and 1,3,20 (2024) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 9 and 1,3,20 (2024) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 9 and 1,3,20 (2024) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 5 and 10 (2025) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 5 and 10 (2025) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 5 and 10 (2025) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 5 and 10 (2025) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 5 and 10 (2025) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 5 and 10 (2025) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 10 and 8 (2026) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 10 and 8 (2026) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 10 and 8 (2026) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 10 and 8 (2026) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 10 and 8 (2026) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 10 and 8 (2026) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 8 (2027) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 8 (2027) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 8 (2027) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 8 (2027) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 8 (2027) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 8 (2027) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 11 and 6,7 (2028) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 11 and 6,7 (2028) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 11 and 6,7 (2028) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 11 and 6,7 (2028) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 11 and 6,7 (2028) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Plots 11 and 6,7 (2028) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 11 (2029) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 11 (2029) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 11 (2029) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 11 (2029) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 11 (2029) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 11 (2029) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 11 (2030) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 11 (2030) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 11 (2030) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 11 (2030) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 11 (2030) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 11 (2030) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 11 (2031) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 11 (2031) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 11 (2031) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 11 (2031) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 11 (2031) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 11 (2031) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 11 and 12 (2032) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 11 and 12 (2032) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 11 and 12 (2032) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 11 and 12 (2032) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 11 and 12 (2032) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 11 and 12 (2032) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plot 12 (2033) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plot 12 (2033) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plot 12 (2033) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plot 12 (2033) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plot 12 (2033) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plot 12 (2033) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
Plots 12 and 21,22 (2034) Building-Concrete	Cement and Mortar Mixers	24	24	9	0.56	10	29,030
Plots 12 and 21,22 (2034) Building-Concrete	Generator Sets	4	12	84	0.74	10	29,837
Plots 12 and 21,22 (2034) Building-Concrete	Other Material Handling Equipment	2	24	167	0.4	10	32,064
Plots 12 and 21,22 (2034) Building-Concrete	Pumps	2	24	84	0.74	10	29,837
Plots 12 and 21,22 (2034) Building-Concrete	Tractors/Loaders/Backhoes	8	24	90	0.37	10	63,936
Plots 12 and 21,22 (2034) Building-Concrete	Tractors/Loaders/Backhoes	4	24	85	0.37	10	30,192
						Total >100	333,571,957

Building Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
						Total <100	72,413,316

World Logistics Center
Construction Energy Analysis

On-Road Workers (LDA, LDT1, LDT2)

EMFAC2014 Gasoline Fuel Consumption Factor:[1]	0.0362	gallons/mile	miles/gallon
Total Worker VMT:	457,663	miles	27.7
Total VMT gasoline gallons (workers):	**16,549**		

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; LDA, LDT1, LDT2; CY 2017; Aggregate MY; Aggregate Speed)

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plots 2 and 4 (2020) Mass Excavation	262	50	0.5	6,550
Plots 2 and 4 (2020) Finish Grading	262	15	0.5	1,965
Plots 2 and 4 (2020) Utilities	262	40	0.5	5,240
Plots 2 and 4 (2020) Landscaping	262	10	0.5	1,310
Plots 2 and 4 (2020) Building Concrete	262	25	0.5	3,275
Plots 2 and 4 (2020) Building-Wet Utilities	262	25	0.5	3,275
Plots 2 and 4 (2020) Building-Electrical	262	15	0.5	1,965
Plots 2 and 4 (2020) Temporary Utilities	262	0	0.5	-
Plots 2 and 4 (2020) Building-Landscaping	262	10	0.5	1,310
Plots 2 and 4 (2020) Paving	262	25	0.5	3,275
Plots 2 and 4 (2020) Curbing/Drive Approaches	262	10	0.5	1,310
Plot 4 (2021) Mass Excavation	261	50	0.5	6,525
Plot 4 (2021) Finish Grading	261	15	0.5	1,958
Plot 4 (2021) Utilities	261	40	0.5	5,220
Plot 4 (2021) Building-Concrete	261	25	0.5	3,263
Plot 4 (2021) Building-Wet Utilities	261	25	0.5	3,263
Plot 4 (2021) Building-Electrical	261	15	0.5	1,958
Plot 4 (2021) Building-Landscaping	261	10	0.5	1,305
Plot 4 (2021) Landscaping	261	10	0.5	1,305
Plot 4 (2021) Temporary Utilities	261	0	0.5	-
Plot 4 (2021) Curbing/Drive Approaches	261	10	0.5	1,305
Plot 4 (2021) Paving	261	25	0.5	3,263
Plots 4 and 9 (2022) Mass Excavation	260	50	0.5	6,500
Plots 4 and 9 (2022) Finish Grading	260	12.5	0.5	1,625
Plots 4 and 9 (2022) Utilities	260	25	0.5	3,250
Plots 4 and 9 (2022) Building-Concrete	260	37.5	0.5	4,875
Plots 4 and 9 (2022) Building-Wet Utilities	260	25	0.5	3,250

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plots 4 and 9 (2022) Building-Electrical	260	15	0.5	1,950
Plots 4 and 9 (2022) Building-Landscaping	260	17.5	0.5	2,275
Plots 4 and 9 (2022) Landscaping	260	25	0.5	3,250
Plots 4 and 9 (2022) Temporary Utilities	260	0	0.5	-
Plots 4 and 9 (2022) Curbing/Drive Approaches	260	12.5	0.5	1,625
Plots 4 and 9 (2022) Paving	260	17.5	0.5	2,275
Plot 9 (2023) Mass Excavation	260	50	0.5	6,500
Plot 9 (2023) Finish Grading	260	10	0.5	1,300
Plot 9 (2023) Utilities	260	10	0.5	1,300
Plot 9 (2023) Building-Concrete	260	50	0.5	6,500
Plot 9 (2023) Building-Wet Utilities	260	25	0.5	3,250
Plot 9 (2023) Building-Electrical	260	15	0.5	1,950
Plot 9 (2023) Building-Landscaping	260	25	0.5	3,250
Plot 9 (2023) Interchange	260	0	0.5	-
Plot 9 (2023) Landscaping	260	40	0.5	5,200
Plot 9 (2023) Temporary Utilities	260	0	0.5	-
Plot 9 (2023) Curbing/Drive Approaches	260	15	0.5	1,950
Plot 9 (2023) Paving	260	10	0.5	1,300
Plots 9 and 1,3,20 (2024) Mass Excavation	261	50	0.5	6,525
Plots 9 and 1,3,20 (2024) Finish Grading	262	25	0.5	3,275
Plots 9 and 1,3,20 (2024) Utilities	262	25	0.5	3,275
Plots 9 and 1,3,20 (2024) Building-Concrete	262	37.5	0.5	4,913
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	262	25	0.5	3,275
Plots 9 and 1,3,20 (2024) Building-Electrical	262	15	0.5	1,965
Plots 9 and 1,3,20 (2024) Building-Landscaping	262	17.5	0.5	2,293
Plots 9 and 1,3,20 (2024) Interchange	262	12.5	0.5	1,638
Plots 9 and 1,3,20 (2024) Landscaping	262	25	0.5	3,275
Plots 9 and 1,3,20 (2024) Temporary Utilities	262	0	0.5	-
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	262	10	0.5	1,310
Plots 9 and 1,3,20 (2024) Paving	262	17.5	0.5	2,293
Plots 5 and 10 (2025) Mass Excavation	261	50	0.5	6,525
Plots 5 and 10 (2025) Finish Grading	261	15	0.5	1,958
Plots 5 and 10 (2025) Utilities	261	40	0.5	5,220
Plots 5 and 10 (2025) Building-Concrete	261	10	0.5	1,305
Plots 5 and 10 (2025) Building-Wet Utilities	261	25	0.5	3,263
Plots 5 and 10 (2025) Building-Electrical	261	25	0.5	3,263
Plots 5 and 10 (2025) Building-Landscaping	261	15	0.5	1,958
Plots 5 and 10 (2025) Landscaping	261	0	0.5	-
Plots 5 and 10 (2025) Temporary Utilities	261	10	0.5	1,305
Plots 5 and 10 (2025) Curbing/Drive Approaches	261	25	0.5	3,263

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plots 5 and 10 (2025) Paving	261	10	0.5	1,305
Plots 10 and 8 (2026) Mass Excavation	261	50	0.5	6,525
Plots 10 and 8 (2026) Finish Grading	261	15	0.5	1,958
Plots 10 and 8 (2026) Utilities	261	40	0.5	5,220
Plots 10 and 8 (2026) Building-Concrete	261	25	0.5	3,263
Plots 10 and 8 (2026) Building-Wet Utilities	261	25	0.5	3,263
Plots 10 and 8 (2026) Building-Electrical	261	15	0.5	1,958
Plots 10 and 8 (2026) Building-Landscaping	261	10	0.5	1,305
Plots 10 and 8 (2026) Landscaping	261	10	0.5	1,305
Plots 10 and 8 (2026) Temporary Utilities	261	0	0.5	-
Plots 10 and 8 (2026) Curbing/Drive Approaches	261	10	0.5	1,305
Plots 10 and 8 (2026) Paving	261	25	0.5	3,263
Plot 8 (2027) Mass Excavation	261	50	0.5	6,525
Plot 8 (2027) Finish Grading	261	12.5	0.5	1,631
Plot 8 (2027) Utilities	261	25	0.5	3,263
Plot 8 (2027) Building-Concrete	261	37.5	0.5	4,894
Plot 8 (2027) Building-Wet Utilities	261	25	0.5	3,263
Plot 8 (2027) Building-Electrical	261	15	0.5	1,958
Plot 8 (2027) Building-Landscaping	261	17.5	0.5	2,284
Plot 8 (2027) Landscaping	261	25	0.5	3,263
Plot 8 (2027) Temporary Utilities	261	0	0.5	-
Plot 8 (2027) Curbing/Drive Approaches	261	12.5	0.5	1,631
Plot 8 (2027) Paving	261	17.5	0.5	2,284
Plots 11 and 6,7 (2028) Mass Excavation	260	50	0.5	6,500
Plots 11 and 6,7 (2028) Finish Grading	260	10	0.5	1,300
Plots 11 and 6,7 (2028) Utilities	260	10	0.5	1,300
Plots 11 and 6,7 (2028) Building-Concrete	260	50	0.5	6,500
Plots 11 and 6,7 (2028) Building-Wet Utilities	260	25	0.5	3,250
Plots 11 and 6,7 (2028) Building-Electrical	260	15	0.5	1,950
Plots 11 and 6,7 (2028) Building-Landscaping	260	25	0.5	3,250
Plots 11 and 6,7 (2028) Landscaping	260	0	0.5	-
Plots 11 and 6,7 (2028) Temporary Utilities	260	40	0.5	5,200
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	260	0	0.5	-
Plots 11 and 6,7 (2028) Paving	260	15	0.5	1,950
Plot 11 (2029) Mass Excavation	261	10	0.5	1,305
Plot 11 (2029) Finish Grading	261	50	0.5	6,525
Plot 11 (2029) Utilities	261	25	0.5	3,263
Plot 11 (2029) Building-Concrete	261	25	0.5	3,263
Plot 11 (2029) Building-Wet Utilities	261	37.5	0.5	4,894
Plot 11 (2029) Building-Electrical	261	25	0.5	3,263

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plot 11 (2029) Building-Landscaping	261	15	0.5	1,958
Plot 11 (2029) Landscaping	261	17.5	0.5	2,284
Plot 11 (2029) Temporary Utilities	261	12.5	0.5	1,631
Plot 11 (2029) Curbing/Drive Approaches	261	25	0.5	3,263
Plot 11 (2029) Paving	261	0	0.5	-
Plot 11 (2030) Mass Excavation	260	50	0.5	6,500
Plot 11 (2030) Finish Grading	260	15	0.5	1,950
Plot 11 (2030) Utilities	260	40	0.5	5,200
Plot 11 (2030) Building-Concrete	260	10	0.5	1,300
Plot 11 (2030) Building-Wet Utilities	260	25	0.5	3,250
Plot 11 (2030) Building-Electrical	260	25	0.5	3,250
Plot 11 (2030) Building-Landscaping	260	15	0.5	1,950
Plot 11 (2030) Landscaping	260	0	0.5	-
Plot 11 (2030) Temporary Utilities	260	10	0.5	1,300
Plot 11 (2030) Curbing/Drive Approaches	260	25	0.5	3,250
Plot 11 (2030) Paving	260	10	0.5	1,300
Plot 11 (2031) Mass Excavation	260	50	0.5	6,500
Plot 11 (2031) Finish Grading	260	15	0.5	1,950
Plot 11 (2031) Utilities	260	40	0.5	5,200
Plot 11 (2031) Building-Concrete	260	25	0.5	3,250
Plot 11 (2031) Building-Wet Utilities	260	25	0.5	3,250
Plot 11 (2031) Building-Electrical	260	15	0.5	1,950
Plot 11 (2031) Building-Landscaping	260	10	0.5	1,300
Plot 11 (2031) Landscaping	260	10	0.5	1,300
Plot 11 (2031) Temporary Utilities	260	0	0.5	-
Plot 11 (2031) Curbing/Drive Approaches	260	10	0.5	1,300
Plot 11 (2031) Paving	260	25	0.5	3,250
Plots 11 and 12 (2032) Mass Excavation	260	50	0.5	6,500
Plots 11 and 12 (2032) Finish Grading	260	12.5	0.5	1,625
Plots 11 and 12 (2032) Utilities	260	25	0.5	3,250
Plots 11 and 12 (2032) Building-Concrete	260	37.5	0.5	4,875
Plots 11 and 12 (2032) Building-Wet Utilities	260	25	0.5	3,250
Plots 11 and 12 (2032) Building-Electrical	260	15	0.5	1,950
Plots 11 and 12 (2032) Building-Landscaping	260	17.5	0.5	2,275
Plots 11 and 12 (2032) Landscaping	260	25	0.5	3,250
Plots 11 and 12 (2032) Temporary Utilities	260	0	0.5	-
Plots 11 and 12 (2032) Curbing/Drive Approaches	260	12.5	0.5	1,625
Plots 11 and 12 (2032) Paving	260	17.5	0.5	2,275
Plot 12 (2033) Finish Grading	260	50	0.5	6,500
Plot 12 (2033) Utilities	260	10	0.5	1,300

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plot 12 (2033) Building-Concrete	260	10	0.5	1,300
Plot 12 (2033) Building-Wet Utilities	260	50	0.5	6,500
Plot 12 (2033) Building-Electrical	260	25	0.5	3,250
Plot 12 (2033) Building-Landscaping	260	15	0.5	1,950
Plot 12 (2033) Landscaping	260	25	0.5	3,250
Plot 12 (2033) Temporary Utilities	260	0	0.5	-
Plot 12 (2033) Curbing/Drive Approaches	260	40	0.5	5,200
Plot 12 (2033) Paving	260	0	0.5	-
Plots 12 and 21,22 (2034) Finish Grading	260	15	0.5	1,950
Plots 12 and 21,22 (2034) Utilities	260	10	0.5	1,300
Plots 12 and 21,22 (2034) Building-Concrete	260	50	0.5	6,500
Plots 12 and 21,22 (2034) Building-Wet Utilities	260	25	0.5	3,250
Plots 12 and 21,22 (2034) Building-Electrical	260	25	0.5	3,250
Plots 12 and 21,22 (2034) Building-Landscaping	260	37.5	0.5	4,875
Plots 12 and 21,22 (2034) Landscaping	260	25	0.5	3,250
Plots 12 and 21,22 (2034) Temporary Utilities	260	15	0.5	1,950
Plots 12 and 21,22 (2034) Curbing/Drive Approaches	260	17.5	0.5	2,275
Plots 12 and 21,22 (2034) Paving	260	12.5	0.5	1,625
			Total Worker VMT:	**457,663**

World Logistics Center
Construction Energy Analysis

On-Road Workers (LDA, LDT1, LDT2)

EMFAC2014 Gasoline Fuel Consumption Factor:[1]	0.0362	gallons/mile	miles/gallon
Total Worker VMT:	22,883,125	miles	27.7
Total VMT gasoline gallons (workers):	**827,463**		

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; LDA, LDT1, LDT2; CY 2017; Aggregate MY; Aggregate Speed)

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plots 2 and 4 (2020) Mass Excavation	262	50	25	327,500
Plots 2 and 4 (2020) Finish Grading	262	15	25	98,250
Plots 2 and 4 (2020) Utilities	262	40	25	262,000
Plots 2 and 4 (2020) Landscaping	262	10	25	65,500
Plots 2 and 4 (2020) Building Concrete	262	25	25	163,750
Plots 2 and 4 (2020) Building-Wet Utilities	262	25	25	163,750
Plots 2 and 4 (2020) Building-Electrical	262	15	25	98,250
Plots 2 and 4 (2020) Temporary Utilities	262	0	25	-
Plots 2 and 4 (2020) Building-Landscaping	262	10	25	65,500
Plots 2 and 4 (2020) Paving	262	25	25	163,750
Plots 2 and 4 (2020) Curbing/Drive Approaches	262	10	25	65,500
Plot 4 (2021) Mass Excavation	261	50	25	326,250
Plot 4 (2021) Finish Grading	261	15	25	97,875
Plot 4 (2021) Utilities	261	40	25	261,000
Plot 4 (2021) Building-Concrete	261	25	25	163,125
Plot 4 (2021) Building-Wet Utilities	261	25	25	163,125
Plot 4 (2021) Building-Electrical	261	15	25	97,875
Plot 4 (2021) Building-Landscaping	261	10	25	65,250
Plot 4 (2021) Landscaping	261	10	25	65,250
Plot 4 (2021) Temporary Utilities	261	0	25	-
Plot 4 (2021) Curbing/Drive Approaches	261	10	25	65,250
Plot 4 (2021) Paving	261	25	25	163,125
Plots 4 and 9 (2022) Mass Excavation	260	50	25	325,000
Plots 4 and 9 (2022) Finish Grading	260	12.5	25	81,250
Plots 4 and 9 (2022) Utilities	260	25	25	162,500
Plots 4 and 9 (2022) Building-Concrete	260	37.5	25	243,750
Plots 4 and 9 (2022) Building-Wet Utilities	260	25	25	162,500

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plots 4 and 9 (2022) Building-Electrical	260	15	25	97,500
Plots 4 and 9 (2022) Building-Landscaping	260	17.5	25	113,750
Plots 4 and 9 (2022) Landscaping	260	25	25	162,500
Plots 4 and 9 (2022) Temporary Utilities	260	0	25	-
Plots 4 and 9 (2022) Curbing/Drive Approaches	260	12.5	25	81,250
Plots 4 and 9 (2022) Paving	260	17.5	25	113,750
Plot 9 (2023) Mass Excavation	260	50	25	325,000
Plot 9 (2023) Finish Grading	260	10	25	65,000
Plot 9 (2023) Utilities	260	10	25	65,000
Plot 9 (2023) Building-Concrete	260	50	25	325,000
Plot 9 (2023) Building-Wet Utilities	260	25	25	162,500
Plot 9 (2023) Building-Electrical	260	15	25	97,500
Plot 9 (2023) Building-Landscaping	260	25	25	162,500
Plot 9 (2023) Interchange	260	0	25	-
Plot 9 (2023) Landscaping	260	40	25	260,000
Plot 9 (2023) Temporary Utilities	260	0	25	-
Plot 9 (2023) Curbing/Drive Approaches	260	15	25	97,500
Plot 9 (2023) Paving	260	10	25	65,000
Plots 9 and 1,3,20 (2024) Mass Excavation	261	50	25	326,250
Plots 9 and 1,3,20 (2024) Finish Grading	262	25	25	163,750
Plots 9 and 1,3,20 (2024) Utilities	262	25	25	163,750
Plots 9 and 1,3,20 (2024) Building-Concrete	262	37.5	25	245,625
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	262	25	25	163,750
Plots 9 and 1,3,20 (2024) Building-Electrical	262	15	25	98,250
Plots 9 and 1,3,20 (2024) Building-Landscaping	262	17.5	25	114,625
Plots 9 and 1,3,20 (2024) Interchange	262	12.5	25	81,875
Plots 9 and 1,3,20 (2024) Landscaping	262	25	25	163,750
Plots 9 and 1,3,20 (2024) Temporary Utilities	262	0	25	-
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	262	10	25	65,500
Plots 9 and 1,3,20 (2024) Paving	262	17.5	25	114,625
Plots 5 and 10 (2025) Mass Excavation	261	50	25	326,250
Plots 5 and 10 (2025) Finish Grading	261	15	25	97,875
Plots 5 and 10 (2025) Utilities	261	40	25	261,000
Plots 5 and 10 (2025) Building-Concrete	261	10	25	65,250
Plots 5 and 10 (2025) Building-Wet Utilities	261	25	25	163,125
Plots 5 and 10 (2025) Building-Electrical	261	25	25	163,125
Plots 5 and 10 (2025) Building-Landscaping	261	15	25	97,875
Plots 5 and 10 (2025) Landscaping	261	0	25	-
Plots 5 and 10 (2025) Temporary Utilities	261	10	25	65,250
Plots 5 and 10 (2025) Curbing/Drive Approaches	261	25	25	163,125

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plots 5 and 10 (2025) Paving	261	10	25	65,250
Plots 10 and 8 (2026) Mass Excavation	261	50	25	326,250
Plots 10 and 8 (2026) Finish Grading	261	15	25	97,875
Plots 10 and 8 (2026) Utilities	261	40	25	261,000
Plots 10 and 8 (2026) Building-Concrete	261	25	25	163,125
Plots 10 and 8 (2026) Building-Wet Utilities	261	25	25	163,125
Plots 10 and 8 (2026) Building-Electrical	261	15	25	97,875
Plots 10 and 8 (2026) Building-Landscaping	261	10	25	65,250
Plots 10 and 8 (2026) Landscaping	261	10	25	65,250
Plots 10 and 8 (2026) Temporary Utilities	261	0	25	-
Plots 10 and 8 (2026) Curbing/Drive Approaches	261	10	25	65,250
Plots 10 and 8 (2026) Paving	261	25	25	163,125
Plot 8 (2027) Mass Excavation	261	50	25	326,250
Plot 8 (2027) Finish Grading	261	12.5	25	81,563
Plot 8 (2027) Utilities	261	25	25	163,125
Plot 8 (2027) Building-Concrete	261	37.5	25	244,688
Plot 8 (2027) Building-Wet Utilities	261	25	25	163,125
Plot 8 (2027) Building-Electrical	261	15	25	97,875
Plot 8 (2027) Building-Landscaping	261	17.5	25	114,188
Plot 8 (2027) Landscaping	261	25	25	163,125
Plot 8 (2027) Temporary Utilities	261	0	25	-
Plot 8 (2027) Curbing/Drive Approaches	261	12.5	25	81,563
Plot 8 (2027) Paving	261	17.5	25	114,188
Plots 11 and 6,7 (2028) Mass Excavation	260	50	25	325,000
Plots 11 and 6,7 (2028) Finish Grading	260	10	25	65,000
Plots 11 and 6,7 (2028) Utilities	260	10	25	65,000
Plots 11 and 6,7 (2028) Building-Concrete	260	50	25	325,000
Plots 11 and 6,7 (2028) Building-Wet Utilities	260	25	25	162,500
Plots 11 and 6,7 (2028) Building-Electrical	260	15	25	97,500
Plots 11 and 6,7 (2028) Building-Landscaping	260	25	25	162,500
Plots 11 and 6,7 (2028) Landscaping	260	0	25	-
Plots 11 and 6,7 (2028) Temporary Utilities	260	40	25	260,000
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	260	0	25	-
Plots 11 and 6,7 (2028) Paving	260	15	25	97,500
Plot 11 (2029) Mass Excavation	261	10	25	65,250
Plot 11 (2029) Finish Grading	261	50	25	326,250
Plot 11 (2029) Utilities	261	25	25	163,125
Plot 11 (2029) Building-Concrete	261	25	25	163,125
Plot 11 (2029) Building-Wet Utilities	261	37.5	25	244,688
Plot 11 (2029) Building-Electrical	261	25	25	163,125

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plot 11 (2029) Building-Landscaping	261	15	25	97,875
Plot 11 (2029) Landscaping	261	17.5	25	114,188
Plot 11 (2029) Temporary Utilities	261	12.5	25	81,563
Plot 11 (2029) Curbing/Drive Approaches	261	25	25	163,125
Plot 11 (2029) Paving	261	0	25	-
Plot 11 (2030) Mass Excavation	260	50	25	325,000
Plot 11 (2030) Finish Grading	260	15	25	97,500
Plot 11 (2030) Utilities	260	40	25	260,000
Plot 11 (2030) Building-Concrete	260	10	25	65,000
Plot 11 (2030) Building-Wet Utilities	260	25	25	162,500
Plot 11 (2030) Building-Electrical	260	25	25	162,500
Plot 11 (2030) Building-Landscaping	260	15	25	97,500
Plot 11 (2030) Landscaping	260	0	25	-
Plot 11 (2030) Temporary Utilities	260	10	25	65,000
Plot 11 (2030) Curbing/Drive Approaches	260	25	25	162,500
Plot 11 (2030) Paving	260	10	25	65,000
Plot 11 (2031) Mass Excavation	260	50	25	325,000
Plot 11 (2031) Finish Grading	260	15	25	97,500
Plot 11 (2031) Utilities	260	40	25	260,000
Plot 11 (2031) Building-Concrete	260	25	25	162,500
Plot 11 (2031) Building-Wet Utilities	260	25	25	162,500
Plot 11 (2031) Building-Electrical	260	15	25	97,500
Plot 11 (2031) Building-Landscaping	260	10	25	65,000
Plot 11 (2031) Landscaping	260	10	25	65,000
Plot 11 (2031) Temporary Utilities	260	0	25	-
Plot 11 (2031) Curbing/Drive Approaches	260	10	25	65,000
Plot 11 (2031) Paving	260	25	25	162,500
Plots 11 and 12 (2032) Mass Excavation	260	50	25	325,000
Plots 11 and 12 (2032) Finish Grading	260	12.5	25	81,250
Plots 11 and 12 (2032) Utilities	260	25	25	162,500
Plots 11 and 12 (2032) Building-Concrete	260	37.5	25	243,750
Plots 11 and 12 (2032) Building-Wet Utilities	260	25	25	162,500
Plots 11 and 12 (2032) Building-Electrical	260	15	25	97,500
Plots 11 and 12 (2032) Building-Landscaping	260	17.5	25	113,750
Plots 11 and 12 (2032) Landscaping	260	25	25	162,500
Plots 11 and 12 (2032) Temporary Utilities	260	0	25	-
Plots 11 and 12 (2032) Curbing/Drive Approaches	260	12.5	25	81,250
Plots 11 and 12 (2032) Paving	260	17.5	25	113,750
Plot 12 (2033) Finish Grading	260	50	25	325,000
Plot 12 (2033) Utilities	260	10	25	65,000

Building Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Plot 12 (2033) Building-Concrete	260	10	25	65,000
Plot 12 (2033) Building-Wet Utilities	260	50	25	325,000
Plot 12 (2033) Building-Electrical	260	25	25	162,500
Plot 12 (2033) Building-Landscaping	260	15	25	97,500
Plot 12 (2033) Landscaping	260	25	25	162,500
Plot 12 (2033) Temporary Utilities	260	0	25	-
Plot 12 (2033) Curbing/Drive Approaches	260	40	25	260,000
Plot 12 (2033) Paving	260	0	25	-
Plots 12 and 21,22 (2034) Finish Grading	260	15	25	97,500
Plots 12 and 21,22 (2034) Utilities	260	10	25	65,000
Plots 12 and 21,22 (2034) Building-Concrete	260	50	25	325,000
Plots 12 and 21,22 (2034) Building-Wet Utilities	260	25	25	162,500
Plots 12 and 21,22 (2034) Building-Electrical	260	25	25	162,500
Plots 12 and 21,22 (2034) Building-Landscaping	260	37.5	25	243,750
Plots 12 and 21,22 (2034) Landscaping	260	25	25	162,500
Plots 12 and 21,22 (2034) Temporary Utilities	260	15	25	97,500
Plots 12 and 21,22 (2034) Curbing/Drive Approaches	260	17.5	25	113,750
Plots 12 and 21,22 (2034) Paving	260	12.5	25	81,250
			Total Worker VMT:	**22,883,125**

World Logistics Center
Construction Energy Analysis

On-Road Vendor Trucks

			miles/gallomn
	0.1337	gallons/mile	7.5
	169,710	miles	
Total VMT diesel gallons (on-road vendor trucks):	**22,697**		
			Estimated Fuel Savings from
EMFAC2014 Diesel Fuel Consumption Factor:[2]	0.6687	gallons/hour	*Anti-Idling Regulation (64 percent based on*
Total Haul Truck Idle-Hours per Year:	28,285	hours	*estimated CARB emissions reductions):* [3]
Total Idling diesel gallons (on-road haul trucks):	**18,914**		*52,540*
Total diesel gallons (on-road haul trucks):	**41,612**	gal	

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; HHDT and MHDT; Annual; CY 2017; Aggregate MY; Aggregate Speed)
2. California Air Resources Board, EMFAC2017 (South Coast Air Basin; HHDT and MHDT; Annual; CY 2017; Aggregate MY; 5 miles per hour converted to hourly rate)
3. Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, https://www.arb.ca.gov/regact/idling/idling.htm, accessed November 2016.

Building Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
Plots 2 and 4 (2020) Mass Excavation	262	9	0.5	1,179	197
Plots 2 and 4 (2020) Finish Grading	262	2	0.5	262	44
Plots 2 and 4 (2020) Utilities	262	25	0.5	3,275	546
Plots 2 and 4 (2020) Landscaping	262	6	0.5	786	131
Plots 2 and 4 (2020) Building Concrete	262	2	0.5	262	44
Plots 2 and 4 (2020) Building-Wet Utilities	262	15	0.5	1,965	328
Plots 2 and 4 (2020) Building-Electrical	262	6	0.5	786	131
Plots 2 and 4 (2020) Temporary Utilities	262	0	0.5	-	-
Plots 2 and 4 (2020) Building-Landscaping	262	7	0.5	917	153
Plots 2 and 4 (2020) Paving	262	6	0.5	786	131
Plots 2 and 4 (2020) Curbing/Drive Approaches	262	4	0.5	524	87
Plot 4 (2021) Mass Excavation	261	9	0.5	1,175	196
Plot 4 (2021) Finish Grading	261	2	0.5	261	44
Plot 4 (2021) Utilities	261	25	0.5	3,263	544
Plot 4 (2021) Building-Concrete	261	2	0.5	261	44
Plot 4 (2021) Building-Wet Utilities	261	2	0.5	261	44
Plot 4 (2021) Building-Electrical	261	6	0.5	783	131
Plot 4 (2021) Building-Landscaping	261	7	0.5	914	152
Plot 4 (2021) Landscaping	261	6	0.5	783	131
Plot 4 (2021) Temporary Utilities	261	0	0.5	-	-
Plot 4 (2021) Curbing/Drive Approaches	261	4	0.5	522	87
Plot 4 (2021) Paving	261	6	0.5	783	131
Plots 4 and 9 (2022) Mass Excavation	260	12	0.5	1,560	260
Plots 4 and 9 (2022) Finish Grading	260	4.5	0.5	585	98
Plots 4 and 9 (2022) Utilities	260	14.5	0.5	1,885	314

Building Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
Plots 4 and 9 (2022) Building-Concrete	260	8.5	0.5	1,105	184
Plots 4 and 9 (2022) Building-Wet Utilities	260	15	0.5	1,950	325
Plots 4 and 9 (2022) Building-Electrical	260	6	0.5	780	130
Plots 4 and 9 (2022) Building-Landscaping	260	4.5	0.5	585	98
Plots 4 and 9 (2022) Landscaping	260	15.5	0.5	2,015	336
Plots 4 and 9 (2022) Temporary Utilities	260	0	0.5	-	-
Plots 4 and 9 (2022) Curbing/Drive Approaches	260	5	0.5	650	108
Plots 4 and 9 (2022) Paving	260	6	0.5	780	130
Plot 9 (2023) Mass Excavation	260	15	0.5	1,950	325
Plot 9 (2023) Finish Grading	260	7	0.5	910	152
Plot 9 (2023) Utilities	260	4	0.5	520	87
Plot 9 (2023) Building-Concrete	260	15	0.5	1,950	325
Plot 9 (2023) Building-Wet Utilities	260	15	0.5	1,950	325
Plot 9 (2023) Building-Electrical	260	6	0.5	780	130
Plot 9 (2023) Building-Landscaping	260	2	0.5	260	43
Plot 9 (2023) Interchange	260	0	0.5	-	-
Plot 9 (2023) Landscaping	260	25	0.5	3,250	542
Plot 9 (2023) Temporary Utilities	260	0	0.5	-	-
Plot 9 (2023) Curbing/Drive Approaches	260	6	0.5	780	130
Plot 9 (2023) Paving	260	6	0.5	780	130
Plots 9 and 1,3,20 (2024) Mass Excavation	261	11.5	0.5	1,501	250
Plots 9 and 1,3,20 (2024) Finish Grading	262	14.5	0.5	1,900	317
Plots 9 and 1,3,20 (2024) Utilities	262	14.5	0.5	1,900	317
Plots 9 and 1,3,20 (2024) Building-Concrete	262	8.5	0.5	1,114	186
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	262	15	0.5	1,965	328
Plots 9 and 1,3,20 (2024) Building-Electrical	262	6	0.5	786	131
Plots 9 and 1,3,20 (2024) Building-Landscaping	262	4.5	0.5	590	98
Plots 9 and 1,3,20 (2024) Interchange	262	2	0.5	262	44
Plots 9 and 1,3,20 (2024) Landscaping	262	15.5	0.5	2,031	338
Plots 9 and 1,3,20 (2024) Temporary Utilities	262	0	0.5	-	-
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	262	5.5	0.5	721	120
Plots 9 and 1,3,20 (2024) Paving	262	6	0.5	786	131
Plots 5 and 10 (2025) Mass Excavation	261	9	0.5	1,175	196
Plots 5 and 10 (2025) Finish Grading	261	2	0.5	261	44
Plots 5 and 10 (2025) Utilities	261	25	0.5	3,263	544
Plots 5 and 10 (2025) Building-Concrete	261	6	0.5	783	131
Plots 5 and 10 (2025) Building-Wet Utilities	261	2	0.5	261	44
Plots 5 and 10 (2025) Building-Electrical	261	15	0.5	1,958	326
Plots 5 and 10 (2025) Building-Landscaping	261	6	0.5	783	131
Plots 5 and 10 (2025) Landscaping	261	0	0.5	-	-
Plots 5 and 10 (2025) Temporary Utilities	261	7	0.5	914	152
Plots 5 and 10 (2025) Curbing/Drive Approaches	261	6	0.5	783	131
Plots 5 and 10 (2025) Paving	261	4	0.5	522	87
Plots 10 and 8 (2026) Mass Excavation	261	9	0.5	1,175	196
Plots 10 and 8 (2026) Finish Grading	261	2	0.5	261	44
Plots 10 and 8 (2026) Utilities	261	25	0.5	3,263	544
Plots 10 and 8 (2026) Building-Concrete	261	2	0.5	261	44

Building Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
Plots 10 and 8 (2026) Building-Wet Utilities	261	2	0.5	261	44
Plots 10 and 8 (2026) Building-Electrical	261	6	0.5	783	131
Plots 10 and 8 (2026) Building-Landscaping	261	7	0.5	914	152
Plots 10 and 8 (2026) Landscaping	261	6	0.5	783	131
Plots 10 and 8 (2026) Temporary Utilities	261	0	0.5	-	-
Plots 10 and 8 (2026) Curbing/Drive Approaches	261	4	0.5	522	87
Plots 10 and 8 (2026) Paving	261	6	0.5	783	131
Plot 8 (2027) Mass Excavation	261	12	0.5	1,566	261
Plot 8 (2027) Finish Grading	261	4.5	0.5	587	98
Plot 8 (2027) Utilities	261	14.5	0.5	1,892	315
Plot 8 (2027) Building-Concrete	261	8.5	0.5	1,109	185
Plot 8 (2027) Building-Wet Utilities	261	15	0.5	1,958	326
Plot 8 (2027) Building-Electrical	261	6	0.5	783	131
Plot 8 (2027) Building-Landscaping	261	4.5	0.5	587	98
Plot 8 (2027) Landscaping	261	15.5	0.5	2,023	337
Plot 8 (2027) Temporary Utilities	261	0	0.5	-	-
Plot 8 (2027) Curbing/Drive Approaches	261	5	0.5	653	109
Plot 8 (2027) Paving	261	6	0.5	783	131
Plots 11 and 6,7 (2028) Mass Excavation	260	15	0.5	1,950	325
Plots 11 and 6,7 (2028) Finish Grading	260	7	0.5	910	152
Plots 11 and 6,7 (2028) Utilities	260	4	0.5	520	87
Plots 11 and 6,7 (2028) Building-Concrete	260	15	0.5	1,950	325
Plots 11 and 6,7 (2028) Building-Wet Utilities	260	15	0.5	1,950	325
Plots 11 and 6,7 (2028) Building-Electrical	260	6	0.5	780	130
Plots 11 and 6,7 (2028) Building-Landscaping	260	2	0.5	260	43
Plots 11 and 6,7 (2028) Landscaping	260	0	0.5	-	-
Plots 11 and 6,7 (2028) Temporary Utilities	260	25	0.5	3,250	542
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	260	0	0.5	-	-
Plots 11 and 6,7 (2028) Paving	260	6	0.5	780	130
Plot 11 (2029) Mass Excavation	261	6	0.5	783	131
Plot 11 (2029) Finish Grading	261	11.5	0.5	1,501	250
Plot 11 (2029) Utilities	261	14.5	0.5	1,892	315
Plot 11 (2029) Building-Concrete	261	14.5	0.5	1,892	315
Plot 11 (2029) Building-Wet Utilities	261	8.5	0.5	1,109	185
Plot 11 (2029) Building-Electrical	261	15	0.5	1,958	326
Plot 11 (2029) Building-Landscaping	261	6	0.5	783	131
Plot 11 (2029) Landscaping	261	4.5	0.5	587	98
Plot 11 (2029) Temporary Utilities	261	2	0.5	261	44
Plot 11 (2029) Curbing/Drive Approaches	261	15.5	0.5	2,023	337
Plot 11 (2029) Paving	261	0	0.5	-	-
Plot 11 (2030) Mass Excavation	260	9	0.5	1,170	195
Plot 11 (2030) Finish Grading	260	2	0.5	260	43
Plot 11 (2030) Utilities	260	25	0.5	3,250	542
Plot 11 (2030) Building-Concrete	260	6	0.5	780	130
Plot 11 (2030) Building-Wet Utilities	260	2	0.5	260	43
Plot 11 (2030) Building-Electrical	260	15	0.5	1,950	325
Plot 11 (2030) Building-Landscaping	260	6	0.5	780	130

Building Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
Plot 11 (2030) Landscaping	260	0	0.5	-	-
Plot 11 (2030) Temporary Utilities	260	7	0.5	910	152
Plot 11 (2030) Curbing/Drive Approaches	260	6	0.5	780	130
Plot 11 (2030) Paving	260	4	0.5	520	87
Plot 11 (2031) Mass Excavation	260	9	0.5	1,170	195
Plot 11 (2031) Finish Grading	260	2	0.5	260	43
Plot 11 (2031) Utilities	260	25	0.5	3,250	542
Plot 11 (2031) Building-Concrete	260	2	0.5	260	43
Plot 11 (2031) Building-Wet Utilities	260	2	0.5	260	43
Plot 11 (2031) Building-Electrical	260	6	0.5	780	130
Plot 11 (2031) Building-Landscaping	260	7	0.5	910	152
Plot 11 (2031) Landscaping	260	6	0.5	780	130
Plot 11 (2031) Temporary Utilities	260	0	0.5	-	-
Plot 11 (2031) Curbing/Drive Approaches	260	4	0.5	520	87
Plot 11 (2031) Paving	260	6	0.5	780	130
Plots 11 and 12 (2032) Mass Excavation	260	12	0.5	1,560	260
Plots 11 and 12 (2032) Finish Grading	260	4.5	0.5	585	98
Plots 11 and 12 (2032) Utilities	260	14.5	0.5	1,885	314
Plots 11 and 12 (2032) Building-Concrete	260	8.5	0.5	1,105	184
Plots 11 and 12 (2032) Building-Wet Utilities	260	15	0.5	1,950	325
Plots 11 and 12 (2032) Building-Electrical	260	6	0.5	780	130
Plots 11 and 12 (2032) Building-Landscaping	260	4.5	0.5	585	98
Plots 11 and 12 (2032) Landscaping	260	15.5	0.5	2,015	336
Plots 11 and 12 (2032) Temporary Utilities	260	0	0.5	-	-
Plots 11 and 12 (2032) Curbing/Drive Approaches	260	5	0.5	650	108
Plots 11 and 12 (2032) Paving	260	6	0.5	780	130
Plot 12 (2033) Finish Grading	260	15	0.5	1,950	325
Plot 12 (2033) Utilities	260	7	0.5	910	152
Plot 12 (2033) Building-Concrete	260	4	0.5	520	87
Plot 12 (2033) Building-Wet Utilities	260	15	0.5	1,950	325
Plot 12 (2033) Building-Electrical	260	15	0.5	1,950	325
Plot 12 (2033) Building-Landscaping	260	6	0.5	780	130
Plot 12 (2033) Landscaping	260	2	0.5	260	43
Plot 12 (2033) Temporary Utilities	260	0	0.5	-	-
Plot 12 (2033) Curbing/Drive Approaches	260	25	0.5	3,250	542
Plot 12 (2033) Paving	260	0	0.5	-	-
Plots 12 and 21,22 (2034) Finish Grading	260	6	0.5	780	130
Plots 12 and 21,22 (2034) Utilities	260	6	0.5	780	130
Plots 12 and 21,22 (2034) Building-Concrete	260	11.5	0.5	1,495	249
Plots 12 and 21,22 (2034) Building-Wet Utilities	260	14.5	0.5	1,885	314
Plots 12 and 21,22 (2034) Building-Electrical	260	14.5	0.5	1,885	314
Plots 12 and 21,22 (2034) Building-Landscaping	260	8.5	0.5	1,105	184
Plots 12 and 21,22 (2034) Landscaping	260	15	0.5	1,950	325
Plots 12 and 21,22 (2034) Temporary Utilities	260	6	0.5	780	130
Plots 12 and 21,22 (2034) Curbing/Drive Approaches	260	4.5	0.5	585	98
Plots 12 and 21,22 (2034) Paving	260	2	0.5	260	43
			Total Vendor Truck VMT:	169,710	

Building Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
			Total Idle-Hours:		28,285

World Logistics Center
Construction Energy Analysis

On-Road Vendor Trucks

			miles.gallonm
	0.1337	gallons/mile	7.5
Total VMT diesel gallons (on-road vendor trucks):	[redacted]	miles	
	[redacted]		
			Estimated Fuel Savings from
EMFAC2014 Diesel Fuel Consumption Factor[2]	0.6687	gallons/hour	*Anti-Idling Regulation (64 percent based on*
Total Haul Truck Idle-Hours per Year:	28,285	hours	*estimated CARB emissions reductions)*[3]
Total Idling diesel gallons (on-road haul truck):	**18,914**		*52,540*
Total diesel gallons (on-road haul trucks):	[redacted]	est	

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin, HHDT and MHDT, Annual, CY 2017, Aggregate MY, Aggregate Speed)
2. California Air Resources Board, EMFAC2017 (South Coast Air Basin, HHDT and MHDT, Annual, CY 2017, Aggregate MY, 5 miles per hour (committed to hourly rate)
3. Source: California Air Resources Board (CARB), 2016. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2016, https://www.arb.ca.gov/regact/idling/idling.htm, accessed November 2016.

Building Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
Plots 2 and 4 (2020) Mass Excavation	262	9	25.0	58,950	197
Plots 2 and 4 (2020) Finish Gradine	262	2	25.0	13,100	44
Plots 2 and 4 (2020) Utilities	262	25	25.0	163,750	546
Plots 2 and 4 (2020) Landscaping	262	6	25.0	39,300	131
Plots 2 and 4 (2020) Buildine Concrete	262	2	25.0	13,100	44
Plots 2 and 4 (2020) Buildine-Wet Utilities	262	15	25.0	98,250	328
Plots 2 and 4 (2020) Buildine-Electrical	262	6	25.0	39,300	131
Plots 2 and 4 (2020) Temporary Utilities	262	0	25.0	-	-
Plots 2 and 4 (2020) Buildine-Landscaping	262	7	25.0	45,850	153
Plots 2 and 4 (2020) Paving	262	6	25.0	39,300	131
Plots 2 and 4 (2020) CurbineDrive Approaches	262	4	25.0	26,200	87
Plot 4 (2021) Mass Excavation	261	9	25.0	58,725	196
Plot 4 (2021) Finish Gradine	261	2	25.0	13,050	44
Plot 4 (2021) Utilities	261	25	25.0	163,125	544
Plot 4 (2021) Buildine-Concrete	261	2	25.0	13,050	44
Plot 4 (2021) Buildine-Wet Utilities	261	1	25.0	13,050	44
Plot 4 (2021) Buildine-Electrical	261	6	25.0	39,150	131
Plot 4 (2021) Buildine-Landscaping	261	7	25.0	45,675	152
Plot 4 (2021) Landscaping	261	6	25.0	39,150	131
Plot 4 (2021) Temporary Utilities	261	0	25.0	-	-
Plot 4 (2021) CurbineDrive Approaches	261	4	25.0	26,100	87
Plot 4 (2021) Paving	261	6	25.0	39,150	131
Plots 4 and 9 (2022) Mass Excavation	260	12	25.0	78,000	260
Plots 4 and 9 (2022) Finish Gradine	260	4.5	25.0	29,250	98
Plots 4 and 9 (2022) Utilities	260	14.5	25.0	94,250	314
Plots 4 and 9 (2022) Buildine-Concrete	260	8.5	25.0	55,250	184
Plots 4 and 9 (2022) Buildine-Wet Utilities	260	15	25.0	97,500	325
Plots 4 and 9 (2022) Buildine-Electrical	260	6	25.0	39,000	130
Plots 4 and 9 (2022) Buildine-Landscaping	260	4.5	25.0	29,250	98
Plots 4 and 9 (2022) Landscaping	260	15.5	25.0	100,750	336
Plots 4 and 9 (2022) Temporary Utilities	260	0	25.0	-	-
Plots 4 and 9 (2022) CurbineDrive Approaches	260	5	25.0	32,500	108
Plots 4 and 9 (2022) Paving	260	6	25.0	39,000	130
Plot 9 (2023) Mass Excavation	260	15	25.0	97,500	325
Plot 9 (2023) Finish Gradine	260	7	25.0	45,500	152
Plot 9 (2023) Utilities	260	4	25.0	26,000	87
Plot 9 (2023) Buildine-Concrete	260	15	25.0	97,500	325
Plot 9 (2023) Buildine-Wet Utilities	260	15	25.0	97,500	325
Plot 9 (2023) Buildine-Electrical	260	6	25.0	39,000	130
Plot 9 (2023) Buildine-Landscaping	260	7	25.0	45,500	152
Plot 9 (2023) Landscaping	260	6	25.0	39,000	130
Plot 9 (2023) Temporary Utilities	260	0	25.0	-	-
Plot 9 (2023) CurbineDrive Approaches	260	4	25.0	26,000	87
Plot 9 (2023) Paving	260	6	25.0	39,000	130
Plots 9 and 1.2.20 (2024) Mass Excavation	261	11.5	25.0	75,038	250
Plots 9 and 1.2.20 (2024) Finish Gradine	262	14.5	25.0	94,975	317
Plots 9 and 1.2.20 (2024) Utilities	262	14.5	25.0	94,975	317
Plots 9 and 1.2.20 (2024) Buildine-Concrete	262	8.5	25.0	55,675	186
Plots 9 and 1.2.20 (2024) Buildine-Wet Utilities	262	15	25.0	98,250	328
Plots 9 and 1.2.20 (2024) Buildine-Electrical	262	6	25.0	39,300	131
Plots 9 and 1.2.20 (2024) Buildine-Landscaping	262	4.5	25.0	29,475	98
Plots 9 and 1.2.20 (2024) Interchanae	262	2	25.0	13,100	44
Plots 9 and 1.2.20 (2024) Landscaping	262	15.5	25.0	101,525	338
Plots 9 and 1.2.20 (2024) Temporary Utilities	262	0	25.0	-	-
Plots 9 and 1.2.20 (2024) CurbineDrive Approaches	262	5.5	25.0	36,025	120
Plots 9 and 1.2.20 (2024) Paving	262	6	25.0	39,300	131
Plots 5 and 10 (2025) Mass Excavation	261	9	25	58,725	196
Plots 5 and 10 (2025) Finish Gradine	261	2	25	13,050	44
Plots 5 and 10 (2025) Utilities	261	25	25	163,125	544
Plots 5 and 10 (2025) Buildine-Concrete	261	6	25	39,150	131
Plots 5 and 10 (2025) Buildine-Wet Utilities	261	1	25	13,050	44
Plots 5 and 10 (2025) Buildine-Electrical	261	15	25	97,875	326
Plots 5 and 10 (2025) Buildine-Landscaping	261	6	25	39,150	131
Plots 5 and 10 (2025) Landscaping	261	7	25	45,675	152
Plots 5 and 10 (2025) Temporary Utilities	261	0	25	-	-
Plots 5 and 10 (2025) CurbineDrive Approaches	261	6	25	39,150	131
Plots 5 and 10 (2025) Paving	261	4	25	26,100	87
Plots 10 and 8 (2026) Mass Excavation	261	9	25	58,725	196
Plots 10 and 8 (2026) Finish Gradine	261	2	25	13,050	44
Plots 10 and 8 (2026) Utilities	261	25	25	163,125	544
Plots 10 and 8 (2026) Buildine-Concrete	261	2	25	13,050	44
Plots 10 and 8 (2026) Buildine-Wet Utilities	261	2	25	13,050	44
Plots 10 and 8 (2026) Buildine-Electrical	261	6	25	39,150	131
Plots 10 and 8 (2026) Buildine-Landscaping	261	7	25	45,675	152
Plots 10 and 8 (2026) Landscaping	261	6	25	39,150	131
Plots 10 and 8 (2026) Temporary Utilities	261	0	25	-	-
Plots 10 and 8 (2026) CurbineDrive Approaches	261	4	25	26,100	87
Plots 10 and 8 (2026) Paving	261	6	25	39,150	131
Plot 8 (2027) Mass Excavation	261	12	25	78,300	261
Plot 8 (2027) Finish Gradine	261	4.5	25	29,363	98
Plot 8 (2027) Utilities	261	14.5	25	94,613	315
Plot 8 (2027) Buildine-Concrete	261	8.5	25	55,463	185
Plot 8 (2027) Buildine-Wet Utilities	261	15	25	97,875	326
Plot 8 (2027) Buildine-Electrical	261	6	25	39,150	131
Plot 8 (2027) Buildine-Landscaping	261	4.5	25	29,363	98
Plot 8 (2027) Landscaping	261	15.5	25	101,138	337
Plot 8 (2027) Temporary Utilities	261	0	25	-	-
Plot 8 (2027) CurbineDrive Approaches	261	5	25	33,431	111
Plot 8 (2027) Paving	261	6	25	39,150	131
Plots 11 and 6.7 (2028) Mass Excavation	260	15	25	97,500	325
Plots 11 and 6.7 (2028) Finish Gradine	260	7	25	45,500	152
Plots 11 and 6.7 (2028) Utilities	260	4	25	26,000	87
Plots 11 and 6.7 (2028) Buildine-Concrete	260	15	25	97,500	325
Plots 11 and 6.7 (2028) Buildine-Wet Utilities	260	15	25	97,500	325
Plots 11 and 6.7 (2028) Buildine-Electrical	260	6	25	39,000	130
Plots 11 and 6.7 (2028) Buildine-Landscaping	260	2	25	13,000	43
Plots 11 and 6.7 (2028) Landscaping	260	0	25	-	-
Plots 11 and 6.7 (2028) Temporary Utilities	260	25	25	162,500	542
Plots 11 and 6.7 (2028) CurbineDrive Approaches	260	0	25	-	-
Plots 11 and 6.7 (2028) Paving	260	6	25	39,000	130
Plot 11 (2029) Mass Excavation	261	6	25	39,150	131
Plot 11 (2029) Finish Gradine	261	11.5	25	75,038	250
Plot 11 (2029) Utilities	261	14.5	25	94,613	315
Plot 11 (2029) Buildine-Concrete	261	14.5	25	94,613	315
Plot 11 (2029) Buildine-Wet Utilities	261	8.5	25	55,463	185
Plot 11 (2029) Buildine-Electrical	261	15	25	97,875	326
Plot 11 (2029) Buildine-Landscaping	261	6	25	39,150	131
Plot 11 (2029) Landscaping	261	4.5	25	29,363	98
Plot 11 (2029) Temporary Utilities	261	1	25	13,050	44
Plot 11 (2029) CurbineDrive Approaches	261	15.5	25	101,138	337
Plot 11 (2029) Paving	261	0	25	-	-
Plot 11 (2030) Mass Excavation	260	9	25	58,500	195
Plot 11 (2030) Finish Gradine	260	2	25	13,000	43
Plot 11 (2030) Utilities	260	25	25	162,500	542
Plot 11 (2030) Buildine-Concrete	260	6	25	39,000	130
Plot 11 (2030) Buildine-Wet Utilities	260	2	25	13,000	43
Plot 11 (2030) Buildine-Electrical	260	15	25	97,500	325
Plot 11 (2030) Buildine-Landscaping	260	6	25	39,000	130
Plot 11 (2030) Landscaping	260	0	25	-	-
Plot 11 (2030) Temporary Utilities	260	7	25	45,500	152
Plot 11 (2030) CurbineDrive Approaches	260	6	25	39,000	130
Plot 11 (2030) Paving	260	4	25	26,000	87
Plot 11 (2031) Mass Excavation	260	9	25	58,500	195
Plot 11 (2031) Finish Gradine	260	2	25	13,000	43
Plot 11 (2031) Utilities	260	25	25	162,500	542
Plot 11 (2031) Buildine-Concrete	260	2	25	13,000	43
Plot 11 (2031) Buildine-Wet Utilities	260	2	25	13,000	43
Plot 11 (2031) Buildine-Electrical	260	6	25	39,000	130
Plot 11 (2031) Buildine-Landscaping	260	7	25	45,500	152
Plot 11 (2031) Landscaping	260	6	25	39,000	130
Plot 11 (2031) Temporary Utilities	260	0	25	-	-
Plot 11 (2031) CurbineDrive Approaches	260	4	25	26,000	87
Plot 11 (2031) Paving	260	6	25	39,000	130
Plots 11 and 12 (2032) Mass Excavation	260	15	25	97,500	325
Plots 11 and 12 (2032) Finish Gradine	260	4.5	25	29,250	98
Plots 11 and 12 (2032) Utilities	260	14.5	25	94,250	314
Plots 11 and 12 (2032) Buildine-Concrete	260	8.5	25	55,250	184
Plots 11 and 12 (2032) Buildine-Wet Utilities	260	15	25	97,500	325
Plots 11 and 12 (2032) Buildine-Electrical	260	6	25	39,000	130
Plots 11 and 12 (2032) Buildine-Landscaping	260	4.5	25	29,250	98
Plots 11 and 12 (2032) Landscaping	260	15.5	25	100,750	336
Plots 11 and 12 (2032) Temporary Utilities	260	0	25	-	-
Plots 11 and 12 (2032) CurbineDrive Approaches	260	5	25	32,500	108
Plots 11 and 12 (2032) Paving	260	6	25	39,000	130
Plot 12 (2033) Finish Gradine	260	15	25	97,500	325
Plot 12 (2033) Utilities	260	7	25	45,500	152
Plot 12 (2033) Buildine-Concrete	260	4	25	26,000	87
Plot 12 (2033) Buildine-Wet Utilities	260	15	25	97,500	325
Plot 12 (2033) Buildine-Electrical	260	15	25	97,500	325
Plot 12 (2033) Buildine-Landscaping	260	6	25	39,000	130
Plot 12 (2033) Landscaping	260	2	25	13,000	43
Plot 12 (2033) Temporary Utilities	260	0	25	-	-
Plot 12 (2033) CurbineDrive Approaches	260	25	25	162,500	542
Plot 12 (2033) Paving	260	0	25	-	-
Plots 13 and 14.1 33 (2034) Finish Gradine	260	6	25	39,000	130
Plots 13 and 14.1 33 (2034) Utilities	260	6	25	39,000	130
Plots 13 and 14.1 33 (2034) Buildine-Concrete	260	11.5	25	74,750	249
Plots 13 and 14.1 33 (2034) Buildine-Wet Utilities	260	14.5	25	94,250	314
Plots 12 and 21.22 (2034) Buildine-Electrical	260	14.5	25	94,250	314
Plots 12 and 21.22 (2034) Buildine-Landscaping	260	8.5	25	55,250	184
Plots 12 and 21.22 (2034) Landscaping	260	15	25	97,500	325
Plots 12 and 21.22 (2034) Temporary Utilities	260	6	25	39,000	130
Plots 12 and 21.22 (2034) CurbineDrive Approaches	260	4.5	25	29,250	98
Plots 12 and 21.22 (2034) Paving	260	2	25	13,000	43
			Total Vendor Truck VMT:	8,485,475	
			Total Idle-Hours:		28,285

World Logistics Center
Construction Energy Analysis

On-Road Haul Trucks

	0.1551	gallons/mile	miles/gallon	
	137,496	miles	6.45	
Total VMT diesel gallons (on-road haul trucks):	**21,328**			
				Estimated Fuel Savings from
EMFAC2014 Diesel Fuel Consumption Factor:[2]	0.7756	gallons/hour		*Anti-Idling Regulation (64 percent based on*
Total Haul Truck Idle-Hours per Year:	22,916	hours		*estimated CARB emissions reductions):* [3]
Total Idling diesel gallons (on-road haul trucks):	**17,774**			*49,371*
Total diesel gallons (on-road haul trucks):	**39,102**	gal		

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; T7 Single Construction; Annual; CY 2017; Aggregate MY; Aggregate Speed)
2. California Air Resources Board, EMFAC2017 (South Coast Air Basin; T7 Single Construction; Annual; CY 2017; Aggregate MY; 5 miles per hour converted to hourly rate)
3. Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, https://www.arb.ca.gov/regact/idling/idling.htm, accessed November 2016.

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 2 and 4 (2020) Mass Excavation	262	1705	0.5	853	142
Plots 2 and 4 (2020) Finish Grading	262	26	0.5	13	2
Plots 2 and 4 (2020) Utilities	262	6260	0.5	3,130	522
Plots 2 and 4 (2020) Landscaping	262	0	0.5	-	-
Plots 2 and 4 (2020) Building Concrete	262	7512	0.5	3,756	626
Plots 2 and 4 (2020) Building-Wet Utilities	262	2191	0.5	1,096	183
Plots 2 and 4 (2020) Building-Electrical	262	5008	0.5	2,504	417
Plots 2 and 4 (2020) Temporary Utilities	262	0	0.5	-	-
Plots 2 and 4 (2020) Building-Landscaping	262	0	0.5	-	-
Plots 2 and 4 (2020) Paving	262	528	0.5	264	44
Plots 2 and 4 (2020) Curbing/Drive Approaches	262	624	0.5	312	52
Plot 4 (2021) Mass Excavation	261	1705	0.5	853	142
Plot 4 (2021) Finish Grading	261	52	0.5	26	4
Plot 4 (2021) Utilities	261	6260	0.5	3,130	522
Plot 4 (2021) Building-Concrete	261	7512	0.5	3,756	626
Plot 4 (2021) Building-Wet Utilities	261	7512	0.5	3,756	626
Plot 4 (2021) Building-Electrical	261	5008	0.5	2,504	417
Plot 4 (2021) Building-Landscaping	261	0	0.5	-	-
Plot 4 (2021) Landscaping	261	0	0.5	-	-
Plot 4 (2021) Temporary Utilities	261	0	0.5	-	-
Plot 4 (2021) Curbing/Drive Approaches	261	624	0.5	312	52
Plot 4 (2021) Paving	261	528	0.5	264	44
Plots 4 and 9 (2022) Mass Excavation	260	2945	0.5	1,473	245
Plots 4 and 9 (2022) Finish Grading	260	26	0.5	13	2

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 4 and 9 (2022) Utilities	260	3442	0.5	1,721	287
Plots 4 and 9 (2022) Building-Concrete	260	5848.5	0.5	2,924	487
Plots 4 and 9 (2022) Building-Wet Utilities	260	2191	0.5	1,096	183
Plots 4 and 9 (2022) Building-Electrical	260	2556	0.5	1,278	213
Plots 4 and 9 (2022) Building-Landscaping	260	3756	0.5	1,878	313
Plots 4 and 9 (2022) Landscaping	260	3130	0.5	1,565	261
Plots 4 and 9 (2022) Temporary Utilities	260	0	0.5	-	-
Plots 4 and 9 (2022) Curbing/Drive Approaches	260	2816	0.5	1,408	235
Plots 4 and 9 (2022) Paving	260	264	0.5	132	22
Plot 9 (2023) Mass Excavation	260	4185	0.5	2,093	349
Plot 9 (2023) Finish Grading	260	0	0.5	-	-
Plot 9 (2023) Utilities	260	624	0.5	312	52
Plot 9 (2023) Building-Concrete	260	4185	0.5	2,093	349
Plot 9 (2023) Building-Wet Utilities	260	2191	0.5	1,096	183
Plot 9 (2023) Building-Electrical	260	104	0.5	52	9
Plot 9 (2023) Building-Landscaping	260	7512	0.5	3,756	626
Plot 9 (2023) Interchange	260	0	0.5	-	-
Plot 9 (2023) Landscaping	260	6260	0.5	3,130	522
Plot 9 (2023) Temporary Utilities	260	0	0.5	-	-
Plot 9 (2023) Curbing/Drive Approaches	260	5008	0.5	2,504	417
Plot 9 (2023) Paving	260	0	0.5	-	-
Plots 9 and 1,3,20 (2024) Mass Excavation	261	2635	0.5	1,318	220
Plots 9 and 1,3,20 (2024) Finish Grading	262	3442	0.5	1,721	287
Plots 9 and 1,3,20 (2024) Utilities	262	3442	0.5	1,721	287
Plots 9 and 1,3,20 (2024) Building-Concrete	262	5848.5	0.5	2,924	487
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	262	2191	0.5	1,096	183
Plots 9 and 1,3,20 (2024) Building-Electrical	262	2556	0.5	1,278	213
Plots 9 and 1,3,20 (2024) Building-Landscaping	262	3756	0.5	1,878	313
Plots 9 and 1,3,20 (2024) Interchange	262	1408.5	0.5	704	117
Plots 9 and 1,3,20 (2024) Landscaping	262	3130	0.5	1,565	261
Plots 9 and 1,3,20 (2024) Temporary Utilities	262	0	0.5	-	-
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	262	312	0.5	156	26
Plots 9 and 1,3,20 (2024) Paving	262	264	0.5	132	22
Plots 5 and 10 (2025) Mass Excavation	261	7	0.5	3	1
Plots 5 and 10 (2025) Finish Grading	261	0	0.5	0	0
Plots 5 and 10 (2025) Utilities	261	24	0.5	12	2
Plots 5 and 10 (2025) Building-Concrete	261	0	0.5	-	-
Plots 5 and 10 (2025) Building-Wet Utilities	261	29	0.5	14	2
Plots 5 and 10 (2025) Building-Electrical	261	8	0.5	4	1
Plots 5 and 10 (2025) Building-Landscaping	261	19	0.5	10	2
Plots 5 and 10 (2025) Landscaping	261	0	0.5	-	-
Plots 5 and 10 (2025) Temporary Utilities	261	0	0.5	-	-
Plots 5 and 10 (2025) Curbing/Drive Approaches	261	2	0.5	1	0
Plots 5 and 10 (2025) Paving	261	2	0.5	1	0
Plots 10 and 8 (2026) Mass Excavation	261	7	0.5	3	1
Plots 10 and 8 (2026) Finish Grading	261	0	0.5	0	0

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 10 and 8 (2026) Utilities	261	24	0.5	12	2
Plots 10 and 8 (2026) Building-Concrete	261	29	0.5	14	2
Plots 10 and 8 (2026) Building-Wet Utilities	261	29	0.5	14	2
Plots 10 and 8 (2026) Building-Electrical	261	19	0.5	10	2
Plots 10 and 8 (2026) Building-Landscaping	261	0	0.5	-	-
Plots 10 and 8 (2026) Landscaping	261	0	0.5	-	-
Plots 10 and 8 (2026) Temporary Utilities	261	0	0.5	-	-
Plots 10 and 8 (2026) Curbing/Drive Approaches	261	2	0.5	1	0
Plots 10 and 8 (2026) Paving	261	2	0.5	1	0
Plot 8 (2027) Mass Excavation	261	11	0.5	6	1
Plot 8 (2027) Finish Grading	261	0	0.5	0	0
Plot 8 (2027) Utilities	261	13	0.5	7	1
Plot 8 (2027) Building-Concrete	261	22	0.5	11	2
Plot 8 (2027) Building-Wet Utilities	261	8	0.5	4	1
Plot 8 (2027) Building-Electrical	261	10	0.5	5	1
Plot 8 (2027) Building-Landscaping	261	14	0.5	7	1
Plot 8 (2027) Landscaping	261	12	0.5	6	1
Plot 8 (2027) Temporary Utilities	261	0	0.5	-	-
Plot 8 (2027) Curbing/Drive Approaches	261	11	0.5	5	1
Plot 8 (2027) Paving	261	1	0.5	1	0
Plots 11 and 6,7 (2028) Mass Excavation	260	16	0.5	8	1
Plots 11 and 6,7 (2028) Finish Grading	260	0	0.5	-	-
Plots 11 and 6,7 (2028) Utilities	260	2	0.5	1	0
Plots 11 and 6,7 (2028) Building-Concrete	260	16	0.5	8	1
Plots 11 and 6,7 (2028) Building-Wet Utilities	260	8	0.5	4	1
Plots 11 and 6,7 (2028) Building-Electrical	260	0	0.5	0	0
Plots 11 and 6,7 (2028) Building-Landscaping	260	29	0.5	14	2
Plots 11 and 6,7 (2028) Landscaping	260	0	0.5	-	-
Plots 11 and 6,7 (2028) Temporary Utilities	260	24	0.5	12	2
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	260	0	0.5	-	-
Plots 11 and 6,7 (2028) Paving	260	19	0.5	10	2
Plot 11 (2029) Mass Excavation	261	0	0.5	-	-
Plot 11 (2029) Finish Grading	261	10	0.5	5	1
Plot 11 (2029) Utilities	261	13	0.5	7	1
Plot 11 (2029) Building-Concrete	261	13	0.5	7	1
Plot 11 (2029) Building-Wet Utilities	261	22	0.5	11	2
Plot 11 (2029) Building-Electrical	261	8	0.5	4	1
Plot 11 (2029) Building-Landscaping	261	10	0.5	5	1
Plot 11 (2029) Landscaping	261	14	0.5	7	1
Plot 11 (2029) Temporary Utilities	261	5	0.5	3	0
Plot 11 (2029) Curbing/Drive Approaches	261	12	0.5	6	1
Plot 11 (2029) Paving	261	0	0.5	-	-
Plot 11 (2030) Mass Excavation	260	1705	0.5	853	142
Plot 11 (2030) Finish Grading	260	26	0.5	13	2
Plot 11 (2030) Utilities	260	6260	0.5	3,130	522
Plot 11 (2030) Building-Concrete	260	0	0.5	-	-

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plot 11 (2030) Building-Wet Utilities	260	7512	0.5	3,756	626
Plot 11 (2030) Building-Electrical	260	2191	0.5	1,096	183
Plot 11 (2030) Building-Landscaping	260	5008	0.5	2,504	417
Plot 11 (2030) Landscaping	260	0	0.5	-	-
Plot 11 (2030) Temporary Utilities	260	0	0.5	-	-
Plot 11 (2030) Curbing/Drive Approaches	260	528	0.5	264	44
Plot 11 (2030) Paving	260	624	0.5	312	52
Plot 11 (2031) Mass Excavation	260	1705	0.5	853	142
Plot 11 (2031) Finish Grading	260	52	0.5	26	4
Plot 11 (2031) Utilities	260	6260	0.5	3,130	522
Plot 11 (2031) Building-Concrete	260	7512	0.5	3,756	626
Plot 11 (2031) Building-Wet Utilities	260	7512	0.5	3,756	626
Plot 11 (2031) Building-Electrical	260	5008	0.5	2,504	417
Plot 11 (2031) Building-Landscaping	260	0	0.5	-	-
Plot 11 (2031) Landscaping	260	0	0.5	-	-
Plot 11 (2031) Temporary Utilities	260	0	0.5	-	-
Plot 11 (2031) Curbing/Drive Approaches	260	624	0.5	312	52
Plot 11 (2031) Paving	260	528	0.5	264	44
Plots 11 and 12 (2032) Mass Excavation	260	2945	0.5	1,473	245
Plots 11 and 12 (2032) Finish Grading	260	26	0.5	13	2
Plots 11 and 12 (2032) Utilities	260	3442	0.5	1,721	287
Plots 11 and 12 (2032) Building-Concrete	260	5848.5	0.5	2,924	487
Plots 11 and 12 (2032) Building-Wet Utilities	260	2191	0.5	1,096	183
Plots 11 and 12 (2032) Building-Electrical	260	2556	0.5	1,278	213
Plots 11 and 12 (2032) Building-Landscaping	260	3756	0.5	1,878	313
Plots 11 and 12 (2032) Landscaping	260	3130	0.5	1,565	261
Plots 11 and 12 (2032) Temporary Utilities	260	0	0.5	-	-
Plots 11 and 12 (2032) Curbing/Drive Approaches	260	2816	0.5	1,408	235
Plots 11 and 12 (2032) Paving	260	264	0.5	132	22
Plot 12 (2033) Finish Grading	260	4185	0.5	2,093	349
Plot 12 (2033) Utilities	260	0	0.5	-	-
Plot 12 (2033) Building-Concrete	260	624	0.5	312	52
Plot 12 (2033) Building-Wet Utilities	260	4185	0.5	2,093	349
Plot 12 (2033) Building-Electrical	260	2191	0.5	1,096	183
Plot 12 (2033) Building-Landscaping	260	104	0.5	52	9
Plot 12 (2033) Landscaping	260	7512	0.5	3,756	626
Plot 12 (2033) Temporary Utilities	260	0	0.5	-	-
Plot 12 (2033) Curbing/Drive Approaches	260	6260	0.5	3,130	522
Plot 12 (2033) Paving	260	0	0.5	-	-
Plots 12 and 21,22 (2034) Finish Grading	260	5008	0.5	2,504	417
Plots 12 and 21,22 (2034) Utilities	260	0	0.5	-	-
Plots 12 and 21,22 (2034) Building-Concrete	260	2635	0.5	1,318	220
Plots 12 and 21,22 (2034) Building-Wet Utilities	260	3442	0.5	1,721	287
Plots 12 and 21,22 (2034) Building-Electrical	260	3442	0.5	1,721	287
Plots 12 and 21,22 (2034) Building-Landscaping	260	5848.5	0.5	2,924	487
Plots 12 and 21,22 (2034) Landscaping	260	2,191	0.5	1,096	183

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 12 and 21,22 (2034) Temporary Utilities	260.0	2,556.0	0.5	1,278	213
Plots 12 and 21,22 (2034) Curbing/Drive Approaches	260	3756	0.5	1,878	313
Plots 12 and 21,22 (2034) Paving	260	1408.5	0.5	704	117
			Total VMT:	137,496	
			Total Idle hours:		22,916

World Logistics Center
Construction Energy Analysis

On-Road Haul Trucks

	0.1551	gallons/mile	miles/gallon
	10,324,213	miles	6.45
Total VMT diesel gallons (on-road haul trucks):	**1,601,486**		
			Estimated Fuel Savings from
EMFAC2017 Diesel Fuel Consumption Factor:2	0.7756	gallons/hour	*Anti-Idling Regulation (64 percent based on*
Total Haul Truck Idle-Hours per Year:	34,414	hours	*estimated CARB emissions reductions):* [3]
Total Idling diesel gallons (on-road haul trucks):	**26,691**		*74,143*
Total diesel gallons (on-road haul trucks):	**1,628,178**	gal	

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; T7 Single Construction; Annual; CY 2017; Aggregate MY; Aggregate Speed)
2. California Air Resources Board, EMFAC2017 (South Coast Air Basin; T7 Single Construction; Annual; CY 2017; Aggregate MY; 5 miles per hour converted to hourly rate)
3. Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, https://www.arb.ca.gov/regact/idling/idling.htm, accessed November 2016.

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 2 and 4 (2020) Mass Excavation	262	1705	25	42,625	142
Plots 2 and 4 (2020) Finish Grading	262	26	25	650	2
Plots 2 and 4 (2020) Utilities	262	6260	25	156,500	522
Plots 2 and 4 (2020) Landscaping	262	0	25	-	-
Plots 2 and 4 (2020) Building Concrete	262	7512	25	187,800	626
Plots 2 and 4 (2020) Building-Wet Utilities	262	2191	25	54,775	183
Plots 2 and 4 (2020) Building-Electrical	262	5008	25	125,200	417
Plots 2 and 4 (2020) Temporary Utilities	262	0	25	-	-
Plots 2 and 4 (2020) Building-Landscaping	262	0	25	-	-
Plots 2 and 4 (2020) Paving	262	528	25	13,200	44
Plots 2 and 4 (2020) Curbing/Drive Approaches	262	624	25	15,600	52
Plot 4 (2021) Mass Excavation	261	1705	25	42,625	142
Plot 4 (2021) Finish Grading	261	52	25	1,300	4
Plot 4 (2021) Utilities	261	6260	25	156,500	522
Plot 4 (2021) Building-Concrete	261	7512	25	187,800	626
Plot 4 (2021) Building-Wet Utilities	261	7512	25	187,800	626
Plot 4 (2021) Building-Electrical	261	5008	25	125,200	417
Plot 4 (2021) Building-Landscaping	261	0	25	-	-
Plot 4 (2021) Landscaping	261	0	25	-	-
Plot 4 (2021) Temporary Utilities	261	0	25	-	-
Plot 4 (2021) Curbing/Drive Approaches	261	624	25	15,600	52
Plot 4 (2021) Paving	261	528	25	13,200	44
Plots 4 and 9 (2022) Mass Excavation	260	2945	25	73,625	245
Plots 4 and 9 (2022) Finish Grading	260	26	25	650	2

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 4 and 9 (2022) Utilities	260	3442	25	86,050	287
Plots 4 and 9 (2022) Building-Concrete	260	5848.5	25	146,213	487
Plots 4 and 9 (2022) Building-Wet Utilities	260	2191	25	54,775	183
Plots 4 and 9 (2022) Building-Electrical	260	2556	25	63,900	213
Plots 4 and 9 (2022) Building-Landscaping	260	3756	25	93,900	313
Plots 4 and 9 (2022) Landscaping	260	3130	25	78,250	261
Plots 4 and 9 (2022) Temporary Utilities	260	0	25	-	-
Plots 4 and 9 (2022) Curbing/Drive Approaches	260	2816	25	70,400	235
Plots 4 and 9 (2022) Paving	260	264	25	6,600	22
Plot 9 (2023) Mass Excavation	260	4185	25	104,625	349
Plot 9 (2023) Finish Grading	260	0	25	-	-
Plot 9 (2023) Utilities	260	624	25	15,600	52
Plot 9 (2023) Building-Concrete	260	4185	25	104,625	349
Plot 9 (2023) Building-Wet Utilities	260	2191	25	54,775	183
Plot 9 (2023) Building-Electrical	260	104	25	2,600	9
Plot 9 (2023) Building-Landscaping	260	7512	25	187,800	626
Plot 9 (2023) Interchange	260	0	25	-	-
Plot 9 (2023) Landscaping	260	6260	25	156,500	522
Plot 9 (2023) Temporary Utilities	260	0	25	-	-
Plot 9 (2023) Curbing/Drive Approaches	260	5008	25	125,200	417
Plot 9 (2023) Paving	260	0	25	-	-
Plots 9 and 1,3,20 (2024) Mass Excavation	261	2635	25	65,875	220
Plots 9 and 1,3,20 (2024) Finish Grading	262	3442	25	86,050	287
Plots 9 and 1,3,20 (2024) Utilities	262	3442	25	86,050	287
Plots 9 and 1,3,20 (2024) Building-Concrete	262	5848.5	25	146,213	487
Plots 9 and 1,3,20 (2024) Building-Wet Utilities	262	2191	25	54,775	183
Plots 9 and 1,3,20 (2024) Building-Electrical	262	2556	25	63,900	213
Plots 9 and 1,3,20 (2024) Building-Landscaping	262	3756	25	93,900	313
Plots 9 and 1,3,20 (2024) Interchange	262	1408.5	25	35,213	117
Plots 9 and 1,3,20 (2024) Landscaping	262	3130	25	78,250	261
Plots 9 and 1,3,20 (2024) Temporary Utilities	262	0	25	-	-
Plots 9 and 1,3,20 (2024) Curbing/Drive Approaches	262	312	25	7,800	26
Plots 9 and 1,3,20 (2024) Paving	262	264	25	6,600	22
Plots 5 and 10 (2025) Mass Excavation	261	1705	25	42,625	142
Plots 5 and 10 (2025) Finish Grading	261	26	25	650	2
Plots 5 and 10 (2025) Utilities	261	6260	25	156,500	522
Plots 5 and 10 (2025) Building-Concrete	261	0	25	-	-
Plots 5 and 10 (2025) Building-Wet Utilities	261	7512	25	187,800	626
Plots 5 and 10 (2025) Building-Electrical	261	2191	25	54,775	183
Plots 5 and 10 (2025) Building-Landscaping	261	5008	25	125,200	417
Plots 5 and 10 (2025) Landscaping	261	0	25	-	-
Plots 5 and 10 (2025) Temporary Utilities	261	0	25	-	-
Plots 5 and 10 (2025) Curbing/Drive Approaches	261	528	25	13,200	44
Plots 5 and 10 (2025) Paving	261	624	25	15,600	52
Plots 10 and 8 (2026) Mass Excavation	261	1705	25	42,625	142
Plots 10 and 8 (2026) Finish Grading	261	52	25	1,300	4

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 10 and 8 (2026) Utilities	261	6260	25	156,500	522
Plots 10 and 8 (2026) Building-Concrete	261	7512	25	187,800	626
Plots 10 and 8 (2026) Building-Wet Utilities	261	7512	25	187,800	626
Plots 10 and 8 (2026) Building-Electrical	261	5008	25	125,200	417
Plots 10 and 8 (2026) Building-Landscaping	261	0	25	-	-
Plots 10 and 8 (2026) Landscaping	261	0	25	-	-
Plots 10 and 8 (2026) Temporary Utilities	261	0	25	-	-
Plots 10 and 8 (2026) Curbing/Drive Approaches	261	624	25	15,600	52
Plots 10 and 8 (2026) Paving	261	528	25	13,200	44
Plot 8 (2027) Mass Excavation	261	2945	25	73,625	245
Plot 8 (2027) Finish Grading	261	26	25	650	2
Plot 8 (2027) Utilities	261	3442	25	86,050	287
Plot 8 (2027) Building-Concrete	261	5848.5	25	146,213	487
Plot 8 (2027) Building-Wet Utilities	261	2191	25	54,775	183
Plot 8 (2027) Building-Electrical	261	2556	25	63,900	213
Plot 8 (2027) Building-Landscaping	261	3756	25	93,900	313
Plot 8 (2027) Landscaping	261	3130	25	78,250	261
Plot 8 (2027) Temporary Utilities	261	0	25	-	-
Plot 8 (2027) Curbing/Drive Approaches	261	2816	25	70,400	235
Plot 8 (2027) Paving	261	264	25	6,600	22
Plots 11 and 6,7 (2028) Mass Excavation	260	4185	25	104,625	349
Plots 11 and 6,7 (2028) Finish Grading	260	0	25	-	-
Plots 11 and 6,7 (2028) Utilities	260	624	25	15,600	52
Plots 11 and 6,7 (2028) Building-Concrete	260	4185	25	104,625	349
Plots 11 and 6,7 (2028) Building-Wet Utilities	260	2191	25	54,775	183
Plots 11 and 6,7 (2028) Building-Electrical	260	104	25	2,600	9
Plots 11 and 6,7 (2028) Building-Landscaping	260	7512	25	187,800	626
Plots 11 and 6,7 (2028) Landscaping	260	0	25	-	-
Plots 11 and 6,7 (2028) Temporary Utilities	260	6260	25	156,500	522
Plots 11 and 6,7 (2028) Curbing/Drive Approaches	260	0	25	-	-
Plots 11 and 6,7 (2028) Paving	260	5008	25	125,200	417
Plot 11 (2029) Mass Excavation	261	0	25	-	-
Plot 11 (2029) Finish Grading	261	2635	25	65,875	220
Plot 11 (2029) Utilities	261	3442	25	86,050	287
Plot 11 (2029) Building-Concrete	261	3442	25	86,050	287
Plot 11 (2029) Building-Wet Utilities	261	5848.5	25	146,213	487
Plot 11 (2029) Building-Electrical	261	2191	25	54,775	183
Plot 11 (2029) Building-Landscaping	261	2556	25	63,900	213
Plot 11 (2029) Landscaping	261	3756	25	93,900	313
Plot 11 (2029) Temporary Utilities	261	1408.5	25	35,213	117
Plot 11 (2029) Curbing/Drive Approaches	261	3130	25	78,250	261
Plot 11 (2029) Paving	261	0	25	-	-
Plot 11 (2030) Mass Excavation	260	1705	25	42,625	142
Plot 11 (2030) Finish Grading	260	26	25	650	2
Plot 11 (2030) Utilities	260	6260	25	156,500	522
Plot 11 (2030) Building-Concrete	260	0	25	-	-

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plot 11 (2030) Building-Wet Utilities	260	7512	25	187,800	626
Plot 11 (2030) Building-Electrical	260	2191	25	54,775	183
Plot 11 (2030) Building-Landscaping	260	5008	25	125,200	417
Plot 11 (2030) Landscaping	260	0	25	-	-
Plot 11 (2030) Temporary Utilities	260	0	25	-	-
Plot 11 (2030) Curbing/Drive Approaches	260	528	25	13,200	44
Plot 11 (2030) Paving	260	624	25	15,600	52
Plot 11 (2031) Mass Excavation	260	1705	25	42,625	142
Plot 11 (2031) Finish Grading	260	52	25	1,300	4
Plot 11 (2031) Utilities	260	6260	25	156,500	522
Plot 11 (2031) Building-Concrete	260	7512	25	187,800	626
Plot 11 (2031) Building-Wet Utilities	260	7512	25	187,800	626
Plot 11 (2031) Building-Electrical	260	5008	25	125,200	417
Plot 11 (2031) Building-Landscaping	260	0	25	-	-
Plot 11 (2031) Landscaping	260	0	25	-	-
Plot 11 (2031) Temporary Utilities	260	0	25	-	-
Plot 11 (2031) Curbing/Drive Approaches	260	624	25	15,600	52
Plot 11 (2031) Paving	260	528	25	13,200	44
Plots 11 and 12 (2032) Mass Excavation	260	2945	25	73,625	245
Plots 11 and 12 (2032) Finish Grading	260	26	25	650	2
Plots 11 and 12 (2032) Utilities	260	3442	25	86,050	287
Plots 11 and 12 (2032) Building-Concrete	260	5848.5	25	146,213	487
Plots 11 and 12 (2032) Building-Wet Utilities	260	2191	25	54,775	183
Plots 11 and 12 (2032) Building-Electrical	260	2556	25	63,900	213
Plots 11 and 12 (2032) Building-Landscaping	260	3756	25	93,900	313
Plots 11 and 12 (2032) Landscaping	260	3130	25	78,250	261
Plots 11 and 12 (2032) Temporary Utilities	260	0	25	-	-
Plots 11 and 12 (2032) Curbing/Drive Approaches	260	2816	25	70,400	235
Plots 11 and 12 (2032) Paving	260	264	25	6,600	22
Plot 12 (2033) Finish Grading	260	4185	25	104,625	349
Plot 12 (2033) Utilities	260	0	25	-	-
Plot 12 (2033) Building-Concrete	260	624	25	15,600	52
Plot 12 (2033) Building-Wet Utilities	260	4185	25	104,625	349
Plot 12 (2033) Building-Electrical	260	2191	25	54,775	183
Plot 12 (2033) Building-Landscaping	260	104	25	2,600	9
Plot 12 (2033) Landscaping	260	7512	25	187,800	626
Plot 12 (2033) Temporary Utilities	260	0	25	-	-
Plot 12 (2033) Curbing/Drive Approaches	260	6260	25	156,500	522
Plot 12 (2033) Paving	260	0	25	-	-
Plots 12 and 21,22 (2034) Finish Grading	260	5008	25	125,200	417
Plots 12 and 21,22 (2034) Utilities	260	0	25	-	-
Plots 12 and 21,22 (2034) Building-Concrete	260	2635	25	65,875	220
Plots 12 and 21,22 (2034) Building-Wet Utilities	260	3442	25	86,050	287
Plots 12 and 21,22 (2034) Building-Electrical	260	3442	25	86,050	287
Plots 12 and 21,22 (2034) Building-Landscaping	260	5848.5	25	146,213	487
Plots 12 and 21,22 (2034) Landscaping	260	2,191	25	54,775	183

Building Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Plots 12 and 21,22 (2034) Temporary Utilities	260.0	2,556.0	25	63,900	213
Plots 12 and 21,22 (2034) Curbing/Drive Approaches	260	3756	25	93,900	313
Plots 12 and 21,22 (2034) Paving	260	1408.5	25	35,213	117
				10,324,213	
					34,414

This tool provides a quick estimation of the fuel use and emissions for your equipment in a specific year. The results may slightly differ from those from the official inventory model.

Instructions:

Enter the horsepwer, model year, and other details about your equipment in the Input box.

Make sure to update the ***load factor*** for your equipment using the lookup table.

The ***Output*** box gives a quick estimation of the fuel use, NOx, PM, and THC emission for your equipment.

Input	Input Engine Here
Horsepower (hp)	120
Model year	2011
Calendar year	2015
Activity (annual hours)	250
Accumulated hours on equipment (estimate using annual-hours*age if you only know the age of the equipment)	1000
Load factor (check the lookup table)	0.2

Results	
Fuel Used (gallon)	310
NOx Emissions (kg)	15.4
PM Emissions (kg)	0.7
THC Emissions (kg)	0.7
CO2 Emissions (kg)	3162.6
NOx Emission Factor (including deterioration and fuel correction factor): gram/bhp-hr	2.57
PM Emission Factor (including deterioration and fuel correction factor): gram/bhp-hr	0.12
THC Emission Factor (including deterioration and fuel correction factor): gram/ bhp-hr	0.11

Intermediate steps

HPbin	175
NOx_EF0	2.67
NOx_DR	3.5E-05
NOx_FCF	0.950
PM_EF0	0.12
PM_DR	8.6E-06
PM_FCF	0.90
THC_EF0	0.10
THC_DR	2.5E-05
THC_FCF	0.90
NOx_EF (g/hp-hr)	2.57
PM_EF (g/hp-hr)	0.12
THC_EF (g/hp-hr)	0.11
CO2_EF (kg/gallon-diesel)*	10.21
BSFC (lb/hp-hr)	0.367
Unit conversion (lb/gallon)	7.109

*Reference: www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

Loac Factor Lookup Table

Equipment Category	Equipment Type	Details	Load Factor
Agriculture equipment	Agricultural tractors		0.48
	Combine harvesters		0.44
	Forage & silage harvesters		0.44
	Cotton pickers		0.44
	Nut harvester		0.44
	Other harvesters		0.44
	Balers (self propelled)		0.50
	Bale wagons (self propelled)		0.50
	Swathers/windrowers/hay conditioners		0.48
	Hay Squeeze/Stack retriever		0.42
	Sprayers/Spray rigs		0.42
	Construction equipment		0.40
	Other non-mobile		0.48
	Forklifts		0.40
	Atvs		0.40
	Others		0.40
Portable equipment	All portable equipment		0.31
Cargo Handling Equipment	Construction equipment		0.55
	Container handling equipment		0.59
	Forklift		0.30
	Other general industrial equipment		0.51
	Rtg crane		0.20
	Yard tractor		0.39
Transport Refrigeration Units (TRU)	TRU on trailers	25 HP and over, MY2012 and Older	0.46
	TRU on trailers	25 HP and over, MY2013 and Newer	0.38
	TRU on trailers	23 HP and Over, below 25 HP, All years	0.46
	TRU on trucks	Below 23 HP, All Model years	0.56
	TRU on railcars	25 HP and over, MY2012 and Older	0.33
	TRU on railcars	25 HP and over, MY2013 and Newer	0.27
	TRU on railcars	Below 25 HP, All Model years	0.33
	TRU with generators	25 HP and over, MY2012 and Older	0.46
	TRU with generators	25 HP and Over, MY2013 and Newer	0.38
	TRU with generators	23 HP and Over, below 25 HP, All Model Years	0.46
Ground Support Equipment	Passenger Stand		0.40
	A/C Tug Narrow Body		0.54
	A/C Tug Wide Body		0.54
	Baggage Tug		0.37
	Belt Loader		0.34
	Bobtail		0.37
	Cargo Loader		0.34
	Cargo Tractor		0.36
	Forklift (GSE)		0.20
	Lift (GSE)		0.34
	Other GSE		0.34
Construction and Industrial Equipment	Cranes		0.29
	Crawler Tractors		0.43
	Excavators		0.38
	Graders		0.41
	Off-Highway Tractors		0.44
	Off-Highway Trucks		0.38
	Other Construction Equipment		0.42
	Pavers		0.42
	Paving Equipment		0.36
	Rollers		0.38
	Rough Terrain Forklifts		0.40
	Rubber Tired Dozers		0.40
	Rubber Tired Loaders		0.36
	Scrapers		0.48
	Skid Steer Loaders		0.37
	Surfacing Equipment		0.30
	Tractors/Loaders/Backhoes		0.37
	Trenchers		0.50
	Aerial Lifts		0.31
	Forklifts		0.20
	Other General Industrial Equipment		0.34
	Other Material Handling Equipment		0.40
	Sweepers/Scrubbers		0.46
Oil and Drill Rigs	Drill Rig (Mobile)		0.50
	Workover Rig (Mobile)		0.50
	Bore/Drill Rigs		0.50

EMFAC2017 Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

VMT	Fuel Consumption (gal/day)	Annual VMT	ıal Fuel Consumption (gals)
18622369	2490584	6,797,164,758.09	909,063,308.01
gal/mi			
0.1337415	7.477108248		

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption
SOUTH CO.	2020	HHDT	Aggregate	Aggregated	GAS	87.06695208	7544.942081	1.924993227
SOUTH CO.	2020	HHDT	Aggregate	Aggregated	DSL	94401.00533	11283644.05	1766.775921
SOUTH CO.	2020	HHDT	Aggregate	Aggregated	NG	4355.501273	177332.3374	81.93282418
SOUTH CO.	2020	LDA	Aggregate	Aggregated	GAS	6178149.091	245245789.6	8365.832232
SOUTH CO.	2020	LDA	Aggregate	Aggregated	DSL	49858.7341	2047191.978	44.27440932
SOUTH CO.	2020	LDA	Aggregate	Aggregated	ELEC	89063.98818	3493455.584	0
SOUTH CO.	2020	LDT1	Aggregate	Aggregated	GAS	673575.0448	25456837.2	1009.703307
SOUTH CO.	2020	LDT1	Aggregate	Aggregated	DSL	436.3696382	10308.34943	0.467774015
SOUTH CO.	2020	LDT1	Aggregate	Aggregated	ELEC	2427.188659	91067.68136	0
SOUTH CO.	2020	LDT2	Aggregate	Aggregated	GAS	2108549.59	81418834.91	3534.790518
SOUTH CO.	2020	LDT2	Aggregate	Aggregated	DSL	11074.63811	498881.6758	14.81780046
SOUTH CO.	2020	LDT2	Aggregate	Aggregated	ELEC	12230.90008	414287.5504	0
SOUTH CO.	2020	LHDT1	Aggregate	Aggregated	GAS	173614.6174	6333810.586	612.6252653
SOUTH CO.	2020	LHDT1	Aggregate	Aggregated	DSL	103329.3828	4276352.725	203.9630505
SOUTH CO.	2020	LHDT2	Aggregate	Aggregated	GAS	28771.81583	1018932.099	113.1501167
SOUTH CO.	2020	LHDT2	Aggregate	Aggregated	DSL	40572.86872	1644689.797	86.79286353
SOUTH CO.	2020	MCY	Aggregate	Aggregated	GAS	269351.1059	1916380.232	52.6214956
SOUTH CO.	2020	MDV	Aggregate	Aggregated	GAS	1509432.595	54618603.59	2902.923832
SOUTH CO.	2020	MDV	Aggregate	Aggregated	DSL	26705.37886	1126984.42	43.60769552
SOUTH CO.	2020	MDV	Aggregate	Aggregated	ELEC	3852.020312	134619.071	0
SOUTH CO.	2020	MH	Aggregate	Aggregated	GAS	35045.56901	331213.3277	66.05937563
SOUTH CO.	2020	MH	Aggregate	Aggregated	DSL	11453.97402	113100.7197	10.93302012
SOUTH CO.	2020	MHDT	Aggregate	Aggregated	GAS	24612.44595	1335068.759	269.6494288
SOUTH CO.	2020	MHDT	Aggregate	Aggregated	DSL	116761.6622	7338725.152	723.8084841
SOUTH CO.	2020	OBUS	Aggregate	Aggregated	GAS	5846.82319	252354.2354	51.34879326
SOUTH CO.	2020	OBUS	Aggregate	Aggregated	DSL	4066.240591	300794.1374	37.44688162
SOUTH CO.	2020	SBUS	Aggregate	Aggregated	GAS	2268.162807	93420.86198	10.43507716
SOUTH CO.	2020	SBUS	Aggregate	Aggregated	DSL	6271.332305	198203.0432	26.62266433
SOUTH CO.	2020	UBUS	Aggregate	Aggregated	GAS	938.2571472	88202.7311	18.36430248
SOUTH CO.	2020	UBUS	Aggregate	Aggregated	DSL	18.19691831	1877.446227	0.296796191
SOUTH CO.	2020	UBUS	Aggregate	Aggregated	ELEC	12.11693886	1072.906717	0
SOUTH CO.	2020	UBUS	Aggregate	Aggregated	NG	5222.885974	571203.4089	144.1754651

EMFAC2017 Emissions Inventory

Region Type: Air Basin
Region: South Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Haul Trucks (T7 Single Construction)			
VMT	Fuel Consumption (gal/day)	Annual VMT	Annual Fuel Consumption
491278	76207	179,316,569	27,815,492
gal/mi			
0.155119475	6.446643786		

Workers (LDA,LDT1, LDT2)			
VMT	Fuel Consumption (gal/day)	Annual VMT	Annual Fuel Consumption
358676655	12969886	130,916,978,908	4,734,008,405
gal/mi			
0.0362	27.65457256		

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
SOUTH CO	2020	All Other Buses	Aggregate	Aggregate	DSL	3150.14	183816.726	26461.1422	18.7149406
SOUTH CO	2020	LDA	Aggregate	Aggregate	GAS	6178149	245245790	29171004	8365.83223
SOUTH CO	2020	LDA	Aggregate	Aggregate	DSL	49858.7	2047191.98	236026.476	44.2744093
SOUTH CO	2020	LDA	Aggregate	Aggregate	ELEC	89064	3493455.58	446754.784	0
SOUTH CO	2020	LDT1	Aggregate	Aggregate	GAS	673575	25456837.2	3092733.34	1009.70331
SOUTH CO	2020	LDT1	Aggregate	Aggregate	DSL	436.37	10308.3494	1529.80218	0.46777402
SOUTH CO	2020	LDT1	Aggregate	Aggregate	ELEC	2427.19	91067.6814	11955.9197	0
SOUTH CO	2020	LDT2	Aggregate	Aggregate	GAS	2108550	81418834.9	9872322.88	3534.79052
SOUTH CO	2020	LDT2	Aggregate	Aggregate	DSL	11074.6	498881.676	54951.1663	14.8178005
SOUTH CO	2020	LDT2	Aggregate	Aggregate	ELEC	12230.9	414287.55	62115.0794	0
SOUTH CO	2020	LHD1	Aggregate	Aggregate	GAS	173615	6333810.59	2586599.11	612.625265
SOUTH CO	2020	LHD1	Aggregate	Aggregate	DSL	103329	4276352.72	1299753.65	203.963051
SOUTH CO	2020	LHD2	Aggregate	Aggregate	GAS	28771.8	1018932.1	428657.186	113.150117
SOUTH CO	2020	LHD2	Aggregate	Aggregate	DSL	40572.9	1644689.8	510355.648	86.7928635
SOUTH CO	2020	MCY	Aggregate	Aggregate	GAS	269351	1916380.23	538702.212	52.6214956
SOUTH CO	2020	MDV	Aggregate	Aggregate	GAS	1509433	54618603.6	6970807.91	2902.92383
SOUTH CO	2020	MDV	Aggregate	Aggregate	DSL	26705.4	1126984.42	131705.033	43.6076955
SOUTH CO	2020	MDV	Aggregate	Aggregate	ELEC	3852.02	134619.071	19750.8597	0
SOUTH CO	2020	MH	Aggregate	Aggregate	GAS	35045.6	331213.328	3505.95872	66.0593756
SOUTH CO	2020	MH	Aggregate	Aggregate	DSL	11454	113100.72	1145.3974	10.9330201
SOUTH CO	2020	Motor Coach	Aggregate	Aggregate	DSL	916.105	116977.411	13375.1274	18.731941
SOUTH CO	2020	OBUS	Aggregate	Aggregate	GAS	5846.82	252354.235	116983.238	51.3487933
SOUTH CO	2020	PTO	Aggregate	Aggregate	DSL	0	176778.952	0	36.7581963
SOUTH CO	2020	SBUS	Aggregate	Aggregate	GAS	2268.16	93420.862	9072.65123	10.4350772
SOUTH CO	2020	SBUS	Aggregate	Aggregate	DSL	6271.33	198203.043	72370.3053	26.6226643
SOUTH CO	2020	T6 Ag	Aggregate	Aggregate	DSL	19.6429	218.054583	86.4288167	0.02481043
SOUTH CO	2020	T6 CAIRP heavy	Aggregate	Aggregate	DSL	446.07	88799.3109	6512.61531	8.01914752
SOUTH CO	2020	T6 CAIRP small	Aggregate	Aggregate	DSL	233.435	12340.8476	3408.15225	1.18210681
SOUTH CO	2020	T6 instate construction heavy	Aggregate	Aggregate	DSL	4054.98	275690.545	18332.4016	28.1831622
SOUTH CO	2020	T6 instate construction small	Aggregate	Aggregate	DSL	14124.7	721061.752	63857.0606	72.8708728
SOUTH CO	2020	T6 instate heavy	Aggregate	Aggregate	DSL	18502.8	2507593.31	213520.127	238.187185
SOUTH CO	2020	T6 instate small	Aggregate	Aggregate	DSL	70646.5	3544993.31	815250.457	354.066367
SOUTH CO	2020	T6 OOS heavy	Aggregate	Aggregate	DSL	254.967	50953.5321	3722.51103	4.59778773
SOUTH CO	2020	T6 OOS small	Aggregate	Aggregate	DSL	135.07	7080.84594	1972.02343	0.67920486
SOUTH CO	2020	T6 Public	Aggregate	Aggregate	DSL	6648.81	101706.244	20168.0533	12.9532819
SOUTH CO	2020	T6 utility	Aggregate	Aggregate	DSL	1694.72	28287.3938	19489.3218	3.04455779
SOUTH CO	2020	T6TS	Aggregate	Aggregate	GAS	24612.4	1335068.76	492445.818	269.649429
SOUTH CO	2020	T7 Ag	Aggregate	Aggregate	DSL	14.8378	252.575311	65.2863243	0.04436246
SOUTH CO	2020	T7 CAIRP	Aggregate	Aggregate	DSL	9582.09	1734645.99	139898.501	256.922836
SOUTH CO	2020	T7 CAIRP construction	Aggregate	Aggregate	DSL	1076.68	198030.913	4867.62771	27.7712143
SOUTH CO	2020	T7 NNOOS	Aggregate	Aggregate	DSL	10476.8	2114657.85	152961.954	303.319739
SOUTH CO	2020	T7 NOOS	Aggregate	Aggregate	DSL	3766.55	681535.17	54991.6834	103.346222
SOUTH CO	2020	T7 POLA	Aggregate	Aggregate	DSL	13120.5	1606065.94	99715.6884	282.593311
SOUTH CO	2020	T7 Public	Aggregate	Aggregate	DSL	8123.02	164573.585	24639.8135	29.0956097
SOUTH CO	2020	T7 Single	Aggregate	Aggregate	DSL	12556	890294.14	144894.407	137.911303
SOUTH CO	2020	T7 single construction	Aggregate	Aggregate	DSL	6965.69	491278.272	31491.5937	76.2068277
SOUTH CO	2020	T7 SWCV	Aggregate	Aggregate	DSL	2684.77	109695.462	10470.6135	54.0468004
SOUTH CO	2020	T7 SWCV	Aggregate	Aggregate	NG	4355.5	177332.337	16986.455	81.9328242
SOUTH CO	2020	T7 tractor	Aggregate	Aggregate	DSL	19595.4	2696937.45	248861.111	393.43887
SOUTH CO	2020	T7 tractor construction	Aggregate	Aggregate	DSL	5766.76	405261.322	26071.2925	63.0776655
SOUTH CO	2020	T7 utility	Aggregate	Aggregate	DSL	671.926	13636.4223	7727.14713	2.24296506
SOUTH CO	2020	T7IS	Aggregate	Aggregate	GAS	87.067	7544.94208	1742.03558	1.92499323
SOUTH CO	2020	UBUS	Aggregate	Aggregate	GAS	938.257	88202.7311	3753.02859	18.3643025
SOUTH CO	2020	UBUS	Aggregate	Aggregate	DSL	18.1969	1877.44623	72.7876732	0.29679619
SOUTH CO	2020	UBUS	Aggregate	Aggregate	ELEC	12.1169	1072.90672	48.4677554	0
SOUTH CO	2020	UBUS	Aggregate	Aggregate	NG	5222.89	571203.409	20891.5439	144.175465

Temporary Construction Trailer		
Land Use	**Square Feet**	**Energy Use per year (kWh)**
General Office	1,000	12,990
Note: CalEEMod 2016.3.2 used to estimate energy use for temporary construction office		

Electric-powered Construction Equipment

kWh/hp-hr
0.7457

Equipment	# of Equipment	Hours/Day	Horsepower	Load Factor	Number Days	Total hp-hr	kWh	kWh/yr
Cranes	3	12	231	0.29	944	2,276,588	1,697,652	108,824
Signal Boards	2	12	6	0.82	1485	175,349	130,757.60	8,382
Total	**-**	**-**	**-**	**-**	**-**	**2,451,937**	**1,828,409**	**117,206**

Notes:

1. Cranes horsepower and load factors taken from CalEEMod

2. Conversion factor taken from University of North Carolina Unit Conversion Dictionary; Source: http://www.unc.edu/~rowlett/units/dictH.html

E-4 WLC Operational Energy Demand and VMT

WLC CNG Fueling Station Consumption

Truck CNG Capacity	Unit
75	DGE
139.3	SCF/DGE
10,448	SCF

State CNG/LNG Annual Fuel Use (million CF)	MMBtu
2,110,829	2,184,708,015

Source	Fuel Capacity	ADT	Trucks/Day	Fuel Use/Day (CF)	Fuel Use/Yr (MMCF)	% of State	MMBtu
Heavy Duty Trucks	10,448	408	204	2,131,290	777.92	0.037%	805,148

Sources:

1 US Energy Information Administration, California Natural Gas Consumption by Year (2018). Available at: https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus

2 US Department of Energy, Case Study - Natural Gas Regional Transport Trucks (2016). Available at: https://www.afdc.energy.gov/uploads/publication/ng_regional_transport_trucks.pdf

3 Alternative Fuels Data Center, Gasonline and Diesel Gallon Equivalency Methodology. Available at: https://www.afdc.energy.gov/fuels/equivalency_methodology.html

4 WSP, Traffic Impact Analysis Report for The World Logistics Center (2018).

World Logistics Center
Operational Fuel Use
Forklifts

Forklift Assumptions

Parameter	Value	Reference/Source
Quantity of non-diesel forklifts per light logistics planning area	5	Highland Fairview 10/11/13
Number of light logistics planning areas	3	
Quantity of non-diesel forklifts	15	
Average daily operating hours per forklift	4	
Horsepower	93	Cat Lift Trucks, LG Gas Cushion Tire Lift Trucks, Model GC35K, http://www.cat-lift.com/_cat/PDFs/CLT-PDF030/CLT-PDF030.html
Load factor	0.2	
Annual days of operation	260	
Annual hp-hr	290,160	
Btu/hp-hr	2,542.5	EPA Conversion factor, https://www3.epa.gov/ttnchie1/ap42/appendix/appa.pdf
Annual Btu	737,731,800	
Annual MMBtu	**737.73**	

World Logistics Center
Operational Fuel Use
Yard Trucks/Hostlers

Yard Trucks/Hostlers

Parameter	Value	Source/Reference
Number of yard trucks per facility	2	Highland Fairview, October 10, 2013
Fuel type	Propane	
Average building/facility area, sq. ft.	1,500,000	
Warehouse area (minus logistics), sq. ft.	40,400,000	
Average number of buildings	26.9	
Yard trucks	54	
Horsepower	199	Port of Los Angeles Inventory of Emissions - 2016. Starcrest Consulting Group. Table 5.1 (average HP of propane yard tractor).
WHP	155	Wheel Horsepower to Crankshaft Horsepower Guestimator (Rear-Wheel Drive). http://www.mk5cortinaestate.co.uk/calculator4.php
Load factor	0.39	CARB's Emission Inventory Development for Cargo Handling Equipment. https://www.arb.ca.gov/regact/2011/cargo11/cargoappb.pdf
Maximum daily operating hours per truck	7	
Annual days of operation	260	
Annual hp-hr	5,926,357	
Btu/hp-hr	2,454	EPA Conversion Factor, https://www3.epa.gov/ttnchie1/ap42/appendix/appa.pdf
Annual Btu	14,543,279,587	
Annual MMBtu	**14,543.28**	

World Logistics Center
Operational Energy Analysis
2025 Low EV Scenario
Fuel Usage from VMT

VMT		
LDA	326,275	miles/year
LDT1	24,073	miles/year
LDT2	120,472	miles/year
LHDT1	35,977	miles/year
LHDT2	17,249	miles/year
MDV	25,945	miles/year
HHDT	179,492	miles/year
MHDT	107,645	miles/year

Fuel Type:[1]	GAS	DSL	ELEC	NG	
Percent:					
LDA	96.1%	1.0%	2.9%	0.0%	100.0%
LDT1	98.6%	0.0%	1.4%	0.0%	100.0%
LDT2	97.5%	0.8%	1.8%	0.0%	100.0%
LHDT1	55.9%	44.1%	0.0%	0.0%	100.0%
LHDT2	35.4%	64.6%	0.0%	0.0%	100.0%
MDV	95.9%	2.5%	1.6%	0.0%	100.0%
HHDT	0.1%	94.7%	0.0%	5.3%	100.0%
MHDT	16.3%	83.7%	0.0%	0.0%	100.0%
Miles per Gallon Fuel:					
LDA	33.50	52.50	-	-	
LDT1	28.60	23.60	-	-	
LDT2	27.30	38.60	-	-	
LHDT1	10.90	22.60	-	-	
LHDT2	9.50	20.40	-	-	
MDV	22.00	29.60	-	-	
HHDT	4.50	7.30	-	2.30	
MHDT	5.30	11.50	-	-	
Annual VMT by Fuel Type :					miles/year
LDA	313,648	3,165	9,462	0	
LDT1	23,729	10	335	0	
LDT2	117,424	904	2,144	0	
LHDT1	20,097	15,880	0	0	
LHDT2	6,110	11,139	0	0	
MDV	24,884	638	420	0	
HHDT	126	169,925	0	9,441	
MHDT	17,578	90,066	0	0	
Total	523,595	291,727	12,361	9,441	
Annual Fuel Savings from Electric Vehicles:[2]			415		gal/year
Annual fuel use by vehicle type:					(assumed t
	gal/year	**gal/year**		**MMbtu/year**	
LDA	9,363	60	-	-	
LDT1	830	0	-	-	
LDT2	4,301	23	-	-	
LHDT1	1,844	703	-	-	
LHDT2	643	546	-	-	
MDV	1,131	22	-	-	
HHDT	28	23,277	-	612	
MHDT	3,317	7,832	-	-	
Total	**21,456**	**32,464**	**0**	**612**	

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2014/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

World Logistics Center
Operational Energy Analysis
2025 Medium EV Scenario
Fuel Usage from VMT

VMT		
LDA	326,275	miles/year
LDT1	24,073	miles/year
LDT2	120,472	miles/year
LHDT1	35,977	miles/year
LHDT2	17,249	miles/year
MDV	25,945	miles/year
HHDT	179,492	miles/year
MHDT	107,645	miles/year

Fuel Type:[1]	GAS	DSL	ELEC	NG	
Percent:					
LDA	93.8%	1.0%	5.2%	0.0%	100.0%
LDT1	94.8%	0.0%	5.2%	0.0%	100.0%
LDT2	94.0%	0.8%	5.2%	0.0%	100.0%
LHDT1	55.9%	44.1%	0.0%	0.0%	100.0%
LHDT2	35.4%	64.6%	0.0%	0.0%	100.0%
MDV	92.3%	2.5%	5.2%	0.0%	100.0%
HHDT	0.1%	94.7%	0.0%	5.3%	100.0%
MHDT	16.3%	83.7%	0.0%	0.0%	100.0%
Miles per Gallon Fuel:					
LDA	33.50	52.50	-	-	
LDT1	28.60	23.60	-	-	
LDT2	27.30	38.60	-	-	
LHDT1	10.90	22.60	-	-	
LHDT2	9.50	20.40	-	-	
MDV	22.00	29.60	-	-	
HHDT	4.50	7.30	-	2.30	
MHDT	5.30	11.50	-	-	
Annual VMT by Fuel Type :					miles/year
LDA	306,046	3,165	16,966	0	
LDT1	22,821	10	1,252	0	
LDT2	113,244	904	6,265	0	
LHDT1	20,097	15,880	0	0	
LHDT2	6,110	11,139	0	0	
MDV	23,947	638	1,349	0	
HHDT	126	169,925	0	9,441	
MHDT	17,578	90,066	0	0	
Total	509,968	291,727	25,832	9,441	
Annual Fuel Savings from Electric Vehicles:[2]			867		gal/year
Annual fuel use by vehicle type:					(assumed t
	gal/year	**gal/year**		**kBtu/year**	
LDA	9,136	60	-	-	
LDT1	798	0	-	-	
LDT2	4,148	23	-	-	
LHDT1	1,844	703	-	-	
LHDT2	643	546	-	-	
MDV	1,089	22	-	-	
HHDT	28	23,277	-	612	
MHDT	3,317	7,832	-	-	
Total	**21,002**	**32,464**	**0**	**612**	

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2014/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

World Logistics Center
Operational Energy Analysis
2025 High EV Scenario
Fuel Usage from VMT

VMT		
LDA	326,275	miles/year
LDT1	24,073	miles/year
LDT2	120,472	miles/year
LHDT1	35,977	miles/year
LHDT2	17,249	miles/year
MDV	25,945	miles/year
HHDT	179,492	miles/year
MHDT	107,645	miles/year

Fuel Type:[1]	GAS	DSL	ELEC	NG	
Percent:					
LDA	93.8%	1.0%	5.2%	0.0%	100.0%
LDT1	94.8%	0.0%	5.2%	0.0%	100.0%
LDT2	94.0%	0.8%	5.2%	0.0%	100.0%
LHDT1	50.9%	39.1%	10.0%	0.0%	100.0%
LHDT2	30.4%	59.6%	10.0%	0.0%	100.0%
MDV	92.3%	2.5%	5.2%	0.0%	100.0%
HHDT	0.1%	74.7%	20.0%	5.3%	100.0%
MHDT	16.3%	63.7%	20.0%	0.0%	100.0%
Miles per Gallon Fuel:					
LDA	33.50	52.50	-	-	
LDT1	28.60	23.60	-	-	
LDT2	27.30	38.60	-	-	
LHDT1	10.90	22.60	-	-	
LHDT2	9.50	20.40	-	-	
MDV	22.00	29.60	-	-	
HHDT	4.50	7.30	-	2.30	
MHDT	5.30	11.50	-	-	
Annual VMT by Fuel Type :					miles/year
LDA	306,046	3,165	16,966	0	
LDT1	22,821	10	1,252	0	
LDT2	113,244	904	6,265	0	
LHDT1	18,312	14,067	3,598	0	
LHDT2	5,244	10,280	1,725	0	
MDV	23,947	638	1,349	0	
HHDT	126	134,080	35,898	9,441	
MHDT	17,578	68,570	21,529	0	
Total	507,318	231,714	88,582	9,441	
Annual Fuel Savings from Electric Vehicles:[2]			2973		gal/year
Annual fuel use by vehicle type:					(assumed t
	gal/year	**gal/year**		**kBtu/year**	
LDA	9,136	60	-	-	
LDT1	798	0	-	-	
LDT2	4,148	23	-	-	
LHDT1	1,680	622	-	-	
LHDT2	552	504	-	-	
MDV	1,089	22	-	-	
HHDT	28	18,367	-	612	
MHDT	3,317	5,963	-	-	
Total	**20,747**	**25,562**	**0**	**612**	

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2014/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

World Logistics Center
Operational Energy Analysis
2035 Low EV Scenario
Fuel Usage from VMT

VMT		
LDA	598,447	miles/year
LDT1	44,154	miles/year
LDT2	220,968	miles/year
LHDT1	57,934	miles/year
LHDT2	27,805	miles/year
MDV	45,362	miles/year
HHDT	301,181	miles/year
MHDT	180,624	miles/year

Fuel Type:[1]	GAS	DSL	ELEC	NG	
Percent:					
LDA	93.6%	1.1%	5.3%	0.0%	100.0%
LDT1	97.0%	0.0%	3.0%	0.0%	100.0%
LDT2	95.4%	0.9%	3.7%	0.0%	100.0%
LHDT1	48.7%	51.3%	0.0%	0.0%	100.0%
LHDT2	29.4%	70.6%	0.0%	0.0%	100.0%
MDV	93.0%	3.1%	3.9%	0.0%	100.0%
HHDT	0.1%	93.3%	0.0%	6.6%	100.0%
MHDT	14.3%	85.7%	0.0%	0.0%	100.0%
Miles per Gallon Fuel:					
LDA	40.00	61.20	-	-	
LDT1	33.85	30.02	-	-	
LDT2	34.07	45.45	-	-	
LHDT1	12.37	25.50	-	-	
LHDT2	10.72	22.95	-	-	
MDV	27.75	34.98	-	-	
HHDT	5.28	8.95	-	2.71	
MHDT	6.08	13.21	-	-	
Annual VMT by Fuel Type :					miles/year
LDA	560,303	6,634	31,511	0	
LDT1	42,820	6	1,327	0	
LDT2	210,815	2,052	8,101	0	
LHDT1	28,216	29,718	0	0	
LHDT2	8,183	19,622	0	0	
MDV	42,167	1,419	1,776	0	
HHDT	240	281,013	0	19,927	
MHDT	25,864	154,760	0	0	
Total	918,607	495,224	42,716	19,927	
Annual Fuel Savings from Electric Vehicles:[2]			1187		gal/year
Annual fuel use by vehicle type:					(assumed t
	gal/year	**gal/year**		**kBtu/year**	
LDA	14,006	108	-	-	
LDT1	1,265	0	-	-	
LDT2	6,189	45	-	-	
LHDT1	2,282	1,166	-	-	
LHDT2	764	855	-	-	
MDV	1,520	41	-	-	
HHDT	45	31,414	-	1,094	
MHDT	4,257	11,716	-	-	
Total	**30,327**	**45,345**	**0**	**1,094**	

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2014/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

World Logistics Center
Operational Energy Analysis
2035 Medium EV Scenario
Fuel Usage from VMT

VMT		
LDA	598,447	miles/year
LDT1	44,154	miles/year
LDT2	220,968	miles/year
LHDT1	57,934	miles/year
LHDT2	27,805	miles/year
MDV	45,362	miles/year
HHDT	301,181	miles/year
MHDT	180,624	miles/year

Fuel Type:[1]	GAS	DSL	ELEC	NG	
Percent:					
LDA	77.9%	1.1%	21.0%	0.0%	100.0%
LDT1	79.0%	0.0%	21.0%	0.0%	100.0%
LDT2	78.1%	0.9%	21.0%	0.0%	100.0%
LHDT1	48.7%	51.3%	0.0%	0.0%	100.0%
LHDT2	29.4%	70.6%	0.0%	0.0%	100.0%
MDV	74.4%	3.1%	22.5%	0.0%	100.0%
HHDT	0.1%	93.3%	0.0%	6.6%	100.0%
MHDT	14.3%	85.7%	0.0%	0.0%	100.0%
Miles per Gallon Fuel:					
LDA	40.00	61.20	-	-	
LDT1	33.85	30.02	-	-	
LDT2	34.07	45.45	-	-	
LHDT1	12.37	25.50	-	-	
LHDT2	10.72	22.95	-	-	
MDV	27.75	34.98	-	-	
HHDT	5.28	8.95	-	2.71	
MHDT	6.08	13.21	-	-	
Annual VMT by Fuel Type :					miles/year
LDA	466,191	6,634	125,674	0	
LDT1	34,882	6	9,272	0	
LDT2	172,513	2,052	46,403	0	
LHDT1	28,216	29,718	0	0	
LHDT2	8,183	19,622	0	0	
MDV	33,749	1,419	10,206	0	
HHDT	240	281,013	0	19,927	
MHDT	25,864	154,760	0	0	
Total	769,837	495,224	191,556	19,927	
Annual Fuel Savings from Electric Vehicles:[2]			5325		gal/year
Annual fuel use by vehicle type:					(assumed t
	gal/year	**gal/year**		**kBtu/year**	
LDA	11,654	108	-	-	
LDT1	1,030	0	-	-	
LDT2	5,064	45	-	-	
LHDT1	2,282	1,166	-	-	
LHDT2	764	855	-	-	
MDV	1,216	41	-	-	
HHDT	45	31,414	-	1,094	
MHDT	4,257	11,716	-	-	
Total	**26,313**	**45,345**	**0**	**1,094**	

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2014/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

World Logistics Center
Operational Energy Analysis
2035 High EV Scenario
Fuel Usage from VMT

	VMT	
LDA	598,447	miles/year
LDT1	44,154	miles/year
LDT2	220,968	miles/year
LHDT1	57,934	miles/year
LHDT2	27,805	miles/year
MDV	45,362	miles/year
HHDT	301,181	miles/year
MHDT	180,624	miles/year

Fuel Type:[1]	GAS	DSL	ELEC	NG	
Percent:					
LDA	77.9%	1.1%	21.0%	0.0%	100.0%
LDT1	79.0%	0.0%	21.0%	0.0%	100.0%
LDT2	78.1%	0.9%	21.0%	0.0%	100.0%
LHDT1	38.7%	41.3%	20.0%	0.0%	100.0%
LHDT2	19.4%	60.6%	20.0%	0.0%	100.0%
MDV	74.4%	3.1%	22.5%	0.0%	100.0%
HHDT	0.1%	63.3%	30.0%	6.6%	100.0%
MHDT	14.3%	55.7%	30.0%	0.0%	100.0%
Miles per Gallon Fuel:					
LDA	40.00	61.20	-	-	
LDT1	33.85	30.02	-	-	
LDT2	34.07	45.45	-	-	
LHDT1	12.37	25.50	-	-	
LHDT2	10.72	22.95	-	-	
MDV	27.75	34.98	-	-	
HHDT	5.28	8.95	-	2.71	
MHDT	6.08	13.21	-	-	
Annual VMT by Fuel Type :					miles/year
LDA	466,191	6,634	125,674	0	
LDT1	34,882	6	9,272	0	
LDT2	172,513	2,052	46,403	0	
LHDT1	22,421	23,927	11,587	0	
LHDT2	5,394	16,850	5,561	0	
MDV	33,749	1,419	10,206	0	
HHDT	240	190,647	90,354	19,927	
MHDT	25,864	100,607	54,187	0	
Total	761,252	342,142	353,245	19,927	
Annual Fuel Savings from Electric Vehicles:[2]			9820		gal/year
Annual fuel use by vehicle type:					(assumed t
	gal/year	**gal/year**		**kBtu/year**	
LDA	11,654	108	-	-	
LDT1	1,030	0	-	-	
LDT2	5,064	45	-	-	
LHDT1	1,813	938	-	-	
LHDT2	503	734	-	-	
MDV	1,216	41	-	-	
HHDT	45	21,312	-	1,094	
MHDT	4,257	7,617	-	-	
Total	**25,584**	**30,796**	**0**	**1,094**	

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2014/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

E-5 EV Scenario Assumptions

Phase 1 = 2025 completion
Phase 2 = 2035 completion

Project Total Daily Vehicle Counts
(trips to fueling station and convenience market not included)
Assumes 2 trips = 1 vehicle

	2025	2035
Passenger Vehicles	11,431	19,964
Light Trucks (2axle)	727	1,384
Medium Trucks (3 axle)	1,113	1,964
Large Trucks (4+ axle)	3,072	5,416
TOTAL	**16,343**	**28,728**

EV population and charging scenarios

A Project: EMFAC (1.1 million ZEVs in California by 2025)

Passenger EV Parking Spaces	**527**	**932**	per building code: 527 EV charging stations in 2025; 932 in 2035
Passenger vehicles and light trucks 2025:	Assume 80% locations are for Level 2 chargers @ 19.2 kW, highest rate; I vehicle per EV station per day; 4 hour charge time for 100 kWh battery;		
	20% locations with DC power blocks that can charge up to 500 kW per vehicle and can spread across multiple vehicles as needed		
	2025 avg batterysize = 100 kWh; charge capacity = 80 kWh (80 %)		
	Peak load assumptions to be provided by WSP		
Passenger vehicles & light trucks 2035	10% locations are for Level 2 chargers @ 19.2 kW, highest rate; I vehicle per EV station per day; 8 hour charge time (larger batteries)		
	90% locations with DC charging using power blocks providing up to 500 kW; can spread load across multiple vehicles as needed (100 kW avg)		
	Average battery size = 200 kWh; charge capacity = 160 kWh		
	Peak load assumptions to be provided by WSP		
Assume no truck charging			

	2025	peak rate (MW)	avg daily (MWh)	annual	2035	peak rate (MW)	avg daily (MWh)	annual	
Passenger Vehicles	288	0.7	11.5	4,206	937	5.7	74.9	27,351	Avg daily MWh are ESA estimates; peak MW from WSP
Light Trucks (2 axle)	12	0.06	0.47	173	54	0.1	2.2	793	
Medium Trucks (3 axle)	0	0	0	0	0	0	0	0	4205.9893
Large Trucks (4+ axle)	0	0	0	0	0	0	0	0	27350.776
	300	**0.75**	**12.0**	4,379	**991**	**5.9**	**77.1**	28,144	

B Modified Project: 2017 Scoping Plan w/ Moble Source Strategy and charging stations for cars and light trucks per exisitng building code

Passenger EV Parking Spaces	527	2,058	For 2025 use existing building code: for 2035 scale the Scenario A spaces based on expected EV population per MSS
Passenger vehicles 2025:	100% locations with DC charging using power blocks providing up to 500 kW; can spread load across multiple vehicles as needed (100 kW avg)		
Passenger vehicles 2040	100% locations with DC charging using power blocks providing up to 500 kW; can spread load across multiple vehicles as needed (100 kW avg)		
Light Duty Trucks:	based on MSS targets for overall EVs		
Medium Duty Trucks:	NA		
Heavy Duty Trucks:	NA		
Peak loads	Peak load methodology provided by WSP		

	2025	peak rate (MW)	avg daily (MWh)		2035	peak rate (MW)	avg daily (MWh)		
Passenger Vehicles	590	1.4	23.6	8,608	4,197	25.6	335.8	122,564	Avg Daily MWh from ESA; Peak MW from WSP
Light Trucks (2 axle)*	38	0.2	1.5	549	312	0.8	12.5	4,568	Peak and avg daily loads from WSP
Medium Trucks (3 axle)*	0				0				Peak values derived using WSP factors
Large Trucks (4+ axle)*	0				0				Peak values derived using WSP factors
	627	**1.6**	**25.1**	9,157	**4,509**	**26.4**	**348.3**	127,132	

C Modified Project: 2017 Scoping Plan w/ MSS and Sustainable Freight Action Plan and existing/expected truck regulations (CALSTART Beehive model)

Passenger EV Parking Spaces	527	2,058	same assumptions as Scenario B
Passenger vehicles: same assumptions as Scenario B			
Assume peak rate = all stations charging simultaneously			
Light Duty Trucks:	22.5% by 2035 (conservative) Same as Scenario B		
Medium Duty Trucks:	20% by 2035 (conservative)		
(large) Heavy Duty Trucks:	30% by 2035 (conservative)		
Peak loads	Peak load methodology provided by WSP		

	2025	peak rate (MW)	avg daily (MWh)	annual Mwh	2035	peak rate (MW)	avg daily (MWh)	annual Mwh
Passenger Vehicles	590	1.4	23.6	8,608	4,197	25.6	335.8	122,564
Light Trucks (2 axle)*	38	0.1	1.5	549	312	1.0	12.5	4,568
Medium Trucks (3 axle)*	111	0.5	6.0	2,189	393	1.6	21.2	7,728
Large Trucks (4+ axle)*	614	17.5	229.4	83,743	1,625	46.3	606.7	221,462
	1353	**19.5**	**260.5**	95,089	**6,527**	**74.4**	**976.2**	356,321

peak/avg ratio = 0.076238

2016 Sustainable Freight Action Plan
By 2030, deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy

2016 Mobile Source Strategy: Cleaner Technologies and Fuels Scenario
By 2030 - 4.2 ZEVs = 1.8 million pure ZEVs operating Statewide, and 2.4 million PHEVs

From CA Plug-in Electric Vehicle Collaborative: *Plugging in at Work*
Available at: http://www.pevcollaborative.org/Policy-makers

Type of Charging	Power Levels (installed circuit rating)	Miles of Range per Hour of Charging*
AC Level 1	110/120VAC at 15 or 20 Amps	~4-6 miles/hr.
AC Level 2		
3.3 kW (low)	208/240VAC at 30 Amps	8-12 miles/hr.
6.6 kW (medium)	208/240VAC at 40 Amps	16-24 miles/hr.
9.6 kW (high)	208/240VAC at 50 Amps	24-36 miles/hr.
19.2 kW (highest)	208/240VAC at 100 Amps	> 60 miles/hr.

* Refer to vehicle specifications for exact ratings.

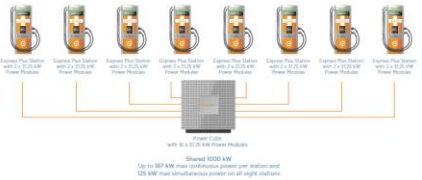
Figure 1. Charging power levels and miles of range refilled.

EV charging - power loads per charging station

Level 2 highest	240V/100A =		19.2 kW	21.36651
avg battery charge capacity:	**80 kWh**		4.2 hrs	charging time
	100 kWh battery			

30360 3.6432 9.6 2765.582

DC fast chargers	250-450V DC; 90 kW	90 kW	
	200-600V DC; 240 kW	240	
	charging block 500 kW	500 kW	
avg battery charge capacity:	**160 kWh**	2.2 hrs	90 kWcharging time
	200 kWh battery	0.32 hrs	500 kW charging time



*Projected numbers based on CALSTART/CARB 3-Year Funding Plan, and potential ZE Drayage Regulation and ZE City Center Access Regulation in 2025

https://www.chargepoint.com/products/commercial/express-plus/

Table 25: WLC Trips by Vehicle Type

ADT = average daily trips

Phase and Vehicle Type	AM Peak Hour			PM Peak Hour			ADT	gas station and convenience mkt trips	Net trips	Max Number of daily vehicles with EV charging potential	total vehicles
	In	Out	Total	In	Out	Total					
Phase 1 - 2025											
Pass Vehicles (LDA+LDT1+LDT2)	763	691	1,454	608	1,349	1,958	23,532	669	22,863	11,431	11,766
Light Trucks (2 axle)	52	56	108	52	66	118	1,751	296	1,455	727	875
Medium Trucks (3 axle)	35	41	76	54	65	119	2,226	0	2,226	1,113	1,113
Heavy Trucks (using alternative fuel station, so non-diesel)	14	13	27	11	10	21	379	379	0	0	190
Heavy Trucks	174	207	380	121	148	269	6,143	0	6,143	3,072	3,072
Total	**1,037**	**1,008**	**2,046**	**846**	**1,638**	**2,484**	**34,031**		**32,687**	**16,343**	17,015
Phase 2 - 2026 to 2035								1,344			
Pass Veh	517	487	1,003	429	973	1,402	17,066				
Light Trucks	35	42	77	39	46	85	1,313				
Medium Trucks	26	31	58	41	49	90	1,702				
Heavy Trucks	130	157	288	92	111	203	4,688				
Total	**709**	**718**	**1,426**	**602**	**1,179**	**1,781**	**24,769**				
Full Build-Out - 2035											
Pass Veh	1,280	1,178	2,458	1,038	2,322	3,360	40,598	669	39,929	19,964	20,299
Light Trucks (2 axle)	87	98	185	90	112	203	3,064	296	2,768	1,384	1,532
Medium Trucks (3 axle)	61	73	134	95	114	209	3,928	0	3,928	1,964	1,964
Heavy Trucks (using alternative fuel station, so non-diesel)	14	13	27	11	10	21	379	379	0	0	190
Heavy Trucks	304	364	668	214	259	473	10,831	0	10,831	5,415	5,415
Total	**1,746**	**1,726**	**3,472**	**1,447**	**2,818**	**4,265**	**58,800**		**57,456**	**28,728**	29,400

1,344

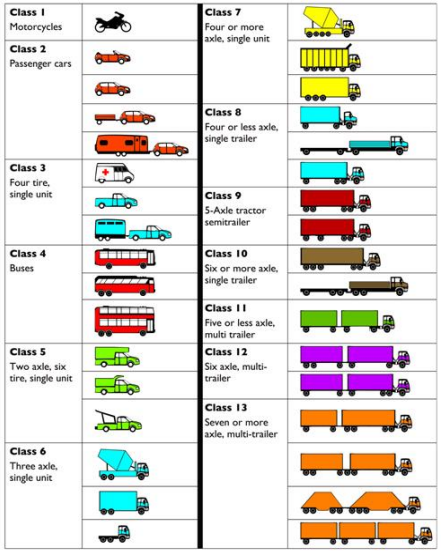
Scenario:	A		B	
	EMFAC		**Scoping Plan/MSS**	
	2025	2035	2025	2035
Passenger vehicles (LDA + LDT1 + LDT2)	11,431	19,964	11,431	19,964
Passenger EVs	**288**	**937**	**590**	**4,197**
MDVs	727	1,384	727	1,384
MDV EVs	**12**	**54**	**38**	**312**
Light Duty Electric Vehicle Populations	**300**	**991**	**627**	**4,509**

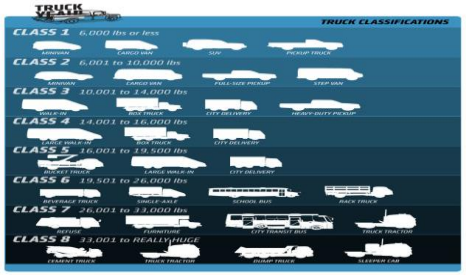
From SCAQMD study: Facility Access: includes Classes 2 and 3 (passenger cars and light trucks), and Classes 1 and 4 (motorcycles and buses) if observed
Local Goods Movement: includes Classes 5 through 7 (two-, three-, and four-axle single-unit trucks) - Local goods movement may also include Cla
Long Distance Goods Movement: includes Classes 8 through 13 (multi-unit trucks)

Vehicle Class Correspondence Table

Description	EMFAC2007 Vehicle	RIVTAM Model (axle-based)	Previous WLC EIR	CalEEMOD Assumed % of Category	Math Check	FHWA System	Fontana Truck Trip Generation Study	ITE/ SCAQMD /NAIOP Study
Bicycles								
Motorcycles	MCY	Passenger Cars	LDA	69.300%	100.000%	Class 1, Motorcycles	Passenger Vehicles	Passenger Vehicles
Passenger Cars	LDA					Class 2, Passenger Cars		
Light-Duty Trucks (GVWR <6000 lbs. and ETW <= 3750 lbs)	LDT1		LDT1	5.113%		Class 3, 4 tire single unit		
Light-Duty Trucks (GVWR <6000 lbs. and ETW 3751-5750 lbs)	LDT2		LDT2	25.588%				
School Buses	SBUS	Light Trucks	MDT	100.000%	100.000%	Class 4, Buses	Large 2-Axle trucks	2- to 4-axle Trucks
Urban Buses	UBUS							
Motor Coach	OBUS							
Other Buses								
All Other Buses								
Motor Homes	MH							
Medium-Duty Trucks (GVWR 6000-8500 lbs)	MDV					Class 5, 2-axle 6-tire single unit		
Light-Heavy-Duty Trucks (GVWR 8501-10000 lbs)	LHDT1	Medium Trucks	LHDT1	67.532%	100.000%	Class 6	3-Axle Trucks	
Light-Heavy-Duty Trucks (GVWR 10001-14000 lbs)	LHDT2		LHDT2	32.468%				
Medium-Heavy Duty Diesel Agriculture Truck	MHDT	Heavy Trucks	MHDT	37.489%	100.000%	Classes 7-13	4+ Axle Trucks	5+ Axle Trucks
Medium-Heavy Duty Diesel CA International Registration Plan Truck with GVWR>26000 lbs								
Medium-Heavy Duty Diesel CA International Registration Plan Truck with GVWR<=26000 lbs								
Medium-Heavy Duty Diesel instate construction Truck with GVWR>26000 lbs								
Medium-Heavy Duty Diesel instate construction Truck with GVWR<=26000 lbs								
Medium-Heavy Duty Diesel instate Truck with GVWR>26000 lbs								
Medium-Heavy Duty Diesel instate Truck with GVWR<=26000 lbs								
Medium-Heavy Duty Diesel Out-of-state Truck with GVWR>26000 lbs								
Medium-Heavy Duty Diesel Out-of-state Truck with GVWR<=26000 lbs								
Medium-Heavy Duty Diesel Public Fleet Truck								
Medium-Heavy Duty Diesel Utility Fleet Truck								
Medium-Heavy Duty Gasoline Truck								
Heavy-Heavy Duty Diesel Agriculture Truck	HHDT		HHDT	62.511%				
Heavy-Heavy Duty Diesel CA International Registration Plan Truck								
Heavy-Heavy Duty Diesel CA International Registration Plan Construction Truck								
Heavy-Heavy Duty Diesel Non-Neighboring Out-of-state Truck								
Heavy-Heavy Duty Diesel Neighboring Out-of-state Truck								
Heavy-Heavy Duty Diesel Drayage Truck at Other Facilities								
Heavy-Heavy Duty Diesel Drayage Truck in Bay Area								
Heavy-Heavy Duty Diesel Drayage Truck near South Coast								
Heavy-Heavy Duty Diesel Public Fleet Truck								
Heavy-Heavy Duty Diesel Single Unit Truck								
Heavy-Heavy Duty Diesel Single Unit Construction Truck								
Heavy-Heavy Duty Diesel Solid Waste Collection Truck								
Heavy-Heavy Duty Diesel Tractor Truck								
Heavy-Heavy Duty Diesel Tractor Construction Truck								
Heavy-Heavy Duty Diesel Utility Fleet Truck								
Heavy-Heavy Duty Gasoline Truck								
Power Take Off								

FHWA System





Project Category	EMFAC Category	2025	2035
Passenger Vehicles	LDA, LDT1, LDT2	11,766	20,299
Light Trucks (2axle)	MDT	875	1,532
Medium Trucks (3 axle)	LHDT1, LHDT2	1,113	1,964
Large Trucks (4+ axle)	MHDT, HHDT	3,261	5,605
		17,015	29,400

CalEEMOD Default vehicle mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.552848	0.041144	0.205921	0.110574	0.011987	0.005763	0.023182	0.038654	0.002242	0.001394	0.004854	0.00071	0.000727

EV Population Forecasts Based on EMFAC and MSS

Methodology	In January 2018, Governor Brown signed Executive Order B-48-18, setting targets of 200 hydrogen fueling stations and 250,000 electric vehicle chargers to support 1.5 million zero-emission vehicles (ZEVs) on California roads by 2025, on the path to 5 million ZEVs by 2030. EMFAC2017 bases its estimates of future ZEV populations on the strategies by which the light duty vehicle manufacturers take to comply with California's ZEV mandate and the Pavley vehicle standards. The 2017+ future projections are based upon the Mid-Range Scenario of the Advanced Clean Cars Midterm Review. For each model year, CARB calculated the fraction of the fleet that will operate similar to a pure zero emission vehicles. This fraction is called EV fraction and is equivalent to the sum of populations of Battery Electric Vehicles (BEVs), Fuel Cell Electric Vehicles (FCEVs), and the fraction of Plug-in Hybrid Electric Vehicles (PHEVs) population that operate like pure ZEVs, divided by the total population of Gasoline and electric fleet. To estimate the fraction of PHEVs that operates like pure ZEVs, EMFAC utilizes utility factors, which are defined as the fraction of VMT the PHEV obtains from the electrical grid. EMFAC 2017 anticipates future sales of EVs through the year 2025 in the PC, LDT1, LDT2, and MDV vehicle categories, and assumes EV sales as a percentage of total vehicles remains constant thereafter. The State's goal from the Mobile Source Strategy (MSS) is to achieve 4.2 million ZEVs in California by 2030, while Executive Order B-48-18 calls for 5 million ZEVs on the road by 2030. Post 2030 estimates for EVs under the MSS scenario conservatively assume that EV sales continue at the same pace after 2030.
Data Sources	EMFAC EV data source: EMFAC2017 Web Database (https://www.arb.ca.gov/emfac/2017/) - based on EMFAC2007 Categories EMFAC2017 Volume III - Technical Documentation, p. 193 - available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

Electric Vehicle Penetration - South Coast Air Basin

		EMFAC 2017 - LDA + LDT1 + LD			Governor's order & MSS		
Jurisdiction	**Year**	**Total LDA + LDT Population**	**LDA + LDT EV Population**	**% EV**	**LDA + LDT EV Population**	**% EV**	**Governor's order & MSS**
So Coast Air Basin	2020	9,125,366	103,722	1.1%	103,722	1.1%	
	2025	10,034,980	252,889	2.5%	517,550	5.2%	
	2030	10,907,401	417,413	3.8%	1,444,602	13.2%	
	2035	11,642,018	546,208	4.7%	2,447,659	21.0%	
Statewide	2020	22,409,020	262,338	1.2%	262,338	1.2%	
	2025	24,876,417	619,462	2.5%	1,282,991	5.2%	LDA portion of 1.5 million ZEVs by 2025
	2030	27,344,052	1,038,403	3.8%	3,621,512	13.2%	LDA portion of 4.2 million ZEVs by 2030
	2035	29,511,582	1,380,703	4.7%	6,204,620	21.0%	Assumes the 2025-2030 EV population increase repeats from 2030-2035

		EMFAC 2017 - MDV			Governor's order & MSS		
Jurisdiction	**Year**	**Total MDV Population**	**MDV EV Population**	**% EV**	**MDV EV Population**	**% EV**	**Governor's order & MSS**
So Coast Air Basin	2020	1,539,990	3,852	0.3%	3,852	0.3%	
	2025	1,627,185	26,375	1.6%	83,921	5.2%	
	2030	1,733,368	51,603	3.0%	229,571	13.2%	
	2035	1,849,556	72,433	3.9%	416,980	22.5%	
Statewide	2020	4,131,850	8,393	0.2%	8,393	0.2%	
	2025	4,207,663	59,187	1.4%	217,009	5.2%	MDV portion of 1.5 million ZEVs by 2025
	2030	4,367,848	119,836	2.7%	578,488	13.2%	MDV portion of 4.2 million ZEVs by 2030
	2035	4,600,339	172,291	3.7%	1,037,141	22.5%	Assumes the 2025-2030 EV population increase repeats from 2030-2035

E-6 Cumulative Calculations

1 Electricity

World Logistic Center

Cumulative Energy - Electricity

Cumulative Electrical Consumption Within MVU service Area - Summary

Project ID	Annual Construction (MWh)	Annual Operation (MWh)	Project ID	Annual Construction (MWh)	Annual Operation (MWh)
MV-001	0.86	4,293	MV-052		11,568
MV-002	0.63	3,894	MV-053		6,714
MV-003	0.73	15,041	MV-054	0.74	9,335
MV-004		12,335	MV-056	0.20	160
MV-005	0.37	1,641	MV-057	0.43	371
MV-006	0.83	4,028	MV-058		80
MV-007	0.39	311	MV-059	0.62	631
MV-008	0.68	581	MV-060	0.70	922
MV-009	0.15	110	MV-061	0.52	2,538
MV-010	0.55	471	MV-062	0.60	5,442
MV-011	0.30	241	MV-063	0.69	2,215
MV-012		914	MV-064	0.67	872
MV-013	0.21	391	MV-065	0.17	305
MV-014	0.49	1,072	MV-066	0.70	1,474
MV-015	0.62	631	MV-068	0.36	2,725
MV-016	0.37	321	MV-069		5,391
MV-017	0.67	962	MV-070	0.68	1,415
MV-018		78	MV-071	0.16	288
MV-019		883	MV-074	0.58	1,201
MV-020		1,322	MV-075	1.09	9,286
MV-021	0.24	914	MV-076	0.88	4,394
MV-022		401	MV-077	0.82	7,015
MV-023	0.77	2,449	MV-078		6,844
MV-024	0.50	1,593	MV-079	0.44	1,971
MV-025	0.62	812	MV-080	0.15	625
MV-026	0.69	1,002	MV-081		3,760
MV-027	0.18	317	MV-082		2,686
MV-028	0.27	529	MV-083		4,685
MV-029	0.61	2,756	MV-084		1,316
MV-033	0.63	541	MV-089	0.10	70
MV-034	0.61	521	MV-090	0.06	103
MV-035	0.32	251	MV-093		658
MV-036		329	MV-102	0.25	1,096
MV-037		21,270	MV-105	0.10	70
MV-038		5,712	MV-106	0.10	70
MV-039		21,058	MV-108	0.02	42
MV-040	0.14	528	MV-111	0.06	94
MV-041	0.91	7,788	MV-112	0.11	88
MV-042	0.50	2,397	MV-118	0.14	90
MV-043		7,313	MV-121	0.03	61
MV-044	0.76	5,959	MV-123	0.10	197
MV-045	0.28	1,228	MV-124	0.40	1,974

World Logistic Center

Cumulative Energy - Electricity

Cumulative Electrical Consumption Within MVU service Area - Summary

Project ID	Annual Construction (MWh)	Annual Operation (MWh)
MV-046		2,053
MV-048		19,944
MV-049		20,959
MV-050		4,670
MV-051		10,125

Project ID	Annual Construction (MWh)	Annual Operation (MWh)
MV-126	0.52	2,355
Cum Proj Total	29	296,135
Net Project	1,496	271,529
Total	1,525	567,664
MVU	352,044	352,044
%MVU	0.43%	161.25%

World Logistics Center
Cumulative Energy Electricity

3,000 gallons per acre
9727 kWh/Mgal to supply water
111 kWh/Mgal to treat water
1272 kWh/Mgal to distribute water
1911 kWh/Mgal to wastewater

Off-Road Construction Electricity from Dust Control

			Electricity from Dust Control (kWh)					
Project ID	**Acers**	**Water Use (Mgal)**	**Supply**	**Treat**	**Distribute**	**Wastewater**	**Total (kWh)**	**Annual (kWh)**
B-001	1,056	3.168	30,815	352	4,030	6,054	41,251	3,675
B-003	295	0.88512	8,610	98	1,126	1,691	11,525	1,027
B-004	74	0.2231658	2,171	25	284	426	2,906	1,025
B-006	128	0.383067083	3,726	43	487	732	4,988	1,368
B-007	129	0.38688	3,763	43	492	739	5,038	449
B-008	207	0.62208	6,051	69	791	1,189	8,100	722
B-009	1,424	4.272	41,554	474	5,434	8,164	55,626	4,956
B-010	30	0.0912	887	10	116	174	1,188	660
B-011	17	0.0496125	483	6	63	95	646	642
B-013	605	1.8144	17,649	201	2,308	3,467	23,625	2,105
B-014	224	0.672	6,537	75	855	1,284	8,750	780
C-001	15	0.0441	429	5	56	84	574	578
C-002	182	0.5468793	5,319	61	696	1,045	7,121	1,485
C-003	5	0.01603035	156	2	20	31	209	234
H-001	188	0.56448	5,491	63	718	1,079	7,350	655
H-002	141	0.4224	4,109	47	537	807	5,500	490
H-003	298	0.89376	8,694	99	1,137	1,708	11,638	1,037
H-004	100	0.300290566	2,921	33	382	574	3,910	1,072
H-005	2	0.00461039	45	1	6	9	60	153
H-006	50	0.150113754	1,460	17	191	287	1,955	1,403
H-007	77	0.229836	2,236	26	292	439	2,993	717
H-008	141	0.42168	4,102	47	536	806	5,491	489
M-001	38	0.113667109	1,106	13	145	217	1,480	1,174
M-003	89	0.26709	2,598	30	340	510	3,478	834
M-004	8	0.02401245	234	3	31	46	313	351
M-005	156	0.466709532	4,540	52	594	892	6,077	541
M-006	15	0.045339196	441	5	58	87	590	586
M-007	21	0.06221355	605	7	79	119	810	746
M-008	248	0.7434435	7,231	83	946	1,421	9,680	1,552
M-009	43	0.1296	1,261	14	165	248	1,688	624
M-010	17	0.0514839	501	6	65	98	670	625
M-011	5	0.0147735	144	2	19	28	192	230
MV-001	22	0.06714225	653	7	85	128	874	857
MV-002	100	0.301416	2,932	33	383	576	3,925	629
MV-003	74	0.222315	2,162	25	283	425	2,895	727
MV-005	9	0.02565738	250	3	33	49	334	375
MV-006	23	0.069075	672	8	88	132	899	828
MV-007	10	0.02976	289	3	38	57	388	391
MV-008	19	0.05568	542	6	71	106	725	676
MV-009	4	0.01056	103	1	13	20	138	149
MV-010	15	0.04512	439	5	57	86	588	548
MV-011	8	0.02304	224	3	29	44	300	303
MV-013	2	0.006201	60	1	8	12	81	206
MV-014	34	0.10272	999	11	131	196	1,338	495
MV-015	20	0.06048	588	7	77	116	788	617
MV-016	10	0.03072	299	3	39	59	400	373
MV-017	31	0.09216	896	10	117	176	1,200	667

World Logistics Center
Cumulative Energy Electricity

Off-Road Construction Electricity from Dust Control

			Electricity from Dust Control (kWh)					
Project ID	**Acers**	**Water Use (Mgal)**	**Supply**	**Treat**	**Distribute**	**Wastewater**	**Total (kWh)**	**Annual (kWh)**
MV-021	6	0.016536	161	2	21	32	215	242
MV-023	32	0.096327	937	11	123	184	1,254	768
MV-024	51	0.15264	1,485	17	194	292	1,988	499
MV-025	26	0.07776	756	9	99	149	1,013	620
MV-026	32	0.096	934	11	122	183	1,250	695
MV-027	4	0.012474	121	1	16	24	162	176
MV-028	7	0.02079	202	2	26	40	271	273
MV-029	88	0.264	2,568	29	336	505	3,438	612
MV-030	27	0.07968	775	9	101	152	1,038	635
MV-031	17	0.05088	495	6	65	97	663	618
MV-032	37	0.1104	1,074	12	140	211	1,438	532
MV-033	17	0.05184	504	6	66	99	675	629
MV-034	17	0.04992	486	6	63	95	650	606
MV-035	8	0.024	233	3	31	46	313	316
MV-040	3	0.00906218	88	1	12	17	118	141
MV-041	45	0.133545	1,299	15	170	255	1,739	910
MV-042	14	0.041108835	400	5	52	79	535	499
MV-044	34	0.102173714	994	11	130	195	1,330	762
MV-045	6	0.01920996	187	2	24	37	250	281
MV-047	5	0.01536	149	2	20	29	200	202
MV-054	53	0.1600698	1,557	18	204	306	2,084	735
MV-056	5	0.01536	149	2	20	29	200	202
MV-057	12	0.03552	346	4	45	68	463	431
MV-059	20	0.06048	588	7	77	116	788	617
MV-060	29	0.08832	859	10	112	169	1,150	704
MV-061	13	0.03969	386	4	50	76	517	520
MV-062	174	0.52128	5,070	58	663	996	6,788	605
MV-063	71	0.21216	2,064	24	270	405	2,763	693
MV-064	28	0.08352	812	9	106	160	1,088	666
MV-065	4	0.012012	117	1	15	23	156	170
MV-066	19	0.057981	564	6	74	111	755	704
MV-067	52	0.15456	1,503	17	197	295	2,013	505
MV-068	9	0.026651968	259	3	34	51	347	355
MV-070	19	0.055671	542	6	71	106	725	676
MV-071	4	0.011319	110	1	14	22	147	160
MV-072	2	0.005544	54	1	7	11	72	88
MV-073	7	0.022176	216	2	28	42	289	292
MV-074	40	0.121338	1,180	13	154	232	1,580	585
MV-075	313	0.937962	9,124	104	1,193	1,792	12,213	1,088
MV-076	23	0.068715077	668	8	87	131	895	877
MV-077	23	0.0685971	667	8	87	131	893	823
MV-079	11	0.0338007	329	4	43	65	440	437
MV-080	3	0.00976815	95	1	12	19	127	152
MV-085	10	0.03087	300	3	39	59	402	405
MV-087	5	0.01386	135	2	18	26	180	196
MV-088	1	0.002772	27	0	4	5	36	97
MV-089	1	0.002772	27	0	4	5	36	97
MV-090	1	0.001611855	16	0	2	3	21	56
MV-091	28	0.08352	812	9	106	160	1,088	666
MV-094	20	0.061446	598	7	78	117	800	737
MV-095	13	0.0385875	375	4	49	74	502	506
MV-096	25	0.07488	728	8	95	143	975	763
MV-097	68	0.20544	1,998	23	261	393	2,675	672
MV-098	5	0.01536	149	2	20	29	200	202
MV-099	7	0.022176	216	2	28	42	289	292
MV-100	15	0.044814	436	5	57	86	584	544
MV-101	1	0.0019845	19	0	3	4	26	69

World Logistics Center
Cumulative Energy Electricity

Off-Road Construction Electricity from Dust Control

			Electricity from Dust Control (kWh)					
Project ID	**Acers**	**Water Use (Mgal)**	**Supply**	**Treat**	**Distribute**	**Wastewater**	**Total (kWh)**	**Annual (kWh)**
MV-102	6	0.0173628	169	2	22	33	226	254
MV-103	8	0.0236808	230	3	30	45	308	316
MV-104	11	0.034356063	334	4	44	66	447	444
MV-105	1	0.002772	27	0	4	5	36	97
MV-106	1	0.002772	27	0	4	5	36	97
MV-107	3	0.00864	84	1	11	17	113	137
MV-108	0	0.000655547	6	0	1	1	9	23
MV-109	354	1.0608	10,318	118	1,349	2,027	13,813	1,231
MV-110	5	0.01386	135	2	18	26	180	196
MV-111	1	0.003696	36	0	5	7	48	59
MV-112	1	0.003465	34	0	4	7	45	115
MV-113	46	0.13824	1,345	15	176	264	1,800	666
MV-114	0	0.00125685	12	0	2	2	16	44
MV-115	0	4.7541E-06	0	0	0	0	0	0
MV-116	8	0.024	233	3	31	46	313	316
MV-117	4	0.0107484	105	1	14	21	140	168
MV-118	3	0.00864	84	1	11	17	113	137
MV-119	11	0.0336	327	4	43	64	438	408
MV-120	14	0.04178916	406	5	53	80	544	548
MV-121	0	0.000959396	9	0	1	2	12	33
MV-123	1	0.003087	30	0	4	6	40	102
MV-124	10	0.03087	300	3	39	59	402	405
MV-125	2	0.005544	54	1	7	11	72	88
MV-126	75	0.2256	2,194	25	287	431	2,938	523
MV-127	10	0.031314921	305	3	40	60	408	405
MV-129	68	0.203346	1,978	23	259	389	2,648	934
MV-130	7	0.020433214	199	2	26	39	266	269
MV-131	46	0.13815	1,344	15	176	264	1,799	666
MV-132	34	0.10131	985	11	129	194	1,319	807
P-004	7	0.0221364	215	2	28	42	288	295
P-005	14	0.042366	412	5	54	81	552	514
P-006	26	0.07722	751	9	98	148	1,005	875
P-007	51	0.153134982	1,490	17	195	293	1,994	1,062
P-008	10	0.0310167	302	3	39	59	404	401
P-009	28	0.0826254	804	9	105	158	1,076	937
P-012	19	0.058441126	568	6	74	112	761	709
P-014	37	0.11052	1,075	12	141	211	1,439	824
P-022	12	0.034998	340	4	45	67	456	453
P-023	6	0.016578	161	2	21	32	216	221
P-024	45	0.1348344	1,312	15	172	258	1,756	919
P-025	32	0.0955998	930	11	122	183	1,245	929
P-026	35	0.104455494	1,016	12	133	200	1,360	1,079
P-028	29	0.086229	839	10	110	165	1,123	978
P-030	157	0.47232	4,594	52	601	903	6,150	548
P-031	6	0.017325	169	2	22	33	226	231
P-032	47	0.1417815	1,379	16	180	271	1,846	1,464
P-033	595	1.7856	17,369	198	2,271	3,412	23,250	2,071
P-034	97	0.29166753	2,837	32	371	557	3,798	910
P-035	3	0.00924	90	1	12	18	120	144
P-036	110	0.328653401	3,197	36	418	628	4,279	686
P-039	24	0.07217877	702	8	92	138	940	866
P-040	39	0.11712	1,139	13	149	224	1,525	564
P-041	6	0.019271281	187	2	25	37	251	257
P-042	20	0.05856	570	7	74	112	763	711
P-043	18	0.05472	532	6	70	105	713	664
P-044	7	0.021714	211	2	28	41	283	286
P-045	6	0.017325	169	2	22	33	226	231

World Logistics Center
Cumulative Energy Electricity

Off-Road Construction Electricity from Dust Control

			Electricity from Dust Control (kWh)					
Project ID	**Acers**	**Water Use (Mgal)**	**Supply**	**Treat**	**Distribute**	**Wastewater**	**Total (kWh)**	**Annual (kWh)**
P-046	92	0.275418	2,679	31	350	526	3,586	639
P-047	167	0.50016	4,865	56	636	956	6,513	580
P-048	24	0.072	700	8	92	138	938	734
P-049	36	0.10944	1,065	12	139	209	1,425	527
P-050	6	0.01764	172	2	22	34	230	258
P-051	11	0.0336	327	4	43	64	438	408
P-052	26	0.07872	766	9	100	150	1,025	627
P-053	52	0.15456	1,503	17	197	295	2,013	505
P-054	76	0.22848	2,222	25	291	437	2,975	530
P-055	33	0.099225	965	11	126	190	1,292	1,125
P-056	0	0.00126821	12	0	2	2	17	44
P-057	1	0.003835965	37	0	5	7	50	127
P-058	16	0.0486486	473	5	62	93	633	629
P-059	78	0.23328	2,269	26	297	446	3,038	541
P-060	0	0.00099225	10	0	1	2	13	35
R-004	17	0.049896	485	6	63	95	650	606
R-005	34	0.10335	1,005	11	131	198	1,346	1,067
R-006	6	0.017787	173	2	23	34	232	237
R-007	4	0.012370271	120	1	16	24	161	193
R-008	8	0.023754	231	3	30	45	309	312
R-009	645	1.935464942	18,826	215	2,462	3,699	25,202	2,245
R-010	2	0.005196083	51	1	7	10	68	172
R-011	23	0.070413724	685	8	90	135	917	899
R-012	5	0.013533801	132	2	17	26	176	211
R-013	1	0.00288	28	0	4	6	38	101
R-014	0	0.000850689	8	0	1	2	11	30
R-015	55	0.16482816	1,603	18	210	315	2,146	539
R-016	0	0.001464672	14	0	2	3	19	51
R-017	21	0.063525	618	7	81	121	827	762
R-018	388	1.163168567	11,314	129	1,480	2,223	15,146	1,349
R-019	4	0.012705	124	1	16	24	165	180
R-020	45	0.134599453	1,309	15	171	257	1,753	917
R-021	5	0.0144	140	2	18	28	188	204
R-022	3	0.00864	84	1	11	17	113	137
R-023	1	0.0017726	17	0	2	3	23	62
R-024	1,600	4.8	46,690	533	6,106	9,173	62,501	5,568
R-025	16	0.048048	467	5	61	92	626	583
R-026	86	0.258978488	2,519	29	329	495	3,372	1,115
R-027	0	0.000797769	8	0	1	2	10	28
R-028	29	0.086028	837	10	109	164	1,120	686
R-029	0	0.000836798	8	0	1	2	11	29
R-030	15	0.045988644	447	5	58	88	599	603
R-031	3	0.008316	81	1	11	16	108	132
R-032	2	0.004910976	48	1	6	9	64	163
R-033	2	0.00693	67	1	9	13	90	110
R-034	1	0.002514712	24	0	3	5	33	88
R-035	8	0.023562	229	3	30	45	307	310
R-036	5	0.014322	139	2	18	27	186	203
R-037	0	0.001323	13	0	2	3	17	46
R-038	0	0.00077175	8	0	1	1	10	27
R-039	129	0.38592	3,754	43	491	737	5,025	448
R-040	0	0.0005292	5	0	1	1	7	18
R-041	2	0.004779731	46	1	6	9	62	158
R-042	191	0.57408	5,584	64	730	1,097	7,475	666
R-043	16	0.048	467	5	61	92	625	583
R-044	0	0.000882	9	0	1	2	11	31
R-045	3	0.007841991	76	1	10	15	102	260

World Logistics Center
Cumulative Energy Electricity

Off-Road Construction Electricity from Dust Control

			Electricity from Dust Control (kWh)					
Project ID	**Acers**	**Water Use (Mgal)**	**Supply**	**Treat**	**Distribute**	**Wastewater**	**Total (kWh)**	**Annual (kWh)**
R-046	11	0.03440928	335	4	44	66	448	418
R-047	3	0.009922117	97	1	13	19	129	155
R-048	6	0.01660365	162	2	21	32	216	243
R-049	66	0.19902	1,936	22	253	380	2,591	651
R-050	1	0.0036792	36	0	5	7	48	58
R-051	0	0.000520601	5	0	1	1	7	18
R-052	10	0.03072	299	3	39	59	400	373
R-053	9	0.02784	271	3	35	53	363	366
R-054	8	0.024	233	3	31	46	313	316
R-055	6	0.0192	187	2	24	37	250	253
R-056	9	0.0270777	263	3	34	52	353	361
R-057	7	0.022086979	215	2	28	42	288	294
R-058	0	0.000605493	6	0	1	1	8	21
R-059	0	0.000893025	9	0	1	2	12	31
R-060	7	0.020996586	204	2	27	40	273	307
R-061	31	0.093811064	913	10	119	179	1,222	1,128
R-062	0	0.000403736	4	0	1	1	5	14
R-063	2	0.004851	47	1	6	9	63	77
R-064	2	0.0048	47	1	6	9	63	76
R-065	20	0.05952	579	7	76	114	775	723
R-066	0	0.001356075	13	0	2	3	18	47
RC-001	400	1.20096	11,682	133	1,528	2,295	15,638	1,393
RC-002	640	1.92	18,676	213	2,442	3,669	25,000	2,227
RC-003	1,092	3.27552	31,861	364	4,166	6,260	42,651	3,800
RC-005	240	0.72	7,003	80	916	1,376	9,375	835
RC-006	41	0.12402	1,206	14	158	237	1,615	1,281
RC-007	49	0.146130005	1,421	16	186	279	1,903	704
RC-009	53	0.157955577	1,536	18	201	302	2,057	1,095
RC-010	266	0.79794	7,762	89	1,015	1,525	10,390	926
RC-011	25	0.0749694	729	8	95	143	976	899
RC-012	18	0.054525686	530	6	69	104	710	705
RC-013	159	0.47712	4,641	53	607	912	6,213	553
RC-014	25	0.07392	719	8	94	141	963	754
RC-015	45	0.13632	1,326	15	173	261	1,775	657
RC-017	1	0.00204624	20	0	3	4	27	71
RC-018	5	0.0144	140	2	18	28	188	204
RC-019	4	0.011641959	113	1	15	22	152	182
RC-020	0	0.0006174	6	0	1	1	8	22
RC-021	0	0.0007368	7	0	1	1	10	26
RC-022	42	0.12576	1,223	14	160	240	1,638	606
RC-023	2	0.006750315	66	1	9	13	88	107
RC-024	8	0.024556217	239	3	31	47	320	327
RC-025	4	0.0109395	106	1	14	21	142	171
RC-026	1	0.00192	19	0	2	4	25	67
RC-027	8	0.024285937	236	3	31	46	316	324
RC-028	0	0.0012348	12	0	2	2	16	43
RC-029	1	0.001795311	17	0	2	3	23	63
RC-030	39	0.115958505	1,128	13	147	222	1,510	865
RC-031	8	0.02324322	226	3	30	44	303	310
RC-032	232	0.69696	6,779	77	887	1,332	9,075	809
RC-033	123	0.36864	3,586	41	469	704	4,800	428
RC-034	138	0.41472	4,034	46	528	793	5,400	481
RC-035	901	2.704098	26,303	300	3,440	5,168	35,210	3,137
RC-036	150	0.44928	4,370	50	571	859	5,850	521
RC-037	180	0.53952	5,248	60	686	1,031	7,025	626
RC-038	56	0.167968296	1,634	19	214	321	2,187	771
RC-039	12	0.03744	364	4	48	72	488	455

World Logistics Center
Cumulative Energy Electricity

Off-Road Construction Electricity from Dust Control

			Electricity from Dust Control (kWh)					
Project ID	**Acers**	**Water Use (Mgal)**	**Supply**	**Treat**	**Distribute**	**Wastewater**	**Total (kWh)**	**Annual (kWh)**
RD-003	33	0.09888	962	11	126	189	1,288	716
RD-004	21	0.06432	626	7	82	123	838	656
RD-006	4	0.010633392	103	1	14	20	138	166
RD-007	9	0.028167993	274	3	36	54	367	412
RD-008	6	0.01848	180	2	24	35	241	243
RD-009	3	0.009658341	94	1	12	18	126	151
RD-010	6	0.018694319	182	2	24	36	243	249
RD-011	4	0.012230033	119	1	16	23	159	191
SB-007	11	0.03264	317	4	42	62	425	396
SB-008	13	0.0384	374	4	49	73	500	466
SJ-001	123	0.370052987	3,600	41	471	707	4,818	1,321
SJ-002	103	0.30816	2,997	34	392	589	4,013	357
SJ-003	186	0.5568	5,416	62	708	1,064	7,250	646
SJ-004	196	0.58848	5,724	65	749	1,125	7,663	683
WLC-001	19	0.0576	560	6	73	110	750	699

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Climate Zone 10

		Electricity (kWhr/unit)			Natural Gas (kBtU/unit)	
		T24	NT24	Light	T24	NT24
BP	Office Park	3.07	2.60	4.24	2.92	0.000
HI	Heavy Industrial	2.20	5.02	2.93	15.36	17.130
LI	Light Industrial	2.20	5.02	2.93	15.36	17.130
MF	Multi-Family - Mid Rise Apartment	772.17	3054.10	741.44	8764.08	6030.000
MO	Medical Office	3.07	2.79	3.66	3.47	0.000
OG	General Office	3.07	2.79	3.66	3.47	0.000
RC	Retail Commercial	4.58	2.44	5.61	1.92	0.300
SF	Single Family Residential	951.67	6155.97	1608.84	24556.15	6030.000
SR	Senior Residential	877.14	3172.76	1001.10	9544.50	6030.000
WH	Warehouse - Unrefrigerated No Rail	0.37	0.82	1.17	2.00	0.030

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	anduse_Cod	Landuse_qty	kWh	kWh	kWh	kBTU	kBTU	Electricity (kWh)	NG (MMBtu)
B-001	SF	3,300.00	3,140,511	20,314,701	5,309,172	81,035,295	19,899,000	28,764,384	100,934
B-002	MF	571.00	440,909	1,743,891	423,362	5,004,290	3,443,130	2,608,162	8,447
B-003	SF	922.00	877,440	5,675,804	1,483,350	22,640,770	5,559,660	8,036,595	28,200
B-004	LI	1,734.00	3,814,800	8,704,680	5,080,620	26,634,240	29,703,420	17,600,100	56,338
B-005	HI	2,565.68	5,644,505	12,879,734	7,517,454	39,408,906	43,950,167	26,041,693	83,359
B-006	BP	1,853.25	5,689,482	4,818,454	7,857,786	5,411,494	0	18,365,722	5,411
B-007	SF	403.00	383,523	2,480,856	648,363	9,896,128	2,430,090	3,512,741	12,326
B-008	SF	648.00	616,682	3,989,069	1,042,528	15,912,385	3,907,440	5,648,279	19,820
B-009	SF	4,450.00	4,234,932	27,394,067	7,159,338	109,274,868	26,833,500	38,788,336	136,108
B-010	SF	95.00	90,409	584,817	152,840	2,332,834	572,850	828,066	2,906
B-011	RC	225.00	1,030,500	549,000	1,262,250	432,000	67,500	2,841,750	500
B-012	MF	279.00	215,435	852,094	206,862	2,445,178	1,682,370	1,274,391	4,128
B-013	SF	1,890.00	1,798,656	11,634,783	3,040,708	46,411,124	11,396,700	16,474,147	57,808
B-014	SF	700.00	666,169	4,309,179	1,126,188	17,189,305	4,221,000	6,101,536	21,410
C-001	RC	200.00	916,000	488,000	1,122,000	384,000	60,000	2,526,000	444
C-002	RC	1,000.00	4,580,000	2,440,000	5,610,000	1,920,000	300,000	12,630,000	2,220
C-002	BP	1,579.00	4,847,530	4,105,400	6,694,960	4,610,680	0	15,647,890	4,611
C-003	RC	72.70	332,966	177,388	407,847	139,584	21,810	918,201	161
H-001	SF	588.00	559,582	3,619,710	945,998	14,439,016	3,545,640	5,125,290	17,985
H-002	SF	440.00	418,735	2,708,627	707,890	10,804,706	2,653,200	3,835,251	13,458
H-003	SF	931.00	886,005	5,731,208	1,497,830	22,861,776	5,613,930	8,115,043	28,476
H-004	LI	734.98	1,616,965	3,689,620	2,153,503	11,289,354	12,590,276	7,460,088	23,880
H-004	BP	995.15	3,055,120	2,587,398	4,219,449	2,905,847	0	9,861,966	2,906

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
H-005	RC	20.91	95,762	51,017	117,298	40,145	6,273	264,078	46
H-006	RC	680.79	3,118,009	1,661,123	3,819,221	1,307,113	204,236	8,598,352	1,511
H-007	SR	358.00	314,016	1,135,848	358,394	3,416,931	2,158,740	1,808,258	5,576
H-008	SR	440.00	385,942	1,396,014	440,484	4,199,580	2,653,200	2,222,440	6,853
H-008	SF	145.00	137,992	892,616	233,282	3,560,642	874,350	1,263,890	4,435
H-009	SR	599.00	525,407	1,900,483	599,659	5,717,156	3,611,970	3,025,549	9,329
M-001	RC	10.00	45,800	24,400	56,100	19,200	3,000	126,300	22
M-001	OG	258.10	792,373	720,105	944,653	895,614	0	2,457,131	896
M-001	LI	42.22	92,888	211,954	123,710	648,530	723,263	428,553	1,372
M-001	HI	409.31	900,486	2,054,746	1,199,284	6,287,032	7,011,515	4,154,517	13,299
M-002	WH	4,525.00	1,674,250	3,710,500	5,294,250	9,050,000	135,750	10,679,000	9,186
M-002	OG	469.00	1,439,830	1,308,510	1,716,540	1,627,430	0	4,464,880	1,627
M-002	LI	487.80	1,073,160	2,448,756	1,429,254	7,492,608	8,356,014	4,951,170	15,849
M-003	WH	2,900.00	1,073,000	2,378,000	3,393,000	5,800,000	87,000	6,844,000	5,887
M-004	RC	108.90	498,762	265,716	610,929	209,088	32,670	1,375,407	242
M-005	WH	3,061.82	1,132,872	2,510,688	3,582,324	6,123,630	91,854	7,225,883	6,215
M-005	OG	232.76	714,558	649,386	851,883	807,660	0	2,215,828	808
M-005	LI	1,061.43	2,335,144	5,328,374	3,109,987	16,303,549	18,182,279	10,773,504	34,486
M-006	BP	219.35	673,398	570,304	930,035	640,496	0	2,173,737	640
M-007	WH	675.50	249,935	553,910	790,335	1,351,000	20,265	1,594,180	1,371
M-008	RC	625.00	2,862,500	1,525,000	3,506,250	1,200,000	187,500	7,893,750	1,388
M-008	MO	2,930.00	8,995,100	8,174,700	10,723,800	10,167,100	0	27,893,600	10,167
M-009	SF	135.00	128,475	831,056	217,193	3,315,080	814,050	1,176,725	4,129
M-010	WH	559.00	206,830	458,380	654,030	1,118,000	16,770	1,319,240	1,135
M-011	RC	67.00	306,860	163,480	375,870	128,640	20,100	846,210	149
MV-001	RC	304.50	1,394,610	742,980	1,708,245	584,640	91,350	3,845,835	676
MV-002	SF	262.00	249,338	1,612,864	421,516	6,433,711	1,579,860	2,283,718	8,014
MV-002	MF	216.00	166,789	659,686	160,151	1,893,041	1,302,480	986,625	3,196
MV-003	WH	1,901.00	703,370	1,558,820	2,224,170	3,802,000	57,030	4,486,360	3,859
MV-003	LI	367.00	807,400	1,842,340	1,075,310	5,637,120	6,286,710	3,725,050	11,924
MV-004	LI	937.26	2,061,972	4,705,045	2,746,172	14,396,314	16,055,264	9,513,189	30,452
MV-005	RC	116.36	532,929	283,918	652,780	223,411	34,908	1,469,627	258
MV-006	WH	750.00	277,500	615,000	877,500	1,500,000	22,500	1,770,000	1,523
MV-007	SF	31.00	29,502	190,835	49,874	761,241	186,930	270,211	948
MV-008	SF	58.00	55,197	357,046	93,313	1,424,257	349,740	505,556	1,774
MV-009	SF	11.00	10,468	67,716	17,697	270,118	66,330	95,881	336
MV-010	SF	47.00	44,728	289,331	75,615	1,154,139	283,410	409,675	1,438
MV-011	SF	24.00	22,840	147,743	38,612	589,348	144,720	209,196	734
MV-012	MO	80.00	245,600	223,200	292,800	277,600	0	761,600	278
MV-013	OG	30.00	92,100	83,700	109,800	104,100	0	285,600	104
MV-014	SF	107.00	101,829	658,689	172,146	2,627,508	645,210	932,663	3,273

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
MV-015	SF	63.00	59,955	387,826	101,357	1,547,037	379,890	549,138	1,927
MV-016	SF	32.00	30,453	196,991	51,483	785,797	192,960	278,927	979
MV-017	SF	96.00	91,360	590,973	154,449	2,357,390	578,880	836,782	2,936
MV-018	RC	5.50	25,190	13,420	30,855	10,560	1,650	69,465	12
MV-019	SR	139.00	121,922	441,014	139,153	1,326,686	838,170	702,089	2,165
MV-020	RC	93.79	429,549	228,843	526,151	180,073	28,136	1,184,542	208
MV-021	MO	80.00	245,600	223,200	292,800	277,600	0	761,600	278
MV-022	SF	40.00	38,067	246,239	64,354	982,246	241,200	348,659	1,223
MV-023	MF	417.00	321,995	1,273,560	309,180	3,654,621	2,514,510	1,904,735	6,169
MV-024	SF	159.00	151,316	978,799	255,806	3,904,428	958,770	1,385,920	4,863
MV-025	SF	81.00	77,085	498,634	130,316	1,989,048	488,430	706,035	2,477
MV-026	SF	100.00	95,167	615,597	160,884	2,455,615	603,000	871,648	3,059
MV-027	MF	54.00	41,697	164,921	40,038	473,260	325,620	246,656	799
MV-028	MF	90.00	69,495	274,869	66,730	788,767	542,700	411,094	1,331
MV-029	SF	275.00	261,709	1,692,892	442,431	6,752,941	1,658,250	2,397,032	8,411
MV-030	SF	83.00	78,989	510,946	133,534	2,038,160	500,490	723,468	2,539
MV-031	SF	53.00	50,439	326,266	85,269	1,301,476	319,590	461,973	1,621
MV-032	SF	115.00	109,442	707,937	185,017	2,823,957	693,450	1,002,395	3,517
MV-033	SF	54.00	51,390	332,422	86,877	1,326,032	325,620	470,690	1,652
MV-034	SF	52.00	49,487	320,110	83,660	1,276,920	313,560	453,257	1,590
MV-035	SF	25.00	23,792	153,899	40,221	613,904	150,750	217,912	765
MV-036	MF	56.00	43,242	171,030	41,521	490,788	337,680	255,792	828
MV-037	HI	1,616.13	3,555,493	8,112,988	4,735,270	24,823,803	27,684,358	16,403,750	52,508
MV-038	LI	434.00	954,800	2,178,680	1,271,620	6,666,240	7,434,420	4,405,100	14,101
MV-039	LI	1,600.00	3,520,000	8,032,000	4,688,000	24,576,000	27,408,000	16,240,000	51,984
MV-040	WH	98.40	36,406	80,684	115,122	196,790	2,952	232,212	200
MV-041	WH	1,450.00	536,500	1,189,000	1,696,500	2,900,000	43,500	3,422,000	2,944
MV-042	WH	446.35	165,150	366,007	522,230	892,700	13,391	1,053,386	906
MV-043	HI	555.67	1,222,474	2,789,463	1,628,113	8,535,091	9,518,627	5,640,051	18,054
MV-044	WH	1,109.38	410,470	909,690	1,297,972	2,218,756	33,281	2,618,132	2,252
MV-045	RC	87.12	399,010	212,573	488,743	167,270	26,136	1,100,326	193
MV-046	WH	382.28	141,444	313,470	447,268	764,560	11,468	902,181	776
MV-047	SF	16.00	15,227	98,496	25,741	392,898	96,480	139,464	489
MV-048	BP	1,484.50	4,557,406	3,859,692	6,294,267	4,334,731	0	14,711,365	4,335
MV-049	BP	1,560.05	4,789,341	4,056,120	6,614,595	4,555,334	0	15,460,056	4,555
MV-050	LI	354.81	780,582	1,781,146	1,039,593	5,449,882	6,077,895	3,601,322	11,528
MV-051	LI	769.32	1,692,504	3,861,986	2,254,108	11,816,755	13,178,452	7,808,598	24,995
MV-052	LI	878.96	1,933,712	4,412,379	2,575,353	13,500,826	15,056,585	8,921,444	28,557
MV-053	WH	1,250.00	462,500	1,025,000	1,462,500	2,500,000	37,500	2,950,000	2,538
MV-054	WH	1,738.00	643,060	1,425,160	2,033,460	3,476,000	52,140	4,101,680	3,528
MV-056	SF	16.00	15,227	98,496	25,741	392,898	96,480	139,464	489

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
MV-057	SF	37.00	35,212	227,771	59,527	908,578	223,110	322,510	1,132
MV-058	SF	8.00	7,613	49,248	12,871	196,449	48,240	69,732	245
MV-059	SF	63.00	59,955	387,826	101,357	1,547,037	379,890	549,138	1,927
MV-060	SF	92.00	87,554	566,349	148,013	2,259,166	554,760	801,916	2,814
MV-061	RC	180.00	824,400	439,200	1,009,800	345,600	54,000	2,273,400	400
MV-062	SF	543.00	516,757	3,342,692	873,600	13,333,989	3,274,290	4,733,049	16,608
MV-063	SF	221.00	210,319	1,360,469	355,554	5,426,909	1,332,630	1,926,342	6,760
MV-064	SF	87.00	82,795	535,569	139,969	2,136,385	524,610	758,334	2,661
MV-065	MF	52.00	40,153	158,813	38,555	455,732	313,560	237,521	769
MV-066	MF	251.00	193,815	766,579	186,101	2,199,784	1,513,530	1,146,495	3,713
MV-067	SF	161.00	153,219	991,111	259,023	3,953,540	970,830	1,403,353	4,924
MV-068	HI	207.09	455,589	1,039,572	606,762	3,180,841	3,547,383	2,101,923	6,728
MV-069	HI	409.60	901,116	2,056,182	1,200,122	6,291,425	7,016,414	4,157,420	13,308
MV-070	MF	241.00	186,093	736,038	178,687	2,112,143	1,453,230	1,100,818	3,565
MV-071	MF	49.00	37,836	149,651	36,331	429,440	295,470	223,818	725
MV-072	MF	24.00	18,532	73,298	17,795	210,338	144,720	109,625	355
MV-073	MF	96.00	74,128	293,194	71,178	841,352	578,880	438,500	1,420
MV-074	SR	189.00	165,779	599,652	189,208	1,803,911	1,139,670	954,639	2,944
MV-075	SR	1,461.00	1,281,502	4,635,402	1,462,607	13,944,515	8,809,830	7,379,511	22,754
MV-076	RC	311.63	1,427,279	760,385	1,748,261	598,335	93,490	3,935,925	692
MV-077	LI	533.00	1,172,600	2,675,660	1,561,690	8,186,880	9,130,290	5,409,950	17,317
MV-078	LI	520.00	1,144,000	2,610,400	1,523,600	7,987,200	8,907,600	5,278,000	16,895
MV-079	WH	367.00	135,790	300,940	429,390	734,000	11,010	866,120	745
MV-080	RC	44.30	202,894	108,092	248,523	85,056	13,290	559,509	98
MV-081	WH	700.00	259,000	574,000	819,000	1,400,000	21,000	1,652,000	1,421
MV-082	WH	500.00	185,000	410,000	585,000	1,000,000	15,000	1,180,000	1,015
MV-083	LI	356.00	783,200	1,787,120	1,043,080	5,468,160	6,098,280	3,613,400	11,566
MV-084	LI	99.98	219,952	501,890	292,936	1,535,662	1,712,623	1,014,777	3,248
MV-085	RC	140.00	641,200	341,600	785,400	268,800	42,000	1,768,200	311
MV-086	SF	71.00	67,569	437,074	114,228	1,743,487	428,130	618,870	2,172
MV-087	MF	60.00	46,330	183,246	44,486	525,845	361,800	274,063	888
MV-088	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-089	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-090	RC	7.31	33,480	17,836	41,009	14,035	2,193	92,325	16
MV-091	SF	87.00	82,795	535,569	139,969	2,136,385	524,610	758,334	2,661
MV-093	MF	112.00	86,483	342,059	83,041	981,577	675,360	511,584	1,657
MV-094	MF	266.00	205,397	812,391	197,223	2,331,245	1,603,980	1,215,011	3,935
MV-095	RC	175.00	801,500	427,000	981,750	336,000	52,500	2,210,250	389
MV-096	SF	78.00	74,230	480,166	125,490	1,915,380	470,340	679,885	2,386
MV-097	SF	214.00	203,657	1,317,378	344,292	5,255,016	1,290,420	1,865,327	6,545
MV-098	SF	16.00	15,227	98,496	25,741	392,898	96,480	139,464	489

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
MV-099	MF	96.00	74,128	293,194	71,178	841,352	578,880	438,500	1,420
MV-100	MF	194.00	149,801	592,495	143,839	1,700,232	1,169,820	886,136	2,870
MV-101	RC	9.00	41,220	21,960	50,490	17,280	2,700	113,670	20
MV-102	OG	84.00	257,880	234,360	307,440	291,480	0	799,680	291
MV-103	LI	184.00	404,800	923,680	539,120	2,826,240	3,151,920	1,867,600	5,978
MV-104	WH	373.03	138,021	305,885	436,445	746,060	11,191	880,351	757
MV-105	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-106	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-107	SF	9.00	8,565	55,404	14,480	221,005	54,270	78,448	275
MV-108	RC	2.97	13,616	7,254	16,679	5,708	892	37,549	7
MV-109	SF	1,105.00	1,051,595	6,802,347	1,777,768	27,134,546	6,663,150	9,631,710	33,798
MV-110	MF	60.00	46,330	183,246	44,486	525,845	361,800	274,063	888
MV-111	MF	16.00	12,355	48,866	11,863	140,225	96,480	73,083	237
MV-112	MF	15.00	11,583	45,812	11,122	131,461	90,450	68,516	222
MV-113	SF	144.00	137,040	886,460	231,673	3,536,086	868,320	1,255,173	4,404
MV-114	RC	5.70	26,106	13,908	31,977	10,944	1,710	71,991	13
MV-115	OG	0.02	71	64	84	80	0	219	0
MV-116	SF	25.00	23,792	153,899	40,221	613,904	150,750	217,912	765
MV-117	OG	52.00	159,640	145,080	190,320	180,440	0	495,040	180
MV-118	SF	9.00	8,565	55,404	14,480	221,005	54,270	78,448	275
MV-119	SF	35.00	33,308	215,459	56,309	859,465	211,050	305,077	1,071
MV-120	RC	189.52	868,002	462,429	1,063,207	363,878	56,856	2,393,638	421
MV-121	RC	4.35	19,928	10,616	24,409	8,354	1,305	54,953	10
MV-123	RC	14.00	64,120	34,160	78,540	26,880	4,200	176,820	31
MV-124	RC	140.00	641,200	341,600	785,400	268,800	42,000	1,768,200	311
MV-125	MF	24.00	18,532	73,298	17,795	210,338	144,720	109,625	355
MV-126	SF	235.00	223,642	1,446,653	378,077	5,770,695	1,417,050	2,048,373	7,188
MV-127	WH	340.01	125,804	278,808	397,812	680,020	10,200	802,424	690
MV-129	LI	1,580.00	3,476,000	7,931,600	4,629,400	24,268,800	27,065,400	16,037,000	51,334
MV-130	WH	221.86	82,088	181,924	259,575	443,718	6,656	523,587	450
MV-131	WH	1,500.00	555,000	1,230,000	1,755,000	3,000,000	45,000	3,540,000	3,045
MV-132	WH	1,100.00	407,000	902,000	1,287,000	2,200,000	33,000	2,596,000	2,233
P-001	SF	137.00	130,379	843,368	220,411	3,364,193	826,110	1,194,158	4,190
P-002	WH	600.00	222,000	492,000	702,000	1,200,000	18,000	1,416,000	1,218
P-003	WH	462.30	171,051	379,086	540,891	924,600	13,869	1,091,028	938
P-004	LI	172.00	378,400	863,440	503,960	2,641,920	2,946,360	1,745,800	5,588
P-005	WH	460.00	170,200	377,200	538,200	920,000	13,800	1,085,600	934
P-006	LI	600.00	1,320,000	3,012,000	1,758,000	9,216,000	10,278,000	6,090,000	19,494
P-007	LI	1,189.86	2,617,692	5,973,097	3,486,290	18,276,250	20,382,302	12,077,079	38,659
P-008	LI	241.00	530,200	1,209,820	706,130	3,701,760	4,128,330	2,446,150	7,830
P-009	HI	642.00	1,412,400	3,222,840	1,881,060	9,861,120	10,997,460	6,516,300	20,859

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
P-010	WH	1,700.00	629,000	1,394,000	1,989,000	3,400,000	51,000	4,012,000	3,451
P-011	HI	1,224.99	2,694,985	6,149,465	3,589,229	18,815,892	20,984,130	12,433,679	39,800
P-012	LI	454.09	998,994	2,279,522	1,330,478	6,974,792	7,778,527	4,608,993	14,753
P-014	WH	1,200.00	444,000	984,000	1,404,000	2,400,000	36,000	2,832,000	2,436
P-015	WH	780.82	288,902	640,268	913,554	1,561,630	23,424	1,842,723	1,585
P-016	WH	1,310.00	484,700	1,074,200	1,532,700	2,620,000	39,300	3,091,600	2,659
P-017	WH	580.00	214,600	475,600	678,600	1,160,000	17,400	1,368,800	1,177
P-018	WH	1,547.00	572,390	1,268,540	1,809,990	3,094,000	46,410	3,650,920	3,140
P-019	WH	697.60	258,112	572,032	816,192	1,395,200	20,928	1,646,336	1,416
P-020	WH	871.50	322,455	714,630	1,019,655	1,743,000	26,145	2,056,740	1,769
P-021	WH	170.00	62,900	139,400	198,900	340,000	5,100	401,200	345
P-022	WH	380.00	140,600	311,600	444,600	760,000	11,400	896,800	771
P-023	WH	180.00	66,600	147,600	210,600	360,000	5,400	424,800	365
P-024	WH	1,464.00	541,680	1,200,480	1,712,880	2,928,000	43,920	3,455,040	2,972
P-025	WH	1,038.00	384,060	851,160	1,214,460	2,076,000	31,140	2,449,680	2,107
P-026	LI	811.62	1,785,564	4,074,332	2,378,047	12,466,483	13,903,051	8,237,943	26,370
P-027	WH	864.00	319,680	708,480	1,010,880	1,728,000	25,920	2,039,040	1,754
P-028	LI	670.00	1,474,000	3,363,400	1,963,100	10,291,200	11,477,100	6,800,500	21,768
P-030	SF	492.00	468,222	3,028,737	791,549	12,081,626	2,966,760	4,288,508	15,048
P-031	MF	75.00	57,913	229,058	55,608	657,306	452,250	342,578	1,110
P-032	RC	643.00	2,944,940	1,568,920	3,607,230	1,234,560	192,900	8,121,090	1,427
P-033	SF	1,860.00	1,770,106	11,450,104	2,992,442	45,674,439	11,215,800	16,212,653	56,890
P-034	WH	3,166.86	1,171,737	2,596,823	3,705,223	6,333,714	95,006	7,473,783	6,429
P-035	MF	40.00	30,887	122,164	29,658	350,563	241,200	182,708	592
P-036	WH	3,448.73	1,276,032	2,827,962	4,035,019	6,897,468	103,462	8,139,012	7,001
P-036	RC	50.00	229,000	122,000	280,500	96,000	15,000	631,500	111
P-037	SF	183.00	174,156	1,126,543	294,418	4,493,775	1,103,490	1,595,116	5,597
P-038	SF	223.00	212,222	1,372,781	358,771	5,476,021	1,344,690	1,943,775	6,821
P-039	WH	783.70	289,969	642,634	916,929	1,567,400	23,511	1,849,532	1,591
P-040	SF	122.00	116,104	751,028	196,278	2,995,850	735,660	1,063,411	3,732
P-041	LI	149.74	329,424	751,685	438,732	2,299,976	2,565,012	1,519,841	4,865
P-042	SF	61.00	58,052	375,514	98,139	1,497,925	367,830	531,705	1,866
P-043	SF	57.00	54,245	350,890	91,704	1,399,701	343,710	496,839	1,743
P-044	MF	94.00	72,584	287,085	69,695	823,824	566,820	429,365	1,391
P-045	MF	75.00	57,913	229,058	55,608	657,306	452,250	342,578	1,110
P-046	SR	429.00	376,293	1,361,114	429,472	4,094,591	2,586,870	2,166,879	6,681
P-047	SF	521.00	495,820	3,207,260	838,206	12,793,754	3,141,630	4,541,286	15,935
P-048	SF	75.00	71,375	461,698	120,663	1,841,711	452,250	653,736	2,294
P-049	SF	114.00	108,490	701,781	183,408	2,799,401	687,420	993,679	3,487
P-050	RC	80.00	366,400	195,200	448,800	153,600	24,000	1,010,400	178
P-051	SF	35.00	33,308	215,459	56,309	859,465	211,050	305,077	1,071

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
P-052	SF	82.00	78,037	504,790	131,925	2,013,604	494,460	714,751	2,508
P-053	SF	161.00	153,219	991,111	259,023	3,953,540	970,830	1,403,353	4,924
P-054	SF	238.00	226,497	1,465,121	382,904	5,844,364	1,435,140	2,074,522	7,280
P-055	RC	450.00	2,061,000	1,098,000	2,524,500	864,000	135,000	5,683,500	999
P-056	LI	9.85	21,679	49,467	28,872	151,357	168,799	100,018	320
P-057	WH	41.65	15,411	34,153	48,731	83,300	1,250	98,294	85
P-058	HI	378.00	831,600	1,897,560	1,107,540	5,806,080	6,475,140	3,836,700	12,281
P-059	SF	243.00	231,256	1,495,901	390,948	5,967,144	1,465,290	2,118,105	7,432
P-060	RC	4.50	20,610	10,980	25,245	8,640	1,350	56,835	10
P-061	WH	350.00	129,500	287,000	409,500	700,000	10,500	826,000	711
R-001	BP	1,375.17	4,221,769	3,575,439	5,830,717	4,015,493	0	13,627,925	4,015
R-002	WH	582.77	215,626	477,873	681,843	1,165,544	17,483	1,375,342	1,183
R-003	LI	652.02	1,434,440	3,273,130	1,910,413	10,014,996	11,169,068	6,617,983	21,184
R-004	MF	216.00	166,789	659,686	160,151	1,893,041	1,302,480	986,625	3,196
R-005	MO	500.00	1,535,000	1,395,000	1,830,000	1,735,000	0	4,760,000	1,735
R-006	MF	77.00	59,457	235,166	57,091	674,834	464,310	351,714	1,139
R-007	RC	56.10	256,943	136,886	314,727	107,714	16,830	708,556	125
R-008	SR	37.00	32,454	117,392	37,041	353,147	223,110	186,887	576
R-009	RC	8,777.62	40,201,494	21,417,390	49,242,441	16,853,028	2,633,286	110,861,325	19,486
R-010	RC	23.57	107,928	57,499	132,200	45,245	7,070	297,626	52
R-011	BP	340.66	1,045,816	885,707	1,444,384	994,717	0	3,375,907	995
R-012	RC	61.38	281,110	149,762	344,329	117,845	18,413	775,201	136
R-013	SF	3.00	2,855	18,468	4,827	73,668	18,090	26,149	92
R-014	RC	3.86	17,670	9,414	21,643	7,407	1,157	48,727	9
R-015	SF	171.70	163,398	1,056,955	276,231	4,216,193	1,035,327	1,496,585	5,252
R-016	SF	1.53	1,452	9,392	2,455	37,465	9,200	13,299	47
R-017	MF	275.00	212,347	839,878	203,896	2,410,122	1,658,250	1,256,120	4,068
R-018	LI	9,037.83	19,883,223	45,369,901	26,480,838	138,821,050	154,818,007	91,733,962	293,639
R-019	MF	55.00	42,469	167,976	40,779	482,024	331,650	251,224	814
R-020	WH	1,461.45	540,736	1,198,388	1,709,895	2,922,898	43,843	3,449,020	2,967
R-021	SF	15.00	14,275	92,340	24,133	368,342	90,450	130,747	459
R-022	SF	9.00	8,565	55,404	14,480	221,005	54,270	78,448	275
R-023	RC	8.04	36,819	19,615	45,099	15,435	2,412	101,533	18
R-024	SF	5,000.00	4,758,350	30,779,850	8,044,200	122,780,750	30,150,000	43,582,400	152,931
R-025	MF	208.00	160,611	635,253	154,220	1,822,929	1,254,240	950,084	3,077
R-026	RC	297.95	1,364,613	726,999	1,671,502	572,065	89,385	3,763,114	661
R-026	LI	943.51	2,075,721	4,736,418	2,764,483	14,492,307	16,162,319	9,576,622	30,655
R-026	BP	347.61	1,067,159	903,783	1,473,861	1,015,018	0	3,444,803	1,015
R-027	RC	3.62	16,570	8,828	20,297	6,947	1,085	45,695	8
R-028	SR	134.00	117,537	425,150	134,147	1,278,963	808,020	676,834	2,087
R-029	RC	3.80	17,381	9,260	21,290	7,286	1,139	47,931	8

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
R-030	RC	208.57	955,229	508,899	1,170,051	400,445	62,570	2,634,179	463
R-031	MF	36.00	27,798	109,948	26,692	315,507	217,080	164,438	533
R-032	RC	22.27	102,006	54,344	124,946	42,762	6,682	281,295	49
R-033	MF	30.00	23,165	91,623	22,243	262,922	180,900	137,031	444
R-034	OG	12.17	37,350	33,943	44,528	42,216	0	115,820	42
R-035	MF	102.00	78,761	311,518	75,627	893,936	615,060	465,906	1,509
R-036	MF	62.00	47,875	189,354	45,969	543,373	373,860	283,198	917
R-037	RC	6.00	27,480	14,640	33,660	11,520	1,800	75,780	13
R-038	RC	3.50	16,030	8,540	19,635	6,720	1,050	44,205	8
R-039	SF	402.00	382,571	2,474,700	646,754	9,871,572	2,424,060	3,504,025	12,296
R-040	RC	2.40	10,992	5,856	13,464	4,608	720	30,312	5
R-041	OG	23.12	70,991	64,516	84,634	80,240	0	220,140	80
R-042	SF	598.00	569,099	3,681,270	962,086	14,684,578	3,605,940	5,212,455	18,291
R-043	SF	50.00	47,584	307,799	80,442	1,227,808	301,500	435,824	1,529
R-044	RC	4.00	18,320	9,760	22,440	7,680	1,200	50,520	9
R-045	OG	37.94	116,473	105,850	138,857	131,648	0	361,179	132
R-046	SF	35.84	34,111	220,648	57,666	880,166	216,133	312,425	1,096
R-047	WH	107.73	39,861	88,340	126,046	215,464	3,232	254,248	219
R-048	RC	75.30	344,874	183,732	422,433	144,576	22,590	951,039	167
R-049	SR	310.00	271,913	983,556	310,341	2,958,795	1,869,300	1,565,810	4,828
R-050	SF	3.83	3,647	23,593	6,166	94,111	23,110	33,406	117
R-051	RC	2.36	10,813	5,761	13,245	4,533	708	29,819	5
R-052	SF	32.00	30,453	196,991	51,483	785,797	192,960	278,927	979
R-053	SF	29.00	27,598	178,523	46,656	712,128	174,870	252,778	887
R-054	SF	25.00	23,792	153,899	40,221	613,904	150,750	217,912	765
R-055	SF	20.00	19,033	123,119	32,177	491,123	120,600	174,330	612
R-056	OG	131.00	402,170	365,490	479,460	454,570	0	1,247,120	455
R-057	LI	171.62	377,555	861,512	502,835	2,636,022	2,939,782	1,741,902	5,576
R-058	RC	2.75	12,577	6,700	15,405	5,272	824	34,682	6
R-059	RC	4.05	18,549	9,882	22,721	7,776	1,215	51,152	9
R-060	BP	101.58	311,851	264,108	430,699	296,614	0	1,006,658	297
R-061	RC	425.45	1,948,547	1,038,091	2,386,758	816,858	127,634	5,373,396	944
R-062	RC	1.83	8,386	4,468	10,272	3,516	549	23,126	4
R-063	MF	21.00	16,216	64,136	15,570	184,046	126,630	95,922	311
R-064	SF	5.00	4,758	30,780	8,044	122,781	30,150	43,582	153
R-065	SF	62.00	59,004	381,670	99,748	1,522,481	373,860	540,422	1,896
R-066	RC	6.15	28,167	15,006	34,502	11,808	1,845	77,675	14
RC-001	SF	1,251.00	1,190,539	7,701,118	2,012,659	30,719,744	7,543,530	10,904,316	38,263
RC-002	SF	2,000.00	1,903,340	12,311,940	3,217,680	49,112,300	12,060,000	17,432,960	61,172
RC-003	SF	3,412.00	3,247,098	21,004,170	5,489,362	83,785,584	20,574,360	29,740,630	104,360
RC-005	SF	750.00	713,753	4,616,978	1,206,630	18,417,113	4,522,500	6,537,360	22,940

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
RC-006	BP	600.00	1,842,000	1,560,000	2,544,000	1,752,000	0	5,946,000	1,752
RC-007	WH	1,586.65	587,059	1,301,049	1,856,375	3,173,290	47,599	3,744,482	3,221
RC-009	OG	34.00	104,380	94,860	124,440	117,980	0	323,680	118
RC-009	HI	1,172.71	2,579,962	5,887,004	3,436,040	18,012,826	20,088,522	11,903,007	38,101
RC-010	LI	6,200.00	13,640,000	31,124,000	18,166,000	95,232,000	106,206,000	62,930,000	201,438
RC-011	WH	814.00	301,180	667,480	952,380	1,628,000	24,420	1,921,040	1,652
RC-012	LI	423.67	932,063	2,126,798	1,241,338	6,507,494	7,257,381	4,300,200	13,765
RC-013	SF	497.00	472,980	3,059,517	799,593	12,204,407	2,996,910	4,332,091	15,201
RC-014	MF	320.00	247,094	977,312	237,261	2,804,506	1,929,600	1,461,667	4,734
RC-015	SF	142.00	135,137	874,148	228,455	3,486,973	856,260	1,237,740	4,343
RC-017	RC	9.28	42,502	22,643	52,061	17,818	2,784	117,206	21
RC-018	SF	15.00	14,275	92,340	24,133	368,342	90,450	130,747	459
RC-019	RC	52.80	241,815	128,827	296,197	101,372	15,839	666,839	117
RC-020	RC	2.80	12,824	6,832	15,708	5,376	840	35,364	6
RC-021	WH	8.00	2,960	6,560	9,360	16,000	240	18,880	16
RC-022	SF	131.00	124,669	806,432	210,758	3,216,856	789,930	1,141,859	4,007
RC-023	LI	52.45	115,390	263,299	153,679	805,632	898,469	532,368	1,704
RC-024	LI	190.80	419,764	957,826	559,050	2,930,719	3,268,438	1,936,640	6,199
RC-025	LI	85.00	187,000	426,700	249,050	1,305,600	1,456,050	862,750	2,762
RC-026	SF	2.00	1,903	12,312	3,218	49,112	12,060	17,433	61
RC-027	LI	188.70	415,144	947,284	552,897	2,898,461	3,232,464	1,915,324	6,131
RC-028	RC	5.60	25,648	13,664	31,416	10,752	1,680	70,728	12
RC-029	RC	8.14	37,290	19,866	45,677	15,633	2,443	102,833	18
RC-030	WH	1,259.05	465,849	1,032,421	1,473,089	2,518,100	37,772	2,971,358	2,556
RC-031	LI	180.60	397,320	906,612	529,158	2,774,016	3,093,678	1,833,090	5,868
RC-032	SF	726.00	690,912	4,469,234	1,168,018	17,827,765	4,377,780	6,328,164	22,206
RC-033	SF	384.00	365,441	2,363,892	617,795	9,429,562	2,315,520	3,347,128	11,745
RC-034	SF	432.00	411,121	2,659,379	695,019	10,608,257	2,604,960	3,765,519	13,213
RC-035	SF	2,775.00	2,640,884	17,082,817	4,464,531	68,143,316	16,733,250	24,188,232	84,877
RC-035	OG	80.00	245,600	223,200	292,800	277,600	0	761,600	278
RC-035	MF	102.00	78,761	311,518	75,627	893,936	615,060	465,906	1,509
RC-036	SF	468.00	445,382	2,880,994	752,937	11,492,278	2,822,040	4,079,313	14,314
RC-037	SF	562.00	534,839	3,459,655	904,168	13,800,556	3,388,860	4,898,662	17,189
RC-038	WH	1,823.76	674,791	1,495,483	2,133,799	3,647,520	54,713	4,304,074	3,702
RC-039	SF	39.00	37,115	240,083	62,745	957,690	235,170	339,943	1,193
RD-001	SF	82.00	78,037	504,790	131,925	2,013,604	494,460	714,751	2,508
RD-002	SF	55.00	52,342	338,578	88,486	1,350,588	331,650	479,406	1,682
RD-003	SF	103.00	98,022	634,065	165,711	2,529,283	621,090	897,797	3,150
RD-004	SF	67.00	63,762	412,450	107,792	1,645,262	404,010	584,004	2,049
RD-005	WH	500.60	185,223	410,494	585,704	1,001,204	15,018	1,181,421	1,016
RD-006	RC	48.22	220,866	117,667	270,537	92,590	14,467	609,069	107

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity		Natural Gas			Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
RD-007	RC	127.75	585,077	311,700	716,655	245,272	38,324	1,613,432	284
RD-008	MF	80.00	61,774	244,328	59,315	701,126	482,400	365,417	1,184
RD-009	RC	43.80	200,613	106,877	245,729	84,100	13,141	553,219	97
RD-010	LI	145.26	319,561	729,180	425,597	2,231,117	2,488,218	1,474,338	4,719
RD-011	RC	55.47	254,030	135,335	311,159	106,493	16,640	700,523	123
RD-012	WH	601.29	222,476	493,055	703,506	1,202,574	18,039	1,419,037	1,221
RD-013	WH	1,013.00	374,810	830,660	1,185,210	2,026,000	30,390	2,390,680	2,056
RD-014	WH	772.00	285,640	633,040	903,240	1,544,000	23,160	1,821,920	1,567
RD-015	WH	423.00	156,510	346,860	494,910	846,000	12,690	998,280	859
RD-016	WH	714.73	264,451	586,081	836,238	1,429,466	21,442	1,686,770	1,451
SB-001	WH	614.33	227,301	503,749	718,764	1,228,656	18,430	1,449,814	1,247
SB-002	WH	313.47	115,984	257,045	366,760	626,940	9,404	739,789	636
SB-003	WH	593.56	219,618	486,722	694,469	1,187,126	17,807	1,400,809	1,205
SB-004	WH	777.62	287,719	637,648	909,815	1,555,240	23,329	1,835,183	1,579
SB-005	WH	282.00	104,340	231,240	329,940	564,000	8,460	665,520	572
SB-006	WH	542.98	200,901	445,241	635,283	1,085,954	16,289	1,281,426	1,102
SB-007	SF	34.00	32,356,780	209,302,980	54,700,560	834,909	205,020	296,360,320	1,040
SB-008	SF	40.00	38,067	246,239	64,354	982,246	241,200	348,659	1,223
SJ-001	RC	1,678.24	7,686,361	4,094,917	9,414,954	3,222	503	21,196,232	4
SJ-002	SF	321.00	305,486	1,976,066	516,438	7,882,524	1,935,630	2,797,990	9,818
SJ-003	SF	580.00	551,969	3,570,463	933,127	14,242,567	3,497,400	5,055,558	17,740
SJ-004	SF	613.00	583,374	3,773,610	986,219	15,052,920	3,696,390	5,343,202	18,749
WLC-001	SF	60.00	57,100	369,358	96,530	1,473,369	361,800	522,989	1,835

World Logistic Center
Cumulative Energy - Electricity Natural Gas

		Water Usage (gal/ unit)	
		Indoor	Outdoor
BP	Office Park	177,734	108,937
HI	Heavy Industrial	231,250	0
LI	Light Industrial	231,250	0
MF	Multi-Family - Mid Rise Apartment	65,154	41,075
MO	Medical Office	125,481	23,901
OG	General Office	177,734	108,934
RC	Retail Commercial	74,073	45,399
SF	Single Family Residential	65,154	41,075
SR	Senior Residential	65,154	41,075
WH	Warehouse - Unrefrigerated No Rail	231,250	0

Electricity Intensity Rates (kWhr/Million Gallons)			
Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
9727	111	1272	1911

Energy Cons **Energy Consumption - Electricity from Potable Water Use**

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
B-001	215,008,200	135,547,500	350.5557	215.0082	3,409,855	38,912	445,907	410,881
B-002	37,202,934	23,453,825	60.656759	37.202934	590,008	6,733	77,155	71,095
B-003	60,071,988	37,871,150	97.943138	60.071988	952,693	10,872	124,584	114,798
B-004	400,987,500	0	400.9875	400.9875	3,900,405	44,510	510,056	766,287
B-005	593,314,425	0	593.314425	593.314425	5,771,169	65,858	754,696	1,133,824
B-006	329,385,800	201,887,657	531.2734573	329.3858	5,167,697	58,971	675,780	629,456
B-007	26,257,062	16,553,225	42.810287	26.257062	416,416	4,752	54,455	50,177
B-008	42,219,792	26,616,600	68.836392	42.219792	669,572	7,641	87,560	80,682
B-009	289,935,300	182,783,750	472.71905	289.9353	4,598,138	52,472	601,299	554,066
B-010	6,189,630	3,902,125	10.091755	6.18963	98,163	1,120	12,837	11,828
B-011	16,666,425	10,214,775	26.8812	16.666425	261,473	2,984	34,193	31,850
B-012	18,177,966	11,459,925	29.637891	18.177966	288,288	3,290	37,699	34,738
B-013	123,141,060	77,631,750	200.77281	123.14106	1,952,917	22,286	255,383	235,323
B-014	45,607,800	28,752,500	74.3603	45.6078	723,303	8,254	94,586	87,157
C-001	14,814,600	9,079,800	23.8944	14.8146	232,421	2,652	30,394	28,311
C-002	74,073,000	45,399,000	119.472	74.073	1,162,104	13,261	151,968	141,554
C-002	280,641,986	172,011,523	452.653509	280.641986	4,402,961	50,245	575,775	536,307
C-003	5,385,107	3,300,507	8.6856144	5.3851071	84,485	964	11,048	10,291
H-001	38,310,552	24,152,100	62.462652	38.310552	607,574	6,933	79,452	73,211
H-002	28,667,760	18,073,000	46.74076	28.66776	454,647	5,188	59,454	54,784
H-003	60,658,374	38,240,825	98.899199	60.658374	961,993	10,978	125,800	115,918
H-004	169,965,050	0	169.96505	169.96505	1,653,250	18,866	216,196	324,803
H-004	176,872,523	108,408,982	285.2815057	176.8725233	2,774,933	31,666	362,878	338,003

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
H-005	1,548,778	949,239	2.498016154	1.548777542	24,298	277	3,177	2,960
H-006	50,428,010	30,907,094	81.33510394	50.42800952	791,147	9,028	103,458	96,368
H-007	23,325,132	14,704,850	38.029982	23.325132	369,918	4,221	48,374	44,574
H-008	28,667,760	18,073,000	46.74076	28.66776	454,647	5,188	59,454	54,784
H-008	9,447,330	5,955,875	15.403205	9.44733	149,827	1,710	19,593	18,054
H-009	39,027,246	24,603,925	63.631171	39.027246	618,940	7,063	80,939	74,581
M-001	740,730	453,990	1.19472	0.74073	11,621	133	1,520	1,416
M-001	45,873,501	28,116,083	73.98958414	45.87350087	719,697	8,213	94,115	87,664
M-001	9,763,838	0	9.7638375	9.7638375	94,973	1,084	12,420	18,659
M-001	94,653,400	0	94.6534	94.6534	920,694	10,507	120,399	180,883
M-002	1,046,406,250	0	1046.40625	1046.40625	10,178,394	116,151	1,331,029	1,999,682
M-002	83,357,246	51,090,046	134.447292	83.357246	1,307,769	14,924	171,017	159,296
M-002	112,803,750	0	112.80375	112.80375	1,097,242	12,521	143,486	215,568
M-003	670,625,000	0	670.625	670.625	6,523,169	74,439	853,035	1,281,564
M-004	8,066,550	4,943,951	13.0105008	8.0665497	126,553	1,444	16,549	15,415
M-005	708,044,719	0	708.0447188	708.0447188	6,887,151	78,593	900,633	1,353,073
M-005	41,368,477	25,354,933	66.72341034	41.36847717	649,019	7,406	84,872	79,055
M-005	245,455,456	0	245.4554563	245.4554563	2,387,545	27,246	312,219	469,065
M-006	38,985,567	23,895,094	62.88066065	38.98556652	611,640	6,980	79,984	74,501
M-007	156,209,375	0	156.209375	156.209375	1,519,449	17,339	198,698	298,516
M-008	46,295,625	28,374,375	74.67	46.295625	726,315	8,288	94,980	88,471
M-008	367,659,330	70,029,930	437.68926	367.65933	4,257,403	48,584	556,741	702,597
M-009	8,795,790	5,545,125	14.340915	8.79579	139,494	1,592	18,242	16,809
M-010	129,268,750	0	129.26875	129.26875	1,257,397	14,349	164,430	247,033
M-011	4,962,891	3,041,733	8.004624	4.962891	77,861	889	10,182	9,484
MV-001	22,555,229	13,823,996	36.379224	22.5552285	353,861	4,038	46,274	43,103
MV-002	17,070,348	10,761,650	27.831998	17.070348	270,722	3,089	35,402	32,621
MV-002	14,073,264	8,872,200	22.945464	14.073264	223,191	2,547	29,187	26,894
MV-003	439,606,250	0	439.60625	439.60625	4,276,050	48,796	559,179	840,088
MV-003	84,868,750	0	84.86875	84.86875	825,518	9,420	107,953	162,184
MV-004	216,741,375	0	216.741375	216.741375	2,108,243	24,058	275,695	414,193
MV-005	8,619,134	5,282,628	13.90176192	8.61913428	135,222	1,543	17,683	16,471
MV-006	173,437,500	0	173.4375	173.4375	1,687,027	19,252	220,613	331,439
MV-007	2,019,774	1,273,325	3.293099	2.019774	32,032	366	4,189	3,860
MV-008	3,778,932	2,382,350	6.161282	3.778932	59,931	684	7,837	7,222
MV-009	716,694	451,825	1.168519	0.716694	11,366	130	1,486	1,370
MV-010	3,062,238	1,930,525	4.992763	3.062238	48,565	554	6,351	5,852
MV-011	1,563,696	985,800	2.549496	1.563696	24,799	283	3,243	2,988
MV-012	10,038,480	1,912,080	11.95056	10.03848	116,243	1,327	15,201	19,184
MV-013	5,332,020	3,268,020	8.60004	5.33202	83,653	955	10,939	10,189
MV-014	6,971,478	4,395,025	11.366503	6.971478	110,562	1,262	14,458	13,322

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
MV-015	4,104,702	2,587,725	6.692427	4.104702	65,097	743	8,513	7,844
MV-016	2,084,928	1,314,400	3.399328	2.084928	33,065	377	4,324	3,984
MV-017	6,254,784	3,943,200	10.197984	6.254784	99,196	1,132	12,972	11,953
MV-018	407,402	249,695	0.657096	0.4074015	6,392	73	836	779
MV-019	9,056,406	5,709,425	14.765831	9.056406	143,627	1,639	18,782	17,307
MV-020	6,947,159	4,257,881	11.20503994	6.947158524	108,991	1,244	14,253	13,276
MV-021	10,038,480	1,912,080	11.95056	10.03848	116,243	1,327	15,201	19,184
MV-022	2,606,160	1,643,000	4.24916	2.60616	41,332	472	5,405	4,980
MV-023	27,169,218	17,128,275	44.297493	27.169218	430,882	4,917	56,346	51,920
MV-024	10,359,486	6,530,925	16.890411	10.359486	164,293	1,875	21,485	19,797
MV-025	5,277,474	3,327,075	8.604549	5.277474	83,696	955	10,945	10,085
MV-026	6,515,400	4,107,500	10.6229	6.5154	103,329	1,179	13,512	12,451
MV-027	3,518,316	2,218,050	5.736366	3.518316	55,798	637	7,297	6,724
MV-028	5,863,860	3,696,750	9.56061	5.86386	92,996	1,061	12,161	11,206
MV-029	17,917,350	11,295,625	29.212975	17.91735	284,155	3,243	37,159	34,240
MV-030	5,407,782	3,409,225	8.817007	5.407782	85,763	979	11,215	10,334
MV-031	3,453,162	2,176,975	5.630137	3.453162	54,764	625	7,162	6,599
MV-032	7,492,710	4,723,625	12.216335	7.49271	118,828	1,356	15,539	14,319
MV-033	3,518,316	2,218,050	5.736366	3.518316	55,798	637	7,297	6,724
MV-034	3,388,008	2,135,900	5.523908	3.388008	53,731	613	7,026	6,474
MV-035	1,628,850	1,026,875	2.655725	1.62885	25,832	295	3,378	3,113
MV-036	3,648,624	2,300,200	5.948824	3.648624	57,864	660	7,567	6,973
MV-037	373,730,756	0	373.7307563	373.7307563	3,635,279	41,484	475,386	714,199
MV-038	100,362,500	0	100.3625	100.3625	976,226	11,140	127,661	191,793
MV-039	370,000,000	0	370	370	3,598,990	41,070	470,640	707,070
MV-040	22,753,844	0	22.75384375	22.75384375	221,327	2,526	28,943	43,483
MV-041	335,312,500	0	335.3125	335.3125	3,261,585	37,220	426,518	640,782
MV-042	103,218,438	0	103.2184375	103.2184375	1,004,006	11,457	131,294	197,250
MV-043	128,498,688	0	128.4986875	128.4986875	1,249,907	14,263	163,450	245,561
MV-044	256,543,663	0	256.5436625	256.5436625	2,495,400	28,476	326,324	490,255
MV-045	6,453,240	3,955,161	10.40840064	6.45323976	101,243	1,155	13,239	12,332
MV-046	88,402,250	0	88.40225	88.40225	859,889	9,813	112,448	168,937
MV-047	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992
MV-048	263,845,590	161,716,650	425.5622395	263.8455898	4,139,444	47,237	541,315	504,209
MV-049	277,273,216	169,946,731	447.2199469	277.2732158	4,350,108	49,641	568,864	529,869
MV-050	82,049,813	0	82.0498125	82.0498125	798,099	9,108	104,367	156,797
MV-051	177,905,250	0	177.90525	177.90525	1,730,484	19,747	226,295	339,977
MV-052	203,259,500	0	203.2595	203.2595	1,977,105	22,562	258,546	388,429
MV-053	289,062,500	0	289.0625	289.0625	2,811,711	32,086	367,688	552,398
MV-054	401,912,500	0	401.9125	401.9125	3,909,403	44,612	511,233	768,055
MV-056	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
MV-057	2,410,698	1,519,775	3.930473	2.410698	38,232	436	5,000	4,607
MV-058	521,232	328,600	0.849832	0.521232	8,266	94	1,081	996
MV-059	4,104,702	2,587,725	6.692427	4.104702	65,097	743	8,513	7,844
MV-060	5,994,168	3,778,900	9.773068	5.994168	95,063	1,085	12,431	11,455
MV-061	13,333,140	8,171,820	21.50496	13.33314	209,179	2,387	27,354	25,480
MV-062	35,378,622	22,303,725	57.682347	35.378622	561,076	6,403	73,372	67,609
MV-063	14,399,034	9,077,575	23.476609	14.399034	228,357	2,606	29,862	27,517
MV-064	5,668,398	3,573,525	9.241923	5.668398	89,896	1,026	11,756	10,832
MV-065	3,388,008	2,135,900	5.523908	3.388008	53,731	613	7,026	6,474
MV-066	16,353,654	10,309,825	26.663479	16.353654	259,356	2,960	33,916	31,252
MV-067	10,489,794	6,613,075	17.102869	10.489794	166,360	1,898	21,755	20,046
MV-068	47,888,638	0	47.8886375	47.8886375	465,813	5,316	60,914	91,515
MV-069	94,719,538	0	94.7195375	94.7195375	921,337	10,514	120,483	181,009
MV-070	15,702,114	9,899,075	25.601189	15.702114	249,023	2,842	32,565	30,007
MV-071	3,192,546	2,012,675	5.205221	3.192546	50,631	578	6,621	6,101
MV-072	1,563,696	985,800	2.549496	1.563696	24,799	283	3,243	2,988
MV-073	6,254,784	3,943,200	10.197984	6.254784	99,196	1,132	12,972	11,953
MV-074	12,314,106	7,763,175	20.077281	12.314106	195,292	2,229	25,538	23,532
MV-075	95,189,994	60,010,575	155.200569	95.189994	1,509,636	17,227	197,415	181,908
MV-076	23,083,591	14,147,827	37.23141778	23.08359121	362,150	4,133	47,358	44,113
MV-077	123,256,250	0	123.25625	123.25625	1,198,914	13,681	156,782	235,543
MV-078	120,250,000	0	120.25	120.25	1,169,672	13,348	152,958	229,798
MV-079	84,868,750	0	84.86875	84.86875	825,518	9,420	107,953	162,184
MV-080	3,281,434	2,011,176	5.2926096	3.2814339	51,481	587	6,732	6,271
MV-081	161,875,000	0	161.875	161.875	1,574,558	17,968	205,905	309,343
MV-082	115,625,000	0	115.625	115.625	1,124,684	12,834	147,075	220,959
MV-083	82,325,000	0	82.325	82.325	800,775	9,138	104,717	157,323
MV-084	23,119,913	0	23.1199125	23.1199125	224,887	2,566	29,409	44,182
MV-085	10,370,220	6,355,860	16.72608	10.37022	162,695	1,857	21,276	19,817
MV-086	4,625,934	2,916,325	7.542259	4.625934	73,364	837	9,594	8,840
MV-087	3,909,240	2,464,500	6.37374	3.90924	61,997	707	8,107	7,471
MV-088	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-089	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-090	541,474	331,867	0.87334032	0.54147363	8,495	97	1,111	1,035
MV-091	5,668,398	3,573,525	9.241923	5.668398	89,896	1,026	11,756	10,832
MV-093	7,297,248	4,600,400	11.897648	7.297248	115,728	1,321	15,134	13,945
MV-094	17,330,964	10,925,950	28.256914	17.330964	274,855	3,137	35,943	33,119
MV-095	12,962,775	7,944,825	20.9076	12.962775	203,368	2,321	26,594	24,772
MV-096	5,082,012	3,203,850	8.285862	5.082012	80,597	920	10,540	9,712
MV-097	13,942,956	8,790,050	22.733006	13.942956	221,124	2,523	28,916	26,645
MV-098	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
MV-099	6,254,784	3,943,200	10.197984	6.254784	99,196	1,132	12,972	11,953
MV-100	12,639,876	7,968,550	20.608426	12.639876	200,458	2,288	26,214	24,155
MV-101	666,657	408,591	1.075248	0.666657	10,459	119	1,368	1,274
MV-102	14,929,656	9,150,456	24.080112	14.929656	234,227	2,673	30,630	28,531
MV-103	42,550,000	0	42.55	42.55	413,884	4,723	54,124	81,313
MV-104	86,263,188	0	86.2631875	86.2631875	839,082	9,575	109,727	164,849
MV-105	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-106	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-107	586,386	369,675	0.956061	0.586386	9,300	106	1,216	1,121
MV-108	220,219	134,971	0.355190256	0.220219029	3,455	39	452	421
MV-109	71,995,170	45,387,875	117.383045	71.99517	1,141,785	13,030	149,311	137,583
MV-110	3,909,240	2,464,500	6.37374	3.90924	61,997	707	8,107	7,471
MV-111	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992
MV-112	977,310	616,125	1.593435	0.97731	15,499	177	2,027	1,868
MV-113	9,382,176	5,914,800	15.296976	9.382176	148,794	1,698	19,458	17,929
MV-114	422,216	258,774	0.6809904	0.4222161	6,624	76	866	807
MV-115	4,088	2,505	0.006593364	0.004087882	64	1	8	8
MV-116	1,628,850	1,026,875	2.655725	1.62885	25,832	295	3,378	3,113
MV-117	9,242,168	5,664,568	14.906736	9.242168	144,998	1,655	18,961	17,662
MV-118	586,386	369,675	0.956061	0.586386	9,300	106	1,216	1,121
MV-119	2,280,390	1,437,625	3.718015	2.28039	36,165	413	4,729	4,358
MV-120	14,038,315	8,604,018	22.64233344	14.03831496	220,242	2,513	28,801	26,827
MV-121	322,292	197,531	0.519822672	0.322291623	5,056	58	661	616
MV-123	1,037,022	635,586	1.672608	1.037022	16,269	186	2,128	1,982
MV-124	10,370,220	6,355,860	16.72608	10.37022	162,695	1,857	21,276	19,817
MV-125	1,563,696	985,800	2.549496	1.563696	24,799	283	3,243	2,988
MV-126	15,311,190	9,652,625	24.963815	15.31119	242,823	2,771	31,754	29,260
MV-127	78,627,313	0	78.6273125	78.6273125	764,808	8,728	100,014	150,257
MV-129	365,375,000	0	365.375	365.375	3,554,003	40,557	464,757	698,232
MV-130	51,304,894	0	51.30489375	51.30489375	499,043	5,695	65,260	98,044
MV-131	346,875,000	0	346.875	346.875	3,374,053	38,503	441,225	662,878
MV-132	254,375,000	0	254.375	254.375	2,474,306	28,236	323,565	486,111
P-001	8,926,098	5,627,275	14.553373	8.926098	141,561	1,615	18,512	17,058
P-002	138,750,000	0	138.75	138.75	1,349,621	15,401	176,490	265,151
P-003	106,906,875	0	106.906875	106.906875	1,039,883	11,867	135,986	204,299
P-004	39,775,000	0	39.775	39.775	386,891	4,415	50,594	76,010
P-005	106,375,000	0	106.375	106.375	1,034,710	11,808	135,309	203,283
P-006	138,750,000	0	138.75	138.75	1,349,621	15,401	176,490	265,151
P-007	275,155,125	0	275.155125	275.155125	2,676,434	30,542	349,997	525,821
P-008	55,731,250	0	55.73125	55.73125	542,098	6,186	70,890	106,502
P-009	148,462,500	0	148.4625	148.4625	1,444,095	16,479	188,844	283,712

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
P-010	393,125,000	0	393.125	393.125	3,823,927	43,637	500,055	751,262
P-011	283,279,631	0	283.2796313	283.2796313	2,755,461	31,444	360,332	541,347
P-012	105,007,850	0	105.00785	105.00785	1,021,411	11,656	133,570	200,670
P-014	277,500,000	0	277.5	277.5	2,699,243	30,803	352,980	530,303
P-015	180,563,469	0	180.5634688	180.5634688	1,756,341	20,043	229,677	345,057
P-016	302,937,500	0	302.9375	302.9375	2,946,673	33,626	385,337	578,914
P-017	134,125,000	0	134.125	134.125	1,304,634	14,888	170,607	256,313
P-018	357,743,750	0	357.74375	357.74375	3,479,773	39,710	455,050	683,648
P-019	161,320,000	0	161.32	161.32	1,569,160	17,907	205,199	308,283
P-020	201,534,375	0	201.534375	201.534375	1,960,325	22,370	256,352	385,132
P-021	39,312,500	0	39.3125	39.3125	382,393	4,364	50,006	75,126
P-022	87,875,000	0	87.875	87.875	854,760	9,754	111,777	167,929
P-023	41,625,000	0	41.625	41.625	404,886	4,620	52,947	79,545
P-024	338,550,000	0	338.55	338.55	3,293,076	37,579	430,636	646,969
P-025	240,037,500	0	240.0375	240.0375	2,334,845	26,644	305,328	458,712
P-026	187,687,125	0	187.687125	187.687125	1,825,633	20,833	238,738	358,670
P-027	199,800,000	0	199.8	199.8	1,943,455	22,178	254,146	381,818
P-028	154,937,500	0	154.9375	154.9375	1,507,077	17,198	197,081	296,086
P-030	32,055,768	20,208,900	52.264668	32.055768	508,378	5,801	66,481	61,259
P-031	4,886,550	3,080,625	7.967175	4.88655	77,497	884	10,134	9,338
P-032	47,628,939	29,191,557	76.820496	47.628939	747,233	8,527	97,716	91,019
P-033	121,186,440	76,399,500	197.58594	121.18644	1,921,918	21,932	251,329	231,587
P-034	732,335,681	0	732.3356813	732.3356813	7,123,429	81,289	931,531	1,399,493
P-035	2,606,160	1,643,000	4.24916	2.60616	41,332	472	5,405	4,980
P-036	797,519,738	0	797.5197375	797.5197375	7,757,474	88,525	1,014,445	1,524,060
P-036	3,703,650	2,269,950	5.9736	3.70365	58,105	663	7,598	7,078
P-037	11,923,182	7,516,725	19.439907	11.923182	189,092	2,158	24,728	22,785
P-038	14,529,342	9,159,725	23.689067	14.529342	230,424	2,629	30,132	27,766
P-039	181,230,625	0	181.230625	181.230625	1,762,830	20,117	230,525	346,332
P-040	7,948,788	5,011,150	12.959938	7.948788	126,061	1,439	16,485	15,190
P-041	34,626,913	0	34.6269125	34.6269125	336,816	3,844	44,045	66,172
P-042	3,974,394	2,505,575	6.479969	3.974394	63,031	719	8,243	7,595
P-043	3,713,778	2,341,275	6.055053	3.713778	58,898	672	7,702	7,097
P-044	6,124,476	3,861,050	9.985526	6.124476	97,129	1,108	12,702	11,704
P-045	4,886,550	3,080,625	7.967175	4.88655	77,497	884	10,134	9,338
P-046	27,951,066	17,621,175	45.572241	27.951066	443,281	5,059	57,968	53,414
P-047	33,945,234	21,400,075	55.345309	33.945234	538,344	6,143	70,399	64,869
P-048	4,886,550	3,080,625	7.967175	4.88655	77,497	884	10,134	9,338
P-049	7,427,556	4,682,550	12.110106	7.427556	117,795	1,344	15,404	14,194
P-050	5,925,840	3,631,920	9.55776	5.92584	92,968	1,061	12,157	11,324
P-051	2,280,390	1,437,625	3.718015	2.28039	36,165	413	4,729	4,358

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
P-052	5,342,628	3,368,150	8.710778	5.342628	84,730	967	11,080	10,210
P-053	10,489,794	6,613,075	17.102869	10.489794	166,360	1,898	21,755	20,046
P-054	15,506,652	9,775,850	25.282502	15.506652	245,923	2,806	32,159	29,633
P-055	33,332,850	20,429,550	53.7624	33.33285	522,947	5,968	68,386	63,699
P-056	2,278,738	0	2.2787375	2.2787375	22,165	253	2,899	4,355
P-057	9,631,563	0	9.6315625	9.6315625	93,686	1,069	12,251	18,406
P-058	87,412,500	0	87.4125	87.4125	850,261	9,703	111,189	167,045
P-059	15,832,422	9,981,225	25.813647	15.832422	251,089	2,865	32,835	30,256
P-060	333,329	204,296	0.537624	0.3333285	5,229	60	684	637
P-061	80,937,500	0	80.9375	80.9375	787,279	8,984	102,953	154,672
R-001	244,414,287	149,806,785	394.2210724	244.414287	3,834,588	43,759	501,449	467,076
R-002	134,766,025	0	134.766025	134.766025	1,310,869	14,959	171,422	257,538
R-003	150,779,163	0	150.7791625	150.7791625	1,466,629	16,736	191,791	288,139
R-004	14,073,264	8,872,200	22.945464	14.073264	223,191	2,547	29,187	26,894
R-005	62,740,500	11,950,500	74.691	62.7405	726,519	8,291	95,007	119,897
R-006	5,016,858	3,162,775	8.179633	5.016858	79,563	908	10,404	9,587
R-007	4,155,569	2,546,929	6.702498672	4.155569373	65,195	744	8,526	7,941
R-008	2,410,698	1,519,775	3.930473	2.410698	38,232	436	5,000	4,607
R-009	650,184,556	398,495,115	1048.679671	650.1845562	10,200,507	116,403	1,333,921	1,242,503
R-010	1,745,530	1,069,827	2.81535768	1.745530245	27,385	313	3,581	3,336
R-011	60,546,264	37,110,111	97.65637506	60.54626441	949,904	10,840	124,219	115,704
R-012	4,546,436	2,786,490	7.332926419	4.546436476	71,327	814	9,327	8,688
R-013	195,462	123,225	0.318687	0.195462	3,100	35	405	374
R-014	285,774	175,149	0.460922976	0.285773634	4,483	51	586	546
R-015	11,186,681	7,052,413	18.23909438	11.18668118	177,412	2,025	23,200	21,378
R-016	99,405	62,668	0.162073585	0.099405458	1,576	18	206	190
R-017	17,917,350	11,295,625	29.212975	17.91735	284,155	3,243	37,159	34,240
R-018	2,089,997,910	0	2089.99791	2089.99791	20,329,410	231,990	2,658,477	3,993,986
R-019	3,583,470	2,259,125	5.842595	3.58347	56,831	649	7,432	6,848
R-020	337,960,081	0	337.9600813	337.9600813	3,287,338	37,514	429,885	645,842
R-021	977,310	616,125	1.593435	0.97731	15,499	177	2,027	1,868
R-022	586,386	369,675	0.956061	0.586386	9,300	106	1,216	1,121
R-023	595,473	364,963	0.960435408	0.595472847	9,342	107	1,222	1,138
R-024	325,770,000	205,375,000	531.145	325.77	5,166,447	58,957	675,616	622,546
R-025	13,552,032	8,543,600	22.095632	13.552032	214,924	2,453	28,106	25,898
R-026	22,070,080	13,526,650	35.59673019	22.07007998	346,249	3,951	45,279	42,176
R-026	218,186,595	0	218.186595	218.186595	2,122,301	24,219	277,533	416,955
R-026	61,781,902	37,867,460	99.6493623	61.78190246	969,289	11,061	126,754	118,065
R-027	267,996	164,254	0.432249696	0.267996114	4,204	48	550	512
R-028	8,730,636	5,504,050	14.234686	8.730636	138,461	1,580	18,107	16,684
R-029	281,107	172,289	0.45339624	0.281107035	4,410	50	577	537

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
R-030	15,449,056	9,468,655	24.91771113	15.44905599	242,375	2,766	31,695	29,523
R-031	2,345,544	1,478,700	3.824244	2.345544	37,198	424	4,864	4,482
R-032	1,649,754	1,011,127	2.660880384	1.649753856	25,882	295	3,385	3,153
R-033	1,954,620	1,232,250	3.18687	1.95462	30,999	354	4,054	3,735
R-034	2,162,312	1,325,291	3.487602888	2.162311844	33,924	387	4,436	4,132
R-035	6,645,708	4,189,650	10.835358	6.645708	105,396	1,203	13,783	12,700
R-036	4,039,548	2,546,650	6.586198	4.039548	64,064	731	8,378	7,720
R-037	444,438	272,394	0.716832	0.444438	6,973	80	912	849
R-038	259,256	158,897	0.418152	0.2592555	4,067	46	532	495
R-039	26,191,908	16,512,150	42.704058	26.191908	415,382	4,740	54,320	50,053
R-040	177,775	108,958	0.2867328	0.1777752	2,789	32	365	340
R-041	4,109,921	2,518,990	6.628910832	4.109921016	64,479	736	8,432	7,854
R-042	38,962,092	24,562,850	63.524942	38.962092	617,907	7,051	80,804	74,457
R-043	3,257,700	2,053,750	5.31145	3.2577	51,664	590	6,756	6,225
R-044	296,292	181,596	0.477888	0.296292	4,648	53	608	566
R-045	6,743,050	4,132,847	10.87589725	6.743050226	105,790	1,207	13,834	12,886
R-046	2,335,315	1,472,251	3.807566047	2.335314822	37,036	423	4,843	4,463
R-047	24,913,025	0	24.913025	24.913025	242,329	2,765	31,689	47,609
R-048	5,577,697	3,418,545	8.9962416	5.5776969	87,506	999	11,443	10,659
R-049	20,197,740	12,733,250	32.93099	20.19774	320,320	3,655	41,888	38,598
R-050	249,703	157,420	0.407122643	0.249702705	3,960	45	518	477
R-051	174,886	107,187	0.282073392	0.174886353	2,744	31	359	334
R-052	2,084,928	1,314,400	3.399328	2.084928	33,065	377	4,324	3,984
R-053	1,889,466	1,191,175	3.080641	1.889466	29,965	342	3,919	3,611
R-054	1,628,850	1,026,875	2.655725	1.62885	25,832	295	3,378	3,113
R-055	1,303,080	821,500	2.12458	1.30308	20,666	236	2,702	2,490
R-056	23,283,154	14,270,354	37.553508	23.283154	365,283	4,168	47,768	44,494
R-057	39,686,200	0	39.6862	39.6862	386,028	4,405	50,481	75,840
R-058	203,404	124,666	0.328070112	0.203404458	3,191	36	417	389
R-059	299,996	183,866	0.4838616	0.29999565	4,707	54	615	573
R-060	18,054,220	11,065,820	29.12004018	18.05421972	283,251	3,232	37,041	34,502
R-061	31,514,136	19,314,868	50.82900398	31.51413563	494,414	5,642	64,654	60,224
R-062	135,628	83,126	0.218753232	0.135627663	2,128	24	278	259
R-063	1,368,234	862,575	2.230809	1.368234	21,699	248	2,838	2,615
R-064	325,770	205,375	0.531145	0.32577	5,166	59	676	623
R-065	4,039,548	2,546,650	6.586198	4.039548	64,064	731	8,378	7,720
R-066	455,549	279,204	0.7347528	0.45554895	7,147	82	935	871
RC-001	81,507,654	51,384,825	132.892479	81.507654	1,292,645	14,751	169,039	155,761
RC-002	130,308,000	82,150,000	212.458	130.308	2,066,579	23,583	270,247	249,019
RC-003	222,305,448	140,147,900	362.453348	222.305448	3,525,584	40,232	461,041	424,826
RC-005	48,865,500	30,806,250	79.67175	48.8655	774,967	8,844	101,342	93,382

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
RC-006	106,640,400	65,362,200	172.0026	106.6404	1,673,069	19,092	218,787	203,790
RC-007	366,911,656	0	366.9116563	366.9116563	3,568,950	40,727	466,712	701,168
RC-009	6,042,956	3,703,756	9.746712	6.042956	94,806	1,082	12,398	11,548
RC-009	271,189,188	0	271.1891875	271.1891875	2,637,857	30,102	344,953	518,243
RC-010	1,433,750,000	0	1433.75	1433.75	13,946,086	159,146	1,823,730	2,739,896
RC-011	188,237,500	0	188.2375	188.2375	1,830,986	20,894	239,438	359,722
RC-012	97,972,531	0	97.97253125	97.97253125	952,979	10,875	124,621	187,226
RC-013	32,381,538	20,414,275	52.795813	32.381538	513,545	5,860	67,156	61,881
RC-014	20,849,280	13,144,000	33.99328	20.84928	330,653	3,773	43,239	39,843
RC-015	9,251,868	5,832,650	15.084518	9.251868	146,727	1,674	19,188	17,680
RC-017	687,397	421,303	1.10870016	0.68739744	10,784	123	1,410	1,314
RC-018	977,310	616,125	1.593435	0.97731	15,499	177	2,027	1,868
RC-019	3,910,906	2,396,976	6.307882656	3.910906254	61,357	700	8,024	7,474
RC-020	207,404	127,117	0.3345216	0.2074044	3,254	37	426	396
RC-021	1,850,000	0	1.85	1.85	17,995	205	2,353	3,535
RC-022	8,535,174	5,380,825	13.915999	8.535174	135,361	1,545	17,701	16,311
RC-023	12,129,063	0	12.1290625	12.1290625	117,979	1,346	15,428	23,179
RC-024	44,122,963	0	44.1229625	44.1229625	429,184	4,898	56,124	84,319
RC-025	19,656,250	0	19.65625	19.65625	191,196	2,182	25,003	37,563
RC-026	130,308	82,150	0.212458	0.130308	2,067	24	270	249
RC-027	43,637,319	0	43.637319	43.637319	424,460	4,844	55,507	83,391
RC-028	414,809	254,234	0.6690432	0.4148088	6,508	74	851	793
RC-029	603,102	369,639	0.972741024	0.603102366	9,462	108	1,237	1,153
RC-030	291,155,313	0	291.1553125	291.1553125	2,832,068	32,318	370,350	556,398
RC-031	41,763,750	0	41.76375	41.76375	406,236	4,636	53,123	79,811
RC-032	47,301,804	29,820,450	77.122254	47.301804	750,168	8,561	98,100	90,394
RC-033	25,019,136	15,772,800	40.791936	25.019136	396,783	4,528	51,887	47,812
RC-034	28,146,528	17,744,400	45.890928	28.146528	446,381	5,094	58,373	53,788
RC-035	180,802,350	113,983,125	294.785475	180.80235	2,867,378	32,721	374,967	345,513
RC-035	14,218,720	8,714,720	22.93344	14.21872	223,074	2,546	29,171	27,172
RC-035	6,645,708	4,189,650	10.835358	6.645708	105,396	1,203	13,783	12,700
RC-036	30,492,072	19,223,100	49.715172	30.492072	483,579	5,518	63,238	58,270
RC-037	36,616,548	23,084,150	59.700698	36.616548	580,709	6,627	75,939	69,974
RC-038	421,744,500	0	421.7445	421.7445	4,102,309	46,814	536,459	805,954
RC-039	2,541,006	1,601,925	4.142931	2.541006	40,298	460	5,270	4,856
RD-001	5,342,628	3,368,150	8.710778	5.342628	84,730	967	11,080	10,210
RD-002	3,583,470	2,259,125	5.842595	3.58347	56,831	649	7,432	6,848
RD-003	6,710,862	4,230,725	10.941587	6.710862	106,429	1,215	13,918	12,824
RD-004	4,365,318	2,752,025	7.117343	4.365318	69,230	790	9,053	8,342
RD-005	115,764,213	0	115.7642125	115.7642125	1,126,038	12,850	147,252	221,225
RD-006	3,572,096	2,189,321	5.761417728	3.572096352	56,041	640	7,329	6,826

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
RD-007	9,462,529	5,799,541	15.26207011	9.462529458	148,454	1,694	19,413	18,083
RD-008	5,212,320	3,286,000	8.49832	5.21232	82,663	943	10,810	9,961
RD-009	3,244,546	1,988,567	5.233112544	3.244545546	50,902	581	6,657	6,200
RD-010	33,590,219	0	33.59021875	33.59021875	326,732	3,729	42,727	64,191
RD-011	4,108,459	2,518,056	6.62651448	4.108458945	64,456	736	8,429	7,851
RD-012	139,047,619	0	139.0476188	139.0476188	1,352,516	15,434	176,869	265,720
RD-013	234,256,250	0	234.25625	234.25625	2,278,611	26,002	297,974	447,664
RD-014	178,525,000	0	178.525	178.525	1,736,513	19,816	227,084	341,161
RD-015	97,818,750	0	97.81875	97.81875	951,483	10,858	124,425	186,932
RD-016	165,282,006	0	165.2820063	165.2820063	1,607,698	18,346	210,239	315,854
SB-001	142,063,350	0	142.06335	142.06335	1,381,850	15,769	180,705	271,483
SB-002	72,489,938	0	72.4899375	72.4899375	705,110	8,046	92,207	138,528
SB-003	137,261,444	0	137.2614438	137.2614438	1,335,142	15,236	174,597	262,307
SB-004	179,824,625	0	179.824625	179.824625	1,749,154	19,961	228,737	343,645
SB-005	65,212,500	0	65.2125	65.2125	634,322	7,239	82,950	124,621
SB-006	125,563,431	0	125.5634313	125.5634313	1,221,355	13,938	159,717	239,952
SB-007	2,215,236	1,396,550	3.611786	2.215236	35,132	401	4,594	4,233
SB-008	2,606,160	1,643,000	4.24916	2.60616	41,332	472	5,405	4,980
SJ-001	124,312,630	76,190,637	200.5032673	124.3126299	1,950,295	22,256	255,040	237,561
SJ-002	20,914,434	13,185,075	34.099509	20.914434	331,686	3,785	43,375	39,967
SJ-003	37,789,320	23,823,500	61.61282	37.78932	599,308	6,839	78,372	72,215
SJ-004	39,939,402	25,178,975	65.118377	39.939402	633,406	7,228	82,831	76,324
WLC-001	3,909,240	2,464,500	6.37374	3.90924	61,997	707	8,107	7,471

2 Natural Gas

World Logistic Center

Cumulative Energy - Natural gas

Cumulative Natural Gas Consumption - Summary

Project ID	Annual MMBtu	Project ID	Annual MMBtu	Project ID	Annual MMBtu
B-001	100,934	MV-078	16,895	R-015	5,252
B-002	8,447	MV-079	745	R-016	47
B-003	28,200	MV-080	98	R-017	4,068
B-004	56,338	MV-081	1,421	R-018	293,639
B-005	83,359	MV-082	1,015	R-019	814
B-006	5,411	MV-083	11,566	R-020	2,967
B-007	12,326	MV-084	3,248	R-021	459
B-008	19,820	MV-085	311	R-022	275
B-009	136,108	MV-086	2,172	R-023	18
B-010	2,906	MV-087	888	R-024	152,931
B-011	500	MV-088	178	R-025	3,077
B-012	4,128	MV-089	178	R-026	661
B-013	57,808	MV-090	16	R-026	30,655
B-014	21,410	MV-091	2,661	R-026	1,015
C-001	444	MV-093	1,657	R-027	8
C-002	2,220	MV-094	3,935	R-028	2,087
C-002	4,611	MV-095	389	R-029	8
C-003	161	MV-096	2,386	R-030	463
H-001	17,985	MV-097	6,545	R-031	533
H-002	13,458	MV-098	489	R-032	49
H-003	28,476	MV-099	1,420	R-033	444
H-004	23,880	MV-100	2,870	R-034	42
H-004	2,906	MV-101	20	R-035	1,509
H-005	46	MV-102	291	R-036	917
H-006	1,511	MV-103	5,978	R-037	13
H-007	5,576	MV-104	757	R-038	8
H-008	6,853	MV-105	178	R-039	12,296
H-008	4,435	MV-106	178	R-040	5
H-009	9,329	MV-107	275	R-041	80
M-001	22	MV-108	7	R-042	18,291
M-001	896	MV-109	33,798	R-043	1,529
M-001	1,372	MV-110	888	R-044	9
M-001	13,299	MV-111	237	R-045	132
M-002	9,186	MV-112	222	R-046	1,096
M-002	1,627	MV-113	4,404	R-047	219
M-002	15,849	MV-114	13	R-048	167
M-003	5,887	MV-115	0	R-049	4,828
M-004	242	MV-116	765	R-050	117
M-005	6,215	MV-117	180	R-051	5
M-005	808	MV-118	275	R-052	979
M-005	34,486	MV-119	1,071	R-053	887
M-006	640	MV-120	421	R-054	765
M-007	1,371	MV-121	10	R-055	612

World Logistic Center

Cumulative Energy - Natural gas

Cumulative Natural Gas Consumption - Summary

Project ID	Annual MMBtu	Project ID	Annual MMBtu	Project ID	Annual MMBtu
M-008	1,388	MV-123	31	R-056	455
M-008	10,167	MV-124	311	R-057	5,576
M-009	4,129	MV-125	355	R-058	6
M-010	1,135	MV-126	7,188	R-059	9
M-011	149	MV-127	690	R-060	297
MV-001	676	MV-129	51,334	R-061	944
MV-002	8,014	MV-130	450	R-062	4
MV-002	3,196	MV-131	3,045	R-063	311
MV-003	3,859	MV-132	2,233	R-064	153
MV-003	11,924	P-001	4,190	R-065	1,896
MV-004	30,452	P-002	1,218	R-066	14
MV-005	258	P-003	938	RC-001	38,263
MV-006	1,523	P-004	5,588	RC-002	61,172
MV-007	948	P-005	934	RC-003	104,360
MV-008	1,774	P-006	19,494	RC-005	22,940
MV-009	336	P-007	38,659	RC-006	1,752
MV-010	1,438	P-008	7,830	RC-007	3,221
MV-011	734	P-009	20,859	RC-009	118
MV-012	278	P-010	3,451	RC-009	38,101
MV-013	104	P-011	39,800	RC-010	201,438
MV-014	3,273	P-012	14,753	RC-011	1,652
MV-015	1,927	P-014	2,436	RC-012	13,765
MV-016	979	P-015	1,585	RC-013	15,201
MV-017	2,936	P-016	2,659	RC-014	4,734
MV-018	12	P-017	1,177	RC-015	4,343
MV-019	2,165	P-018	3,140	RC-017	21
MV-020	208	P-019	1,416	RC-018	459
MV-021	278	P-020	1,769	RC-019	117
MV-022	1,223	P-021	345	RC-020	6
MV-023	6,169	P-022	771	RC-021	16
MV-024	4,863	P-023	365	RC-022	4,007
MV-025	2,477	P-024	2,972	RC-023	1,704
MV-026	3,059	P-025	2,107	RC-024	6,199
MV-027	799	P-026	26,370	RC-025	2,762
MV-028	1,331	P-027	1,754	RC-026	61
MV-029	8,411	P-028	21,768	RC-027	6,131
MV-030	2,539	P-030	15,048	RC-028	12
MV-031	1,621	P-031	1,110	RC-029	18
MV-032	3,517	P-032	1,427	RC-030	2,556
MV-033	1,652	P-033	56,890	RC-031	5,868
MV-034	1,590	P-034	6,429	RC-032	22,206
MV-035	765	P-035	592	RC-033	11,745
MV-036	828	P-036	7,001	RC-034	13,213

World Logistic Center

Cumulative Energy - Natural gas

Cumulative Natural Gas Consumption - Summary

Project ID	Annual MMBtu	Project ID	Annual MMBtu	Project ID	Annual MMBtu
MV-037	52,508	P-036	111	RC-035	84,877
MV-038	14,101	P-037	5,597	RC-035	278
MV-039	51,984	P-038	6,821	RC-035	1,509
MV-040	200	P-039	1,591	RC-036	14,314
MV-041	2,944	P-040	3,732	RC-037	17,189
MV-042	906	P-041	4,865	RC-038	3,702
MV-043	18,054	P-042	1,866	RC-039	1,193
MV-044	2,252	P-043	1,743	RD-001	2,508
MV-045	193	P-044	1,391	RD-002	1,682
MV-046	776	P-045	1,110	RD-003	3,150
MV-047	489	P-046	6,681	RD-004	2,049
MV-048	4,335	P-047	15,935	RD-005	1,016
MV-049	4,555	P-048	2,294	RD-006	107
MV-050	11,528	P-049	3,487	RD-007	284
MV-051	24,995	P-050	178	RD-008	1,184
MV-052	28,557	P-051	1,071	RD-009	97
MV-053	2,538	P-052	2,508	RD-010	4,719
MV-054	3,528	P-053	4,924	RD-011	123
MV-056	489	P-054	7,280	RD-012	1,221
MV-057	1,132	P-055	999	RD-013	2,056
MV-058	245	P-056	320	RD-014	1,567
MV-059	1,927	P-057	85	RD-015	859
MV-060	2,814	P-058	12,281	RD-016	1,451
MV-061	400	P-059	7,432	SB-001	1,247
MV-062	16,608	P-060	10	SB-002	636
MV-063	6,760	P-061	711	SB-003	1,205
MV-064	2,661	R-001	4,015	SB-004	1,579
MV-065	769	R-002	1,183	SB-005	572
MV-066	3,713	R-003	21,184	SB-006	1,102
MV-067	4,924	R-004	3,196	SB-007	1,040
MV-068	6,728	R-005	1,735	SB-008	1,223
MV-069	13,308	R-006	1,139	SJ-001	4
MV-070	3,565	R-007	125	SJ-002	9,818
MV-071	725	R-008	576	SJ-003	17,740
MV-072	355	R-009	19,486	SJ-004	18,749
MV-073	1,420	R-010	52	WLC-001	1,835
MV-074	2,944	R-011	995	***Total Cum.***	3,211,448
MV-075	22,754	R-012	136	***Net Project***	84,771
MV-076	692	R-013	92	***Total***	3,296,219
MV-077	17,317	R-014	9	SoCalGas	873,793,575
				%SoCalGas	0.38%

Source: ESA, 2019

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Climate Zone 10

		Electricity (kWhr/unit)			Natural Gas (kBtU/unit)	
		T24	NT24	Light	T24	NT24
BP	Office Park	3.07	2.60	4.24	2.92	0.000
HI	Heavy Industrial	2.20	5.02	2.93	15.36	17.130
LI	Light Industrial	2.20	5.02	2.93	15.36	17.130
MF	Multi-Family - Mid Rise Apartment	772.17	3054.10	741.44	8764.08	6030.000
MO	Medical Office	3.07	2.79	3.66	3.47	0.000
OG	General Office	3.07	2.79	3.66	3.47	0.000
RC	Retail Commercial	4.58	2.44	5.61	1.92	0.300
SF	Single Family Residential	951.67	6155.97	1608.84	24556.15	6030.000
SR	Senior Residential	877.14	3172.76	1001.10	9544.50	6030.000
WH	Warehouse - Unrefrigerated No Rail	0.37	0.82	1.17	2.00	0.030

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	anduse_Cod	Landuse_qty	kWh	kWh	kWh	kBTU	kBTU	Electricity (kWh)	NG (MMBtu)
B-001	SF	3,300.00	3,140,511	20,314,701	5,309,172	81,035,295	19,899,000	28,764,384	100,934
B-002	MF	571.00	440,909	1,743,891	423,362	5,004,290	3,443,130	2,608,162	8,447
B-003	SF	922.00	877,440	5,675,804	1,483,350	22,640,770	5,559,660	8,036,595	28,200
B-004	LI	1,734.00	3,814,800	8,704,680	5,080,620	26,634,240	29,703,420	17,600,100	56,338
B-005	HI	2,565.68	5,644,505	12,879,734	7,517,454	39,408,906	43,950,167	26,041,693	83,359
B-006	BP	1,853.25	5,689,482	4,818,454	7,857,786	5,411,494	0	18,365,722	5,411
B-007	SF	403.00	383,523	2,480,856	648,363	9,896,128	2,430,090	3,512,741	12,326
B-008	SF	648.00	616,682	3,989,069	1,042,528	15,912,385	3,907,440	5,648,279	19,820
B-009	SF	4,450.00	4,234,932	27,394,067	7,159,338	109,274,868	26,833,500	38,788,336	136,108
B-010	SF	95.00	90,409	584,817	152,840	2,332,834	572,850	828,066	2,906
B-011	RC	225.00	1,030,500	549,000	1,262,250	432,000	67,500	2,841,750	500
B-012	MF	279.00	215,435	852,094	206,862	2,445,178	1,682,370	1,274,391	4,128
B-013	SF	1,890.00	1,798,656	11,634,783	3,040,708	46,411,124	11,396,700	16,474,147	57,808
B-014	SF	700.00	666,169	4,309,179	1,126,188	17,189,305	4,221,000	6,101,536	21,410
C-001	RC	200.00	916,000	488,000	1,122,000	384,000	60,000	2,526,000	444
C-002	RC	1,000.00	4,580,000	2,440,000	5,610,000	1,920,000	300,000	12,630,000	2,220
C-002	BP	1,579.00	4,847,530	4,105,400	6,694,960	4,610,680	0	15,647,890	4,611
C-003	RC	72.70	332,966	177,388	407,847	139,584	21,810	918,201	161
H-001	SF	588.00	559,582	3,619,710	945,998	14,439,016	3,545,640	5,125,290	17,985
H-002	SF	440.00	418,735	2,708,627	707,890	10,804,706	2,653,200	3,835,251	13,458
H-003	SF	931.00	886,005	5,731,208	1,497,830	22,861,776	5,613,930	8,115,043	28,476
H-004	LI	734.98	1,616,965	3,689,620	2,153,503	11,289,354	12,590,276	7,460,088	23,880
H-004	BP	995.15	3,055,120	2,587,398	4,219,449	2,905,847	0	9,861,966	2,906

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
H-005	RC	20.91	95,762	51,017	117,298	40,145	6,273	264,078	46
H-006	RC	680.79	3,118,009	1,661,123	3,819,221	1,307,113	204,236	8,598,352	1,511
H-007	SR	358.00	314,016	1,135,848	358,394	3,416,931	2,158,740	1,808,258	5,576
H-008	SR	440.00	385,942	1,396,014	440,484	4,199,580	2,653,200	2,222,440	6,853
H-008	SF	145.00	137,992	892,616	233,282	3,560,642	874,350	1,263,890	4,435
H-009	SR	599.00	525,407	1,900,483	599,659	5,717,156	3,611,970	3,025,549	9,329
M-001	RC	10.00	45,800	24,400	56,100	19,200	3,000	126,300	22
M-001	OG	258.10	792,373	720,105	944,653	895,614	0	2,457,131	896
M-001	LI	42.22	92,888	211,954	123,710	648,530	723,263	428,553	1,372
M-001	HI	409.31	900,486	2,054,746	1,199,284	6,287,032	7,011,515	4,154,517	13,299
M-002	WH	4,525.00	1,674,250	3,710,500	5,294,250	9,050,000	135,750	10,679,000	9,186
M-002	OG	469.00	1,439,830	1,308,510	1,716,540	1,627,430	0	4,464,880	1,627
M-002	LI	487.80	1,073,160	2,448,756	1,429,254	7,492,608	8,356,014	4,951,170	15,849
M-003	WH	2,900.00	1,073,000	2,378,000	3,393,000	5,800,000	87,000	6,844,000	5,887
M-004	RC	108.90	498,762	265,716	610,929	209,088	32,670	1,375,407	242
M-005	WH	3,061.82	1,132,872	2,510,688	3,582,324	6,123,630	91,854	7,225,883	6,215
M-005	OG	232.76	714,558	649,386	851,883	807,660	0	2,215,828	808
M-005	LI	1,061.43	2,335,144	5,328,374	3,109,987	16,303,549	18,182,279	10,773,504	34,486
M-006	BP	219.35	673,398	570,304	930,035	640,496	0	2,173,737	640
M-007	WH	675.50	249,935	553,910	790,335	1,351,000	20,265	1,594,180	1,371
M-008	RC	625.00	2,862,500	1,525,000	3,506,250	1,200,000	187,500	7,893,750	1,388
M-008	MO	2,930.00	8,995,100	8,174,700	10,723,800	10,167,100	0	27,893,600	10,167
M-009	SF	135.00	128,475	831,056	217,193	3,315,080	814,050	1,176,725	4,129
M-010	WH	559.00	206,830	458,380	654,030	1,118,000	16,770	1,319,240	1,135
M-011	RC	67.00	306,860	163,480	375,870	128,640	20,100	846,210	149
MV-001	RC	304.50	1,394,610	742,980	1,708,245	584,640	91,350	3,845,835	676
MV-002	SF	262.00	249,338	1,612,864	421,516	6,433,711	1,579,860	2,283,718	8,014
MV-002	MF	216.00	166,789	659,686	160,151	1,893,041	1,302,480	986,625	3,196
MV-003	WH	1,901.00	703,370	1,558,820	2,224,170	3,802,000	57,030	4,486,360	3,859
MV-003	LI	367.00	807,400	1,842,340	1,075,310	5,637,120	6,286,710	3,725,050	11,924
MV-004	LI	937.26	2,061,972	4,705,045	2,746,172	14,396,314	16,055,264	9,513,189	30,452
MV-005	RC	116.36	532,929	283,918	652,780	223,411	34,908	1,469,627	258
MV-006	WH	750.00	277,500	615,000	877,500	1,500,000	22,500	1,770,000	1,523
MV-007	SF	31.00	29,502	190,835	49,874	761,241	186,930	270,211	948
MV-008	SF	58.00	55,197	357,046	93,313	1,424,257	349,740	505,556	1,774
MV-009	SF	11.00	10,468	67,716	17,697	270,118	66,330	95,881	336
MV-010	SF	47.00	44,728	289,331	75,615	1,154,139	283,410	409,675	1,438
MV-011	SF	24.00	22,840	147,743	38,612	589,348	144,720	209,196	734
MV-012	MO	80.00	245,600	223,200	292,800	277,600	0	761,600	278
MV-013	OG	30.00	92,100	83,700	109,800	104,100	0	285,600	104
MV-014	SF	107.00	101,829	658,689	172,146	2,627,508	645,210	932,663	3,273

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
MV-015	SF	63.00	59,955	387,826	101,357	1,547,037	379,890	549,138	1,927
MV-016	SF	32.00	30,453	196,991	51,483	785,797	192,960	278,927	979
MV-017	SF	96.00	91,360	590,973	154,449	2,357,390	578,880	836,782	2,936
MV-018	RC	5.50	25,190	13,420	30,855	10,560	1,650	69,465	12
MV-019	SR	139.00	121,922	441,014	139,153	1,326,686	838,170	702,089	2,165
MV-020	RC	93.79	429,549	228,843	526,151	180,073	28,136	1,184,542	208
MV-021	MO	80.00	245,600	223,200	292,800	277,600	0	761,600	278
MV-022	SF	40.00	38,067	246,239	64,354	982,246	241,200	348,659	1,223
MV-023	MF	417.00	321,995	1,273,560	309,180	3,654,621	2,514,510	1,904,735	6,169
MV-024	SF	159.00	151,316	978,799	255,806	3,904,428	958,770	1,385,920	4,863
MV-025	SF	81.00	77,085	498,634	130,316	1,989,048	488,430	706,035	2,477
MV-026	SF	100.00	95,167	615,597	160,884	2,455,615	603,000	871,648	3,059
MV-027	MF	54.00	41,697	164,921	40,038	473,260	325,620	246,656	799
MV-028	MF	90.00	69,495	274,869	66,730	788,767	542,700	411,094	1,331
MV-029	SF	275.00	261,709	1,692,892	442,431	6,752,941	1,658,250	2,397,032	8,411
MV-030	SF	83.00	78,989	510,946	133,534	2,038,160	500,490	723,468	2,539
MV-031	SF	53.00	50,439	326,266	85,269	1,301,476	319,590	461,973	1,621
MV-032	SF	115.00	109,442	707,937	185,017	2,823,957	693,450	1,002,395	3,517
MV-033	SF	54.00	51,390	332,422	86,877	1,326,032	325,620	470,690	1,652
MV-034	SF	52.00	49,487	320,110	83,660	1,276,920	313,560	453,257	1,590
MV-035	SF	25.00	23,792	153,899	40,221	613,904	150,750	217,912	765
MV-036	MF	56.00	43,242	171,030	41,521	490,788	337,680	255,792	828
MV-037	HI	1,616.13	3,555,493	8,112,988	4,735,270	24,823,803	27,684,358	16,403,750	52,508
MV-038	LI	434.00	954,800	2,178,680	1,271,620	6,666,240	7,434,420	4,405,100	14,101
MV-039	LI	1,600.00	3,520,000	8,032,000	4,688,000	24,576,000	27,408,000	16,240,000	51,984
MV-040	WH	98.40	36,406	80,684	115,122	196,790	2,952	232,212	200
MV-041	WH	1,450.00	536,500	1,189,000	1,696,500	2,900,000	43,500	3,422,000	2,944
MV-042	WH	446.35	165,150	366,007	522,230	892,700	13,391	1,053,386	906
MV-043	HI	555.67	1,222,474	2,789,463	1,628,113	8,535,091	9,518,627	5,640,051	18,054
MV-044	WH	1,109.38	410,470	909,690	1,297,972	2,218,756	33,281	2,618,132	2,252
MV-045	RC	87.12	399,010	212,573	488,743	167,270	26,136	1,100,326	193
MV-046	WH	382.28	141,444	313,470	447,268	764,560	11,468	902,181	776
MV-047	SF	16.00	15,227	98,496	25,741	392,898	96,480	139,464	489
MV-048	BP	1,484.50	4,557,406	3,859,692	6,294,267	4,334,731	0	14,711,365	4,335
MV-049	BP	1,560.05	4,789,341	4,056,120	6,614,595	4,555,334	0	15,460,056	4,555
MV-050	LI	354.81	780,582	1,781,146	1,039,593	5,449,882	6,077,895	3,601,322	11,528
MV-051	LI	769.32	1,692,504	3,861,986	2,254,108	11,816,755	13,178,452	7,808,598	24,995
MV-052	LI	878.96	1,933,712	4,412,379	2,575,353	13,500,826	15,056,585	8,921,444	28,557
MV-053	WH	1,250.00	462,500	1,025,000	1,462,500	2,500,000	37,500	2,950,000	2,538
MV-054	WH	1,738.00	643,060	1,425,160	2,033,460	3,476,000	52,140	4,101,680	3,528
MV-056	SF	16.00	15,227	98,496	25,741	392,898	96,480	139,464	489

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
MV-057	SF	37.00	35,212	227,771	59,527	908,578	223,110	322,510	1,132
MV-058	SF	8.00	7,613	49,248	12,871	196,449	48,240	69,732	245
MV-059	SF	63.00	59,955	387,826	101,357	1,547,037	379,890	549,138	1,927
MV-060	SF	92.00	87,554	566,349	148,013	2,259,166	554,760	801,916	2,814
MV-061	RC	180.00	824,400	439,200	1,009,800	345,600	54,000	2,273,400	400
MV-062	SF	543.00	516,757	3,342,692	873,600	13,333,989	3,274,290	4,733,049	16,608
MV-063	SF	221.00	210,319	1,360,469	355,554	5,426,909	1,332,630	1,926,342	6,760
MV-064	SF	87.00	82,795	535,569	139,969	2,136,385	524,610	758,334	2,661
MV-065	MF	52.00	40,153	158,813	38,555	455,732	313,560	237,521	769
MV-066	MF	251.00	193,815	766,579	186,101	2,199,784	1,513,530	1,146,495	3,713
MV-067	SF	161.00	153,219	991,111	259,023	3,953,540	970,830	1,403,353	4,924
MV-068	HI	207.09	455,589	1,039,572	606,762	3,180,841	3,547,383	2,101,923	6,728
MV-069	HI	409.60	901,116	2,056,182	1,200,122	6,291,425	7,016,414	4,157,420	13,308
MV-070	MF	241.00	186,093	736,038	178,687	2,112,143	1,453,230	1,100,818	3,565
MV-071	MF	49.00	37,836	149,651	36,331	429,440	295,470	223,818	725
MV-072	MF	24.00	18,532	73,298	17,795	210,338	144,720	109,625	355
MV-073	MF	96.00	74,128	293,194	71,178	841,352	578,880	438,500	1,420
MV-074	SR	189.00	165,779	599,652	189,208	1,803,911	1,139,670	954,639	2,944
MV-075	SR	1,461.00	1,281,502	4,635,402	1,462,607	13,944,515	8,809,830	7,379,511	22,754
MV-076	RC	311.63	1,427,279	760,385	1,748,261	598,335	93,490	3,935,925	692
MV-077	LI	533.00	1,172,600	2,675,660	1,561,690	8,186,880	9,130,290	5,409,950	17,317
MV-078	LI	520.00	1,144,000	2,610,400	1,523,600	7,987,200	8,907,600	5,278,000	16,895
MV-079	WH	367.00	135,790	300,940	429,390	734,000	11,010	866,120	745
MV-080	RC	44.30	202,894	108,092	248,523	85,056	13,290	559,509	98
MV-081	WH	700.00	259,000	574,000	819,000	1,400,000	21,000	1,652,000	1,421
MV-082	WH	500.00	185,000	410,000	585,000	1,000,000	15,000	1,180,000	1,015
MV-083	LI	356.00	783,200	1,787,120	1,043,080	5,468,160	6,098,280	3,613,400	11,566
MV-084	LI	99.98	219,952	501,890	292,936	1,535,662	1,712,623	1,014,777	3,248
MV-085	RC	140.00	641,200	341,600	785,400	268,800	42,000	1,768,200	311
MV-086	SF	71.00	67,569	437,074	114,228	1,743,487	428,130	618,870	2,172
MV-087	MF	60.00	46,330	183,246	44,486	525,845	361,800	274,063	888
MV-088	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-089	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-090	RC	7.31	33,480	17,836	41,009	14,035	2,193	92,325	16
MV-091	SF	87.00	82,795	535,569	139,969	2,136,385	524,610	758,334	2,661
MV-093	MF	112.00	86,483	342,059	83,041	981,577	675,360	511,584	1,657
MV-094	MF	266.00	205,397	812,391	197,223	2,331,245	1,603,980	1,215,011	3,935
MV-095	RC	175.00	801,500	427,000	981,750	336,000	52,500	2,210,250	389
MV-096	SF	78.00	74,230	480,166	125,490	1,915,380	470,340	679,885	2,386
MV-097	SF	214.00	203,657	1,317,378	344,292	5,255,016	1,290,420	1,865,327	6,545
MV-098	SF	16.00	15,227	98,496	25,741	392,898	96,480	139,464	489

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
MV-099	MF	96.00	74,128	293,194	71,178	841,352	578,880	438,500	1,420
MV-100	MF	194.00	149,801	592,495	143,839	1,700,232	1,169,820	886,136	2,870
MV-101	RC	9.00	41,220	21,960	50,490	17,280	2,700	113,670	20
MV-102	OG	84.00	257,880	234,360	307,440	291,480	0	799,680	291
MV-103	LI	184.00	404,800	923,680	539,120	2,826,240	3,151,920	1,867,600	5,978
MV-104	WH	373.03	138,021	305,885	436,445	746,060	11,191	880,351	757
MV-105	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-106	MF	12.00	9,266	36,649	8,897	105,169	72,360	54,813	178
MV-107	SF	9.00	8,565	55,404	14,480	221,005	54,270	78,448	275
MV-108	RC	2.97	13,616	7,254	16,679	5,708	892	37,549	7
MV-109	SF	1,105.00	1,051,595	6,802,347	1,777,768	27,134,546	6,663,150	9,631,710	33,798
MV-110	MF	60.00	46,330	183,246	44,486	525,845	361,800	274,063	888
MV-111	MF	16.00	12,355	48,866	11,863	140,225	96,480	73,083	237
MV-112	MF	15.00	11,583	45,812	11,122	131,461	90,450	68,516	222
MV-113	SF	144.00	137,040	886,460	231,673	3,536,086	868,320	1,255,173	4,404
MV-114	RC	5.70	26,106	13,908	31,977	10,944	1,710	71,991	13
MV-115	OG	0.02	71	64	84	80	0	219	0
MV-116	SF	25.00	23,792	153,899	40,221	613,904	150,750	217,912	765
MV-117	OG	52.00	159,640	145,080	190,320	180,440	0	495,040	180
MV-118	SF	9.00	8,565	55,404	14,480	221,005	54,270	78,448	275
MV-119	SF	35.00	33,308	215,459	56,309	859,465	211,050	305,077	1,071
MV-120	RC	189.52	868,002	462,429	1,063,207	363,878	56,856	2,393,638	421
MV-121	RC	4.35	19,928	10,616	24,409	8,354	1,305	54,953	10
MV-123	RC	14.00	64,120	34,160	78,540	26,880	4,200	176,820	31
MV-124	RC	140.00	641,200	341,600	785,400	268,800	42,000	1,768,200	311
MV-125	MF	24.00	18,532	73,298	17,795	210,338	144,720	109,625	355
MV-126	SF	235.00	223,642	1,446,653	378,077	5,770,695	1,417,050	2,048,373	7,188
MV-127	WH	340.01	125,804	278,808	397,812	680,020	10,200	802,424	690
MV-129	LI	1,580.00	3,476,000	7,931,600	4,629,400	24,268,800	27,065,400	16,037,000	51,334
MV-130	WH	221.86	82,088	181,924	259,575	443,718	6,656	523,587	450
MV-131	WH	1,500.00	555,000	1,230,000	1,755,000	3,000,000	45,000	3,540,000	3,045
MV-132	WH	1,100.00	407,000	902,000	1,287,000	2,200,000	33,000	2,596,000	2,233
P-001	SF	137.00	130,379	843,368	220,411	3,364,193	826,110	1,194,158	4,190
P-002	WH	600.00	222,000	492,000	702,000	1,200,000	18,000	1,416,000	1,218
P-003	WH	462.30	171,051	379,086	540,891	924,600	13,869	1,091,028	938
P-004	LI	172.00	378,400	863,440	503,960	2,641,920	2,946,360	1,745,800	5,588
P-005	WH	460.00	170,200	377,200	538,200	920,000	13,800	1,085,600	934
P-006	LI	600.00	1,320,000	3,012,000	1,758,000	9,216,000	10,278,000	6,090,000	19,494
P-007	LI	1,189.86	2,617,692	5,973,097	3,486,290	18,276,250	20,382,302	12,077,079	38,659
P-008	LI	241.00	530,200	1,209,820	706,130	3,701,760	4,128,330	2,446,150	7,830
P-009	HI	642.00	1,412,400	3,222,840	1,881,060	9,861,120	10,997,460	6,516,300	20,859

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
P-010	WH	1,700.00	629,000	1,394,000	1,989,000	3,400,000	51,000	4,012,000	3,451
P-011	HI	1,224.99	2,694,985	6,149,465	3,589,229	18,815,892	20,984,130	12,433,679	39,800
P-012	LI	454.09	998,994	2,279,522	1,330,478	6,974,792	7,778,527	4,608,993	14,753
P-014	WH	1,200.00	444,000	984,000	1,404,000	2,400,000	36,000	2,832,000	2,436
P-015	WH	780.82	288,902	640,268	913,554	1,561,630	23,424	1,842,723	1,585
P-016	WH	1,310.00	484,700	1,074,200	1,532,700	2,620,000	39,300	3,091,600	2,659
P-017	WH	580.00	214,600	475,600	678,600	1,160,000	17,400	1,368,800	1,177
P-018	WH	1,547.00	572,390	1,268,540	1,809,990	3,094,000	46,410	3,650,920	3,140
P-019	WH	697.60	258,112	572,032	816,192	1,395,200	20,928	1,646,336	1,416
P-020	WH	871.50	322,455	714,630	1,019,655	1,743,000	26,145	2,056,740	1,769
P-021	WH	170.00	62,900	139,400	198,900	340,000	5,100	401,200	345
P-022	WH	380.00	140,600	311,600	444,600	760,000	11,400	896,800	771
P-023	WH	180.00	66,600	147,600	210,600	360,000	5,400	424,800	365
P-024	WH	1,464.00	541,680	1,200,480	1,712,880	2,928,000	43,920	3,455,040	2,972
P-025	WH	1,038.00	384,060	851,160	1,214,460	2,076,000	31,140	2,449,680	2,107
P-026	LI	811.62	1,785,564	4,074,332	2,378,047	12,466,483	13,903,051	8,237,943	26,370
P-027	WH	864.00	319,680	708,480	1,010,880	1,728,000	25,920	2,039,040	1,754
P-028	LI	670.00	1,474,000	3,363,400	1,963,100	10,291,200	11,477,100	6,800,500	21,768
P-030	SF	492.00	468,222	3,028,737	791,549	12,081,626	2,966,760	4,288,508	15,048
P-031	MF	75.00	57,913	229,058	55,608	657,306	452,250	342,578	1,110
P-032	RC	643.00	2,944,940	1,568,920	3,607,230	1,234,560	192,900	8,121,090	1,427
P-033	SF	1,860.00	1,770,106	11,450,104	2,992,442	45,674,439	11,215,800	16,212,653	56,890
P-034	WH	3,166.86	1,171,737	2,596,823	3,705,223	6,333,714	95,006	7,473,783	6,429
P-035	MF	40.00	30,887	122,164	29,658	350,563	241,200	182,708	592
P-036	WH	3,448.73	1,276,032	2,827,962	4,035,019	6,897,468	103,462	8,139,012	7,001
P-036	RC	50.00	229,000	122,000	280,500	96,000	15,000	631,500	111
P-037	SF	183.00	174,156	1,126,543	294,418	4,493,775	1,103,490	1,595,116	5,597
P-038	SF	223.00	212,222	1,372,781	358,771	5,476,021	1,344,690	1,943,775	6,821
P-039	WH	783.70	289,969	642,634	916,929	1,567,400	23,511	1,849,532	1,591
P-040	SF	122.00	116,104	751,028	196,278	2,995,850	735,660	1,063,411	3,732
P-041	LI	149.74	329,424	751,685	438,732	2,299,976	2,565,012	1,519,841	4,865
P-042	SF	61.00	58,052	375,514	98,139	1,497,925	367,830	531,705	1,866
P-043	SF	57.00	54,245	350,890	91,704	1,399,701	343,710	496,839	1,743
P-044	MF	94.00	72,584	287,085	69,695	823,824	566,820	429,365	1,391
P-045	MF	75.00	57,913	229,058	55,608	657,306	452,250	342,578	1,110
P-046	SR	429.00	376,293	1,361,114	429,472	4,094,591	2,586,870	2,166,879	6,681
P-047	SF	521.00	495,820	3,207,260	838,206	12,793,754	3,141,630	4,541,286	15,935
P-048	SF	75.00	71,375	461,698	120,663	1,841,711	452,250	653,736	2,294
P-049	SF	114.00	108,490	701,781	183,408	2,799,401	687,420	993,679	3,487
P-050	RC	80.00	366,400	195,200	448,800	153,600	24,000	1,010,400	178
P-051	SF	35.00	33,308	215,459	56,309	859,465	211,050	305,077	1,071

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
P-052	SF	82.00	78,037	504,790	131,925	2,013,604	494,460	714,751	2,508
P-053	SF	161.00	153,219	991,111	259,023	3,953,540	970,830	1,403,353	4,924
P-054	SF	238.00	226,497	1,465,121	382,904	5,844,364	1,435,140	2,074,522	7,280
P-055	RC	450.00	2,061,000	1,098,000	2,524,500	864,000	135,000	5,683,500	999
P-056	LI	9.85	21,679	49,467	28,872	151,357	168,799	100,018	320
P-057	WH	41.65	15,411	34,153	48,731	83,300	1,250	98,294	85
P-058	HI	378.00	831,600	1,897,560	1,107,540	5,806,080	6,475,140	3,836,700	12,281
P-059	SF	243.00	231,256	1,495,901	390,948	5,967,144	1,465,290	2,118,105	7,432
P-060	RC	4.50	20,610	10,980	25,245	8,640	1,350	56,835	10
P-061	WH	350.00	129,500	287,000	409,500	700,000	10,500	826,000	711
R-001	BP	1,375.17	4,221,769	3,575,439	5,830,717	4,015,493	0	13,627,925	4,015
R-002	WH	582.77	215,626	477,873	681,843	1,165,544	17,483	1,375,342	1,183
R-003	LI	652.02	1,434,440	3,273,130	1,910,413	10,014,996	11,169,068	6,617,983	21,184
R-004	MF	216.00	166,789	659,686	160,151	1,893,041	1,302,480	986,625	3,196
R-005	MO	500.00	1,535,000	1,395,000	1,830,000	1,735,000	0	4,760,000	1,735
R-006	MF	77.00	59,457	235,166	57,091	674,834	464,310	351,714	1,139
R-007	RC	56.10	256,943	136,886	314,727	107,714	16,830	708,556	125
R-008	SR	37.00	32,454	117,392	37,041	353,147	223,110	186,887	576
R-009	RC	8,777.62	40,201,494	21,417,390	49,242,441	16,853,028	2,633,286	110,861,325	19,486
R-010	RC	23.57	107,928	57,499	132,200	45,245	7,070	297,626	52
R-011	BP	340.66	1,045,816	885,707	1,444,384	994,717	0	3,375,907	995
R-012	RC	61.38	281,110	149,762	344,329	117,845	18,413	775,201	136
R-013	SF	3.00	2,855	18,468	4,827	73,668	18,090	26,149	92
R-014	RC	3.86	17,670	9,414	21,643	7,407	1,157	48,727	9
R-015	SF	171.70	163,398	1,056,955	276,231	4,216,193	1,035,327	1,496,585	5,252
R-016	SF	1.53	1,452	9,392	2,455	37,465	9,200	13,299	47
R-017	MF	275.00	212,347	839,878	203,896	2,410,122	1,658,250	1,256,120	4,068
R-018	LI	9,037.83	19,883,223	45,369,901	26,480,838	138,821,050	154,818,007	91,733,962	293,639
R-019	MF	55.00	42,469	167,976	40,779	482,024	331,650	251,224	814
R-020	WH	1,461.45	540,736	1,198,388	1,709,895	2,922,898	43,843	3,449,020	2,967
R-021	SF	15.00	14,275	92,340	24,133	368,342	90,450	130,747	459
R-022	SF	9.00	8,565	55,404	14,480	221,005	54,270	78,448	275
R-023	RC	8.04	36,819	19,615	45,099	15,435	2,412	101,533	18
R-024	SF	5,000.00	4,758,350	30,779,850	8,044,200	122,780,750	30,150,000	43,582,400	152,931
R-025	MF	208.00	160,611	635,253	154,220	1,822,929	1,254,240	950,084	3,077
R-026	RC	297.95	1,364,613	726,999	1,671,502	572,065	89,385	3,763,114	661
R-026	LI	943.51	2,075,721	4,736,418	2,764,483	14,492,307	16,162,319	9,576,622	30,655
R-026	BP	347.61	1,067,159	903,783	1,473,861	1,015,018	0	3,444,803	1,015
R-027	RC	3.62	16,570	8,828	20,297	6,947	1,085	45,695	8
R-028	SR	134.00	117,537	425,150	134,147	1,278,963	808,020	676,834	2,087
R-029	RC	3.80	17,381	9,260	21,290	7,286	1,139	47,931	8

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
R-030	RC	208.57	955,229	508,899	1,170,051	400,445	62,570	2,634,179	463
R-031	MF	36.00	27,798	109,948	26,692	315,507	217,080	164,438	533
R-032	RC	22.27	102,006	54,344	124,946	42,762	6,682	281,295	49
R-033	MF	30.00	23,165	91,623	22,243	262,922	180,900	137,031	444
R-034	OG	12.17	37,350	33,943	44,528	42,216	0	115,820	42
R-035	MF	102.00	78,761	311,518	75,627	893,936	615,060	465,906	1,509
R-036	MF	62.00	47,875	189,354	45,969	543,373	373,860	283,198	917
R-037	RC	6.00	27,480	14,640	33,660	11,520	1,800	75,780	13
R-038	RC	3.50	16,030	8,540	19,635	6,720	1,050	44,205	8
R-039	SF	402.00	382,571	2,474,700	646,754	9,871,572	2,424,060	3,504,025	12,296
R-040	RC	2.40	10,992	5,856	13,464	4,608	720	30,312	5
R-041	OG	23.12	70,991	64,516	84,634	80,240	0	220,140	80
R-042	SF	598.00	569,099	3,681,270	962,086	14,684,578	3,605,940	5,212,455	18,291
R-043	SF	50.00	47,584	307,799	80,442	1,227,808	301,500	435,824	1,529
R-044	RC	4.00	18,320	9,760	22,440	7,680	1,200	50,520	9
R-045	OG	37.94	116,473	105,850	138,857	131,648	0	361,179	132
R-046	SF	35.84	34,111	220,648	57,666	880,166	216,133	312,425	1,096
R-047	WH	107.73	39,861	88,340	126,046	215,464	3,232	254,248	219
R-048	RC	75.30	344,874	183,732	422,433	144,576	22,590	951,039	167
R-049	SR	310.00	271,913	983,556	310,341	2,958,795	1,869,300	1,565,810	4,828
R-050	SF	3.83	3,647	23,593	6,166	94,111	23,110	33,406	117
R-051	RC	2.36	10,813	5,761	13,245	4,533	708	29,819	5
R-052	SF	32.00	30,453	196,991	51,483	785,797	192,960	278,927	979
R-053	SF	29.00	27,598	178,523	46,656	712,128	174,870	252,778	887
R-054	SF	25.00	23,792	153,899	40,221	613,904	150,750	217,912	765
R-055	SF	20.00	19,033	123,119	32,177	491,123	120,600	174,330	612
R-056	OG	131.00	402,170	365,490	479,460	454,570	0	1,247,120	455
R-057	LI	171.62	377,555	861,512	502,835	2,636,022	2,939,782	1,741,902	5,576
R-058	RC	2.75	12,577	6,700	15,405	5,272	824	34,682	6
R-059	RC	4.05	18,549	9,882	22,721	7,776	1,215	51,152	9
R-060	BP	101.58	311,851	264,108	430,699	296,614	0	1,006,658	297
R-061	RC	425.45	1,948,547	1,038,091	2,386,758	816,858	127,634	5,373,396	944
R-062	RC	1.83	8,386	4,468	10,272	3,516	549	23,126	4
R-063	MF	21.00	16,216	64,136	15,570	184,046	126,630	95,922	311
R-064	SF	5.00	4,758	30,780	8,044	122,781	30,150	43,582	153
R-065	SF	62.00	59,004	381,670	99,748	1,522,481	373,860	540,422	1,896
R-066	RC	6.15	28,167	15,006	34,502	11,808	1,845	77,675	14
RC-001	SF	1,251.00	1,190,539	7,701,118	2,012,659	30,719,744	7,543,530	10,904,316	38,263
RC-002	SF	2,000.00	1,903,340	12,311,940	3,217,680	49,112,300	12,060,000	17,432,960	61,172
RC-003	SF	3,412.00	3,247,098	21,004,170	5,489,362	83,785,584	20,574,360	29,740,630	104,360
RC-005	SF	750.00	713,753	4,616,978	1,206,630	18,417,113	4,522,500	6,537,360	22,940

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity			Natural Gas		Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
RC-006	BP	600.00	1,842,000	1,560,000	2,544,000	1,752,000	0	5,946,000	1,752
RC-007	WH	1,586.65	587,059	1,301,049	1,856,375	3,173,290	47,599	3,744,482	3,221
RC-009	OG	34.00	104,380	94,860	124,440	117,980	0	323,680	118
RC-009	HI	1,172.71	2,579,962	5,887,004	3,436,040	18,012,826	20,088,522	11,903,007	38,101
RC-010	LI	6,200.00	13,640,000	31,124,000	18,166,000	95,232,000	106,206,000	62,930,000	201,438
RC-011	WH	814.00	301,180	667,480	952,380	1,628,000	24,420	1,921,040	1,652
RC-012	LI	423.67	932,063	2,126,798	1,241,338	6,507,494	7,257,381	4,300,200	13,765
RC-013	SF	497.00	472,980	3,059,517	799,593	12,204,407	2,996,910	4,332,091	15,201
RC-014	MF	320.00	247,094	977,312	237,261	2,804,506	1,929,600	1,461,667	4,734
RC-015	SF	142.00	135,137	874,148	228,455	3,486,973	856,260	1,237,740	4,343
RC-017	RC	9.28	42,502	22,643	52,061	17,818	2,784	117,206	21
RC-018	SF	15.00	14,275	92,340	24,133	368,342	90,450	130,747	459
RC-019	RC	52.80	241,815	128,827	296,197	101,372	15,839	666,839	117
RC-020	RC	2.80	12,824	6,832	15,708	5,376	840	35,364	6
RC-021	WH	8.00	2,960	6,560	9,360	16,000	240	18,880	16
RC-022	SF	131.00	124,669	806,432	210,758	3,216,856	789,930	1,141,859	4,007
RC-023	LI	52.45	115,390	263,299	153,679	805,632	898,469	532,368	1,704
RC-024	LI	190.80	419,764	957,826	559,050	2,930,719	3,268,438	1,936,640	6,199
RC-025	LI	85.00	187,000	426,700	249,050	1,305,600	1,456,050	862,750	2,762
RC-026	SF	2.00	1,903	12,312	3,218	49,112	12,060	17,433	61
RC-027	LI	188.70	415,144	947,284	552,897	2,898,461	3,232,464	1,915,324	6,131
RC-028	RC	5.60	25,648	13,664	31,416	10,752	1,680	70,728	12
RC-029	RC	8.14	37,290	19,866	45,677	15,633	2,443	102,833	18
RC-030	WH	1,259.05	465,849	1,032,421	1,473,089	2,518,100	37,772	2,971,358	2,556
RC-031	LI	180.60	397,320	906,612	529,158	2,774,016	3,093,678	1,833,090	5,868
RC-032	SF	726.00	690,912	4,469,234	1,168,018	17,827,765	4,377,780	6,328,164	22,206
RC-033	SF	384.00	365,441	2,363,892	617,795	9,429,562	2,315,520	3,347,128	11,745
RC-034	SF	432.00	411,121	2,659,379	695,019	10,608,257	2,604,960	3,765,519	13,213
RC-035	SF	2,775.00	2,640,884	17,082,817	4,464,531	68,143,316	16,733,250	24,188,232	84,877
RC-035	OG	80.00	245,600	223,200	292,800	277,600	0	761,600	278
RC-035	MF	102.00	78,761	311,518	75,627	893,936	615,060	465,906	1,509
RC-036	SF	468.00	445,382	2,880,994	752,937	11,492,278	2,822,040	4,079,313	14,314
RC-037	SF	562.00	534,839	3,459,655	904,168	13,800,556	3,388,860	4,898,662	17,189
RC-038	WH	1,823.76	674,791	1,495,483	2,133,799	3,647,520	54,713	4,304,074	3,702
RC-039	SF	39.00	37,115	240,083	62,745	957,690	235,170	339,943	1,193
RD-001	SF	82.00	78,037	504,790	131,925	2,013,604	494,460	714,751	2,508
RD-002	SF	55.00	52,342	338,578	88,486	1,350,588	331,650	479,406	1,682
RD-003	SF	103.00	98,022	634,065	165,711	2,529,283	621,090	897,797	3,150
RD-004	SF	67.00	63,762	412,450	107,792	1,645,262	404,010	584,004	2,049
RD-005	WH	500.60	185,223	410,494	585,704	1,001,204	15,018	1,181,421	1,016
RD-006	RC	48.22	220,866	117,667	270,537	92,590	14,467	609,069	107

World Logistic Center
Cumulative Energy - Electricity Natural Gas

Energy Consumption - Electricity & Natural Gas

		9,037,829	Electricity		Natural Gas			Total	
Project ID	**anduse_Cod**	**Landuse_qty**	**kWh**	**kWh**	**kWh**	**kBTU**	**kBTU**	**Electricity (kWh)**	**NG (MMBtu)**
RD-007	RC	127.75	585,077	311,700	716,655	245,272	38,324	1,613,432	284
RD-008	MF	80.00	61,774	244,328	59,315	701,126	482,400	365,417	1,184
RD-009	RC	43.80	200,613	106,877	245,729	84,100	13,141	553,219	97
RD-010	LI	145.26	319,561	729,180	425,597	2,231,117	2,488,218	1,474,338	4,719
RD-011	RC	55.47	254,030	135,335	311,159	106,493	16,640	700,523	123
RD-012	WH	601.29	222,476	493,055	703,506	1,202,574	18,039	1,419,037	1,221
RD-013	WH	1,013.00	374,810	830,660	1,185,210	2,026,000	30,390	2,390,680	2,056
RD-014	WH	772.00	285,640	633,040	903,240	1,544,000	23,160	1,821,920	1,567
RD-015	WH	423.00	156,510	346,860	494,910	846,000	12,690	998,280	859
RD-016	WH	714.73	264,451	586,081	836,238	1,429,466	21,442	1,686,770	1,451
SB-001	WH	614.33	227,301	503,749	718,764	1,228,656	18,430	1,449,814	1,247
SB-002	WH	313.47	115,984	257,045	366,760	626,940	9,404	739,789	636
SB-003	WH	593.56	219,618	486,722	694,469	1,187,126	17,807	1,400,809	1,205
SB-004	WH	777.62	287,719	637,648	909,815	1,555,240	23,329	1,835,183	1,579
SB-005	WH	282.00	104,340	231,240	329,940	564,000	8,460	665,520	572
SB-006	WH	542.98	200,901	445,241	635,283	1,085,954	16,289	1,281,426	1,102
SB-007	SF	34.00	32,356,780	209,302,980	54,700,560	834,909	205,020	296,360,320	1,040
SB-008	SF	40.00	38,067	246,239	64,354	982,246	241,200	348,659	1,223
SJ-001	RC	1,678.24	7,686,361	4,094,917	9,414,954	3,222	503	21,196,232	4
SJ-002	SF	321.00	305,486	1,976,066	516,438	7,882,524	1,935,630	2,797,990	9,818
SJ-003	SF	580.00	551,969	3,570,463	933,127	14,242,567	3,497,400	5,055,558	17,740
SJ-004	SF	613.00	583,374	3,773,610	986,219	15,052,920	3,696,390	5,343,202	18,749
WLC-001	SF	60.00	57,100	369,358	96,530	1,473,369	361,800	522,989	1,835

World Logistic Center
Cumulative Energy - Electricity Natural Gas

		Water Usage (gal/ unit)	
		Indoor	Outdoor
BP	Office Park	177,734	108,937
HI	Heavy Industrial	231,250	0
LI	Light Industrial	231,250	0
MF	Multi-Family - Mid Rise Apartment	65,154	41,075
MO	Medical Office	125,481	23,901
OG	General Office	177,734	108,934
RC	Retail Commercial	74,073	45,399
SF	Single Family Residential	65,154	41,075
SR	Senior Residential	65,154	41,075
WH	Warehouse - Unrefrigerated No Rail	231,250	0

Electricity Intensity Rates (kWhr/Million Gallons)			
Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
9727	111	1272	1911

Energy Cons **Energy Consumption - Electricity from Potable Water Use**

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
B-001	215,008,200	135,547,500	350.5557	215.0082	3,409,855	38,912	445,907	410,881
B-002	37,202,934	23,453,825	60.656759	37.202934	590,008	6,733	77,155	71,095
B-003	60,071,988	37,871,150	97.943138	60.071988	952,693	10,872	124,584	114,798
B-004	400,987,500	0	400.9875	400.9875	3,900,405	44,510	510,056	766,287
B-005	593,314,425	0	593.314425	593.314425	5,771,169	65,858	754,696	1,133,824
B-006	329,385,800	201,887,657	531.2734573	329.3858	5,167,697	58,971	675,780	629,456
B-007	26,257,062	16,553,225	42.810287	26.257062	416,416	4,752	54,455	50,177
B-008	42,219,792	26,616,600	68.836392	42.219792	669,572	7,641	87,560	80,682
B-009	289,935,300	182,783,750	472.71905	289.9353	4,598,138	52,472	601,299	554,066
B-010	6,189,630	3,902,125	10.091755	6.18963	98,163	1,120	12,837	11,828
B-011	16,666,425	10,214,775	26.8812	16.666425	261,473	2,984	34,193	31,850
B-012	18,177,966	11,459,925	29.637891	18.177966	288,288	3,290	37,699	34,738
B-013	123,141,060	77,631,750	200.77281	123.14106	1,952,917	22,286	255,383	235,323
B-014	45,607,800	28,752,500	74.3603	45.6078	723,303	8,254	94,586	87,157
C-001	14,814,600	9,079,800	23.8944	14.8146	232,421	2,652	30,394	28,311
C-002	74,073,000	45,399,000	119.472	74.073	1,162,104	13,261	151,968	141,554
C-002	280,641,986	172,011,523	452.653509	280.641986	4,402,961	50,245	575,775	536,307
C-003	5,385,107	3,300,507	8.6856144	5.3851071	84,485	964	11,048	10,291
H-001	38,310,552	24,152,100	62.462652	38.310552	607,574	6,933	79,452	73,211
H-002	28,667,760	18,073,000	46.74076	28.66776	454,647	5,188	59,454	54,784
H-003	60,658,374	38,240,825	98.899199	60.658374	961,993	10,978	125,800	115,918
H-004	169,965,050	0	169.96505	169.96505	1,653,250	18,866	216,196	324,803
H-004	176,872,523	108,408,982	285.2815057	176.8725233	2,774,933	31,666	362,878	338,003

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
H-005	1,548,778	949,239	2.498016154	1.548777542	24,298	277	3,177	2,960
H-006	50,428,010	30,907,094	81.33510394	50.42800952	791,147	9,028	103,458	96,368
H-007	23,325,132	14,704,850	38.029982	23.325132	369,918	4,221	48,374	44,574
H-008	28,667,760	18,073,000	46.74076	28.66776	454,647	5,188	59,454	54,784
H-008	9,447,330	5,955,875	15.403205	9.44733	149,827	1,710	19,593	18,054
H-009	39,027,246	24,603,925	63.631171	39.027246	618,940	7,063	80,939	74,581
M-001	740,730	453,990	1.19472	0.74073	11,621	133	1,520	1,416
M-001	45,873,501	28,116,083	73.98958414	45.87350087	719,697	8,213	94,115	87,664
M-001	9,763,838	0	9.7638375	9.7638375	94,973	1,084	12,420	18,659
M-001	94,653,400	0	94.6534	94.6534	920,694	10,507	120,399	180,883
M-002	1,046,406,250	0	1046.40625	1046.40625	10,178,394	116,151	1,331,029	1,999,682
M-002	83,357,246	51,090,046	134.447292	83.357246	1,307,769	14,924	171,017	159,296
M-002	112,803,750	0	112.80375	112.80375	1,097,242	12,521	143,486	215,568
M-003	670,625,000	0	670.625	670.625	6,523,169	74,439	853,035	1,281,564
M-004	8,066,550	4,943,951	13.0105008	8.0665497	126,553	1,444	16,549	15,415
M-005	708,044,719	0	708.0447188	708.0447188	6,887,151	78,593	900,633	1,353,073
M-005	41,368,477	25,354,933	66.72341034	41.36847717	649,019	7,406	84,872	79,055
M-005	245,455,456	0	245.4554563	245.4554563	2,387,545	27,246	312,219	469,065
M-006	38,985,567	23,895,094	62.88066065	38.98556652	611,640	6,980	79,984	74,501
M-007	156,209,375	0	156.209375	156.209375	1,519,449	17,339	198,698	298,516
M-008	46,295,625	28,374,375	74.67	46.295625	726,315	8,288	94,980	88,471
M-008	367,659,330	70,029,930	437.68926	367.65933	4,257,403	48,584	556,741	702,597
M-009	8,795,790	5,545,125	14.340915	8.79579	139,494	1,592	18,242	16,809
M-010	129,268,750	0	129.26875	129.26875	1,257,397	14,349	164,430	247,033
M-011	4,962,891	3,041,733	8.004624	4.962891	77,861	889	10,182	9,484
MV-001	22,555,229	13,823,996	36.379224	22.5552285	353,861	4,038	46,274	43,103
MV-002	17,070,348	10,761,650	27.831998	17.070348	270,722	3,089	35,402	32,621
MV-002	14,073,264	8,872,200	22.945464	14.073264	223,191	2,547	29,187	26,894
MV-003	439,606,250	0	439.60625	439.60625	4,276,050	48,796	559,179	840,088
MV-003	84,868,750	0	84.86875	84.86875	825,518	9,420	107,953	162,184
MV-004	216,741,375	0	216.741375	216.741375	2,108,243	24,058	275,695	414,193
MV-005	8,619,134	5,282,628	13.90176192	8.61913428	135,222	1,543	17,683	16,471
MV-006	173,437,500	0	173.4375	173.4375	1,687,027	19,252	220,613	331,439
MV-007	2,019,774	1,273,325	3.293099	2.019774	32,032	366	4,189	3,860
MV-008	3,778,932	2,382,350	6.161282	3.778932	59,931	684	7,837	7,222
MV-009	716,694	451,825	1.168519	0.716694	11,366	130	1,486	1,370
MV-010	3,062,238	1,930,525	4.992763	3.062238	48,565	554	6,351	5,852
MV-011	1,563,696	985,800	2.549496	1.563696	24,799	283	3,243	2,988
MV-012	10,038,480	1,912,080	11.95056	10.03848	116,243	1,327	15,201	19,184
MV-013	5,332,020	3,268,020	8.60004	5.33202	83,653	955	10,939	10,189
MV-014	6,971,478	4,395,025	11.366503	6.971478	110,562	1,262	14,458	13,322

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
MV-015	4,104,702	2,587,725	6.692427	4.104702	65,097	743	8,513	7,844
MV-016	2,084,928	1,314,400	3.399328	2.084928	33,065	377	4,324	3,984
MV-017	6,254,784	3,943,200	10.197984	6.254784	99,196	1,132	12,972	11,953
MV-018	407,402	249,695	0.657096	0.4074015	6,392	73	836	779
MV-019	9,056,406	5,709,425	14.765831	9.056406	143,627	1,639	18,782	17,307
MV-020	6,947,159	4,257,881	11.20503994	6.947158524	108,991	1,244	14,253	13,276
MV-021	10,038,480	1,912,080	11.95056	10.03848	116,243	1,327	15,201	19,184
MV-022	2,606,160	1,643,000	4.24916	2.60616	41,332	472	5,405	4,980
MV-023	27,169,218	17,128,275	44.297493	27.169218	430,882	4,917	56,346	51,920
MV-024	10,359,486	6,530,925	16.890411	10.359486	164,293	1,875	21,485	19,797
MV-025	5,277,474	3,327,075	8.604549	5.277474	83,696	955	10,945	10,085
MV-026	6,515,400	4,107,500	10.6229	6.5154	103,329	1,179	13,512	12,451
MV-027	3,518,316	2,218,050	5.736366	3.518316	55,798	637	7,297	6,724
MV-028	5,863,860	3,696,750	9.56061	5.86386	92,996	1,061	12,161	11,206
MV-029	17,917,350	11,295,625	29.212975	17.91735	284,155	3,243	37,159	34,240
MV-030	5,407,782	3,409,225	8.817007	5.407782	85,763	979	11,215	10,334
MV-031	3,453,162	2,176,975	5.630137	3.453162	54,764	625	7,162	6,599
MV-032	7,492,710	4,723,625	12.216335	7.49271	118,828	1,356	15,539	14,319
MV-033	3,518,316	2,218,050	5.736366	3.518316	55,798	637	7,297	6,724
MV-034	3,388,008	2,135,900	5.523908	3.388008	53,731	613	7,026	6,474
MV-035	1,628,850	1,026,875	2.655725	1.62885	25,832	295	3,378	3,113
MV-036	3,648,624	2,300,200	5.948824	3.648624	57,864	660	7,567	6,973
MV-037	373,730,756	0	373.7307563	373.7307563	3,635,279	41,484	475,386	714,199
MV-038	100,362,500	0	100.3625	100.3625	976,226	11,140	127,661	191,793
MV-039	370,000,000	0	370	370	3,598,990	41,070	470,640	707,070
MV-040	22,753,844	0	22.75384375	22.75384375	221,327	2,526	28,943	43,483
MV-041	335,312,500	0	335.3125	335.3125	3,261,585	37,220	426,518	640,782
MV-042	103,218,438	0	103.2184375	103.2184375	1,004,006	11,457	131,294	197,250
MV-043	128,498,688	0	128.4986875	128.4986875	1,249,907	14,263	163,450	245,561
MV-044	256,543,663	0	256.5436625	256.5436625	2,495,400	28,476	326,324	490,255
MV-045	6,453,240	3,955,161	10.40840064	6.45323976	101,243	1,155	13,239	12,332
MV-046	88,402,250	0	88.40225	88.40225	859,889	9,813	112,448	168,937
MV-047	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992
MV-048	263,845,590	161,716,650	425.5622395	263.8455898	4,139,444	47,237	541,315	504,209
MV-049	277,273,216	169,946,731	447.2199469	277.2732158	4,350,108	49,641	568,864	529,869
MV-050	82,049,813	0	82.0498125	82.0498125	798,099	9,108	104,367	156,797
MV-051	177,905,250	0	177.90525	177.90525	1,730,484	19,747	226,295	339,977
MV-052	203,259,500	0	203.2595	203.2595	1,977,105	22,562	258,546	388,429
MV-053	289,062,500	0	289.0625	289.0625	2,811,711	32,086	367,688	552,398
MV-054	401,912,500	0	401.9125	401.9125	3,909,403	44,612	511,233	768,055
MV-056	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
MV-057	2,410,698	1,519,775	3.930473	2.410698	38,232	436	5,000	4,607
MV-058	521,232	328,600	0.849832	0.521232	8,266	94	1,081	996
MV-059	4,104,702	2,587,725	6.692427	4.104702	65,097	743	8,513	7,844
MV-060	5,994,168	3,778,900	9.773068	5.994168	95,063	1,085	12,431	11,455
MV-061	13,333,140	8,171,820	21.50496	13.33314	209,179	2,387	27,354	25,480
MV-062	35,378,622	22,303,725	57.682347	35.378622	561,076	6,403	73,372	67,609
MV-063	14,399,034	9,077,575	23.476609	14.399034	228,357	2,606	29,862	27,517
MV-064	5,668,398	3,573,525	9.241923	5.668398	89,896	1,026	11,756	10,832
MV-065	3,388,008	2,135,900	5.523908	3.388008	53,731	613	7,026	6,474
MV-066	16,353,654	10,309,825	26.663479	16.353654	259,356	2,960	33,916	31,252
MV-067	10,489,794	6,613,075	17.102869	10.489794	166,360	1,898	21,755	20,046
MV-068	47,888,638	0	47.8886375	47.8886375	465,813	5,316	60,914	91,515
MV-069	94,719,538	0	94.7195375	94.7195375	921,337	10,514	120,483	181,009
MV-070	15,702,114	9,899,075	25.601189	15.702114	249,023	2,842	32,565	30,007
MV-071	3,192,546	2,012,675	5.205221	3.192546	50,631	578	6,621	6,101
MV-072	1,563,696	985,800	2.549496	1.563696	24,799	283	3,243	2,988
MV-073	6,254,784	3,943,200	10.197984	6.254784	99,196	1,132	12,972	11,953
MV-074	12,314,106	7,763,175	20.077281	12.314106	195,292	2,229	25,538	23,532
MV-075	95,189,994	60,010,575	155.200569	95.189994	1,509,636	17,227	197,415	181,908
MV-076	23,083,591	14,147,827	37.23141778	23.08359121	362,150	4,133	47,358	44,113
MV-077	123,256,250	0	123.25625	123.25625	1,198,914	13,681	156,782	235,543
MV-078	120,250,000	0	120.25	120.25	1,169,672	13,348	152,958	229,798
MV-079	84,868,750	0	84.86875	84.86875	825,518	9,420	107,953	162,184
MV-080	3,281,434	2,011,176	5.2926096	3.2814339	51,481	587	6,732	6,271
MV-081	161,875,000	0	161.875	161.875	1,574,558	17,968	205,905	309,343
MV-082	115,625,000	0	115.625	115.625	1,124,684	12,834	147,075	220,959
MV-083	82,325,000	0	82.325	82.325	800,775	9,138	104,717	157,323
MV-084	23,119,913	0	23.1199125	23.1199125	224,887	2,566	29,409	44,182
MV-085	10,370,220	6,355,860	16.72608	10.37022	162,695	1,857	21,276	19,817
MV-086	4,625,934	2,916,325	7.542259	4.625934	73,364	837	9,594	8,840
MV-087	3,909,240	2,464,500	6.37374	3.90924	61,997	707	8,107	7,471
MV-088	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-089	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-090	541,474	331,867	0.87334032	0.54147363	8,495	97	1,111	1,035
MV-091	5,668,398	3,573,525	9.241923	5.668398	89,896	1,026	11,756	10,832
MV-093	7,297,248	4,600,400	11.897648	7.297248	115,728	1,321	15,134	13,945
MV-094	17,330,964	10,925,950	28.256914	17.330964	274,855	3,137	35,943	33,119
MV-095	12,962,775	7,944,825	20.9076	12.962775	203,368	2,321	26,594	24,772
MV-096	5,082,012	3,203,850	8.285862	5.082012	80,597	920	10,540	9,712
MV-097	13,942,956	8,790,050	22.733006	13.942956	221,124	2,523	28,916	26,645
MV-098	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
MV-099	6,254,784	3,943,200	10.197984	6.254784	99,196	1,132	12,972	11,953
MV-100	12,639,876	7,968,550	20.608426	12.639876	200,458	2,288	26,214	24,155
MV-101	666,657	408,591	1.075248	0.666657	10,459	119	1,368	1,274
MV-102	14,929,656	9,150,456	24.080112	14.929656	234,227	2,673	30,630	28,531
MV-103	42,550,000	0	42.55	42.55	413,884	4,723	54,124	81,313
MV-104	86,263,188	0	86.2631875	86.2631875	839,082	9,575	109,727	164,849
MV-105	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-106	781,848	492,900	1.274748	0.781848	12,399	141	1,621	1,494
MV-107	586,386	369,675	0.956061	0.586386	9,300	106	1,216	1,121
MV-108	220,219	134,971	0.355190256	0.220219029	3,455	39	452	421
MV-109	71,995,170	45,387,875	117.383045	71.99517	1,141,785	13,030	149,311	137,583
MV-110	3,909,240	2,464,500	6.37374	3.90924	61,997	707	8,107	7,471
MV-111	1,042,464	657,200	1.699664	1.042464	16,533	189	2,162	1,992
MV-112	977,310	616,125	1.593435	0.97731	15,499	177	2,027	1,868
MV-113	9,382,176	5,914,800	15.296976	9.382176	148,794	1,698	19,458	17,929
MV-114	422,216	258,774	0.6809904	0.4222161	6,624	76	866	807
MV-115	4,088	2,505	0.006593364	0.004087882	64	1	8	8
MV-116	1,628,850	1,026,875	2.655725	1.62885	25,832	295	3,378	3,113
MV-117	9,242,168	5,664,568	14.906736	9.242168	144,998	1,655	18,961	17,662
MV-118	586,386	369,675	0.956061	0.586386	9,300	106	1,216	1,121
MV-119	2,280,390	1,437,625	3.718015	2.28039	36,165	413	4,729	4,358
MV-120	14,038,315	8,604,018	22.64233344	14.03831496	220,242	2,513	28,801	26,827
MV-121	322,292	197,531	0.519822672	0.322291623	5,056	58	661	616
MV-123	1,037,022	635,586	1.672608	1.037022	16,269	186	2,128	1,982
MV-124	10,370,220	6,355,860	16.72608	10.37022	162,695	1,857	21,276	19,817
MV-125	1,563,696	985,800	2.549496	1.563696	24,799	283	3,243	2,988
MV-126	15,311,190	9,652,625	24.963815	15.31119	242,823	2,771	31,754	29,260
MV-127	78,627,313	0	78.6273125	78.6273125	764,808	8,728	100,014	150,257
MV-129	365,375,000	0	365.375	365.375	3,554,003	40,557	464,757	698,232
MV-130	51,304,894	0	51.30489375	51.30489375	499,043	5,695	65,260	98,044
MV-131	346,875,000	0	346.875	346.875	3,374,053	38,503	441,225	662,878
MV-132	254,375,000	0	254.375	254.375	2,474,306	28,236	323,565	486,111
P-001	8,926,098	5,627,275	14.553373	8.926098	141,561	1,615	18,512	17,058
P-002	138,750,000	0	138.75	138.75	1,349,621	15,401	176,490	265,151
P-003	106,906,875	0	106.906875	106.906875	1,039,883	11,867	135,986	204,299
P-004	39,775,000	0	39.775	39.775	386,891	4,415	50,594	76,010
P-005	106,375,000	0	106.375	106.375	1,034,710	11,808	135,309	203,283
P-006	138,750,000	0	138.75	138.75	1,349,621	15,401	176,490	265,151
P-007	275,155,125	0	275.155125	275.155125	2,676,434	30,542	349,997	525,821
P-008	55,731,250	0	55.73125	55.73125	542,098	6,186	70,890	106,502
P-009	148,462,500	0	148.4625	148.4625	1,444,095	16,479	188,844	283,712

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
P-010	393,125,000	0	393.125	393.125	3,823,927	43,637	500,055	751,262
P-011	283,279,631	0	283.2796313	283.2796313	2,755,461	31,444	360,332	541,347
P-012	105,007,850	0	105.00785	105.00785	1,021,411	11,656	133,570	200,670
P-014	277,500,000	0	277.5	277.5	2,699,243	30,803	352,980	530,303
P-015	180,563,469	0	180.5634688	180.5634688	1,756,341	20,043	229,677	345,057
P-016	302,937,500	0	302.9375	302.9375	2,946,673	33,626	385,337	578,914
P-017	134,125,000	0	134.125	134.125	1,304,634	14,888	170,607	256,313
P-018	357,743,750	0	357.74375	357.74375	3,479,773	39,710	455,050	683,648
P-019	161,320,000	0	161.32	161.32	1,569,160	17,907	205,199	308,283
P-020	201,534,375	0	201.534375	201.534375	1,960,325	22,370	256,352	385,132
P-021	39,312,500	0	39.3125	39.3125	382,393	4,364	50,006	75,126
P-022	87,875,000	0	87.875	87.875	854,760	9,754	111,777	167,929
P-023	41,625,000	0	41.625	41.625	404,886	4,620	52,947	79,545
P-024	338,550,000	0	338.55	338.55	3,293,076	37,579	430,636	646,969
P-025	240,037,500	0	240.0375	240.0375	2,334,845	26,644	305,328	458,712
P-026	187,687,125	0	187.687125	187.687125	1,825,633	20,833	238,738	358,670
P-027	199,800,000	0	199.8	199.8	1,943,455	22,178	254,146	381,818
P-028	154,937,500	0	154.9375	154.9375	1,507,077	17,198	197,081	296,086
P-030	32,055,768	20,208,900	52.264668	32.055768	508,378	5,801	66,481	61,259
P-031	4,886,550	3,080,625	7.967175	4.88655	77,497	884	10,134	9,338
P-032	47,628,939	29,191,557	76.820496	47.628939	747,233	8,527	97,716	91,019
P-033	121,186,440	76,399,500	197.58594	121.18644	1,921,918	21,932	251,329	231,587
P-034	732,335,681	0	732.3356813	732.3356813	7,123,429	81,289	931,531	1,399,493
P-035	2,606,160	1,643,000	4.24916	2.60616	41,332	472	5,405	4,980
P-036	797,519,738	0	797.5197375	797.5197375	7,757,474	88,525	1,014,445	1,524,060
P-036	3,703,650	2,269,950	5.9736	3.70365	58,105	663	7,598	7,078
P-037	11,923,182	7,516,725	19.439907	11.923182	189,092	2,158	24,728	22,785
P-038	14,529,342	9,159,725	23.689067	14.529342	230,424	2,629	30,132	27,766
P-039	181,230,625	0	181.230625	181.230625	1,762,830	20,117	230,525	346,332
P-040	7,948,788	5,011,150	12.959938	7.948788	126,061	1,439	16,485	15,190
P-041	34,626,913	0	34.6269125	34.6269125	336,816	3,844	44,045	66,172
P-042	3,974,394	2,505,575	6.479969	3.974394	63,031	719	8,243	7,595
P-043	3,713,778	2,341,275	6.055053	3.713778	58,898	672	7,702	7,097
P-044	6,124,476	3,861,050	9.985526	6.124476	97,129	1,108	12,702	11,704
P-045	4,886,550	3,080,625	7.967175	4.88655	77,497	884	10,134	9,338
P-046	27,951,066	17,621,175	45.572241	27.951066	443,281	5,059	57,968	53,414
P-047	33,945,234	21,400,075	55.345309	33.945234	538,344	6,143	70,399	64,869
P-048	4,886,550	3,080,625	7.967175	4.88655	77,497	884	10,134	9,338
P-049	7,427,556	4,682,550	12.110106	7.427556	117,795	1,344	15,404	14,194
P-050	5,925,840	3,631,920	9.55776	5.92584	92,968	1,061	12,157	11,324
P-051	2,280,390	1,437,625	3.718015	2.28039	36,165	413	4,729	4,358

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
P-052	5,342,628	3,368,150	8.710778	5.342628	84,730	967	11,080	10,210
P-053	10,489,794	6,613,075	17.102869	10.489794	166,360	1,898	21,755	20,046
P-054	15,506,652	9,775,850	25.282502	15.506652	245,923	2,806	32,159	29,633
P-055	33,332,850	20,429,550	53.7624	33.33285	522,947	5,968	68,386	63,699
P-056	2,278,738	0	2.2787375	2.2787375	22,165	253	2,899	4,355
P-057	9,631,563	0	9.6315625	9.6315625	93,686	1,069	12,251	18,406
P-058	87,412,500	0	87.4125	87.4125	850,261	9,703	111,189	167,045
P-059	15,832,422	9,981,225	25.813647	15.832422	251,089	2,865	32,835	30,256
P-060	333,329	204,296	0.537624	0.3333285	5,229	60	684	637
P-061	80,937,500	0	80.9375	80.9375	787,279	8,984	102,953	154,672
R-001	244,414,287	149,806,785	394.2210724	244.414287	3,834,588	43,759	501,449	467,076
R-002	134,766,025	0	134.766025	134.766025	1,310,869	14,959	171,422	257,538
R-003	150,779,163	0	150.7791625	150.7791625	1,466,629	16,736	191,791	288,139
R-004	14,073,264	8,872,200	22.945464	14.073264	223,191	2,547	29,187	26,894
R-005	62,740,500	11,950,500	74.691	62.7405	726,519	8,291	95,007	119,897
R-006	5,016,858	3,162,775	8.179633	5.016858	79,563	908	10,404	9,587
R-007	4,155,569	2,546,929	6.702498672	4.155569373	65,195	744	8,526	7,941
R-008	2,410,698	1,519,775	3.930473	2.410698	38,232	436	5,000	4,607
R-009	650,184,556	398,495,115	1048.679671	650.1845562	10,200,507	116,403	1,333,921	1,242,503
R-010	1,745,530	1,069,827	2.81535768	1.745530245	27,385	313	3,581	3,336
R-011	60,546,264	37,110,111	97.65637506	60.54626441	949,904	10,840	124,219	115,704
R-012	4,546,436	2,786,490	7.332926419	4.546436476	71,327	814	9,327	8,688
R-013	195,462	123,225	0.318687	0.195462	3,100	35	405	374
R-014	285,774	175,149	0.460922976	0.285773634	4,483	51	586	546
R-015	11,186,681	7,052,413	18.23909438	11.18668118	177,412	2,025	23,200	21,378
R-016	99,405	62,668	0.162073585	0.099405458	1,576	18	206	190
R-017	17,917,350	11,295,625	29.212975	17.91735	284,155	3,243	37,159	34,240
R-018	2,089,997,910	0	2089.99791	2089.99791	20,329,410	231,990	2,658,477	3,993,986
R-019	3,583,470	2,259,125	5.842595	3.58347	56,831	649	7,432	6,848
R-020	337,960,081	0	337.9600813	337.9600813	3,287,338	37,514	429,885	645,842
R-021	977,310	616,125	1.593435	0.97731	15,499	177	2,027	1,868
R-022	586,386	369,675	0.956061	0.586386	9,300	106	1,216	1,121
R-023	595,473	364,963	0.960435408	0.595472847	9,342	107	1,222	1,138
R-024	325,770,000	205,375,000	531.145	325.77	5,166,447	58,957	675,616	622,546
R-025	13,552,032	8,543,600	22.095632	13.552032	214,924	2,453	28,106	25,898
R-026	22,070,080	13,526,650	35.59673019	22.07007998	346,249	3,951	45,279	42,176
R-026	218,186,595	0	218.186595	218.186595	2,122,301	24,219	277,533	416,955
R-026	61,781,902	37,867,460	99.6493623	61.78190246	969,289	11,061	126,754	118,065
R-027	267,996	164,254	0.432249696	0.267996114	4,204	48	550	512
R-028	8,730,636	5,504,050	14.234686	8.730636	138,461	1,580	18,107	16,684
R-029	281,107	172,289	0.45339624	0.281107035	4,410	50	577	537

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
R-030	15,449,056	9,468,655	24.91771113	15.44905599	242,375	2,766	31,695	29,523
R-031	2,345,544	1,478,700	3.824244	2.345544	37,198	424	4,864	4,482
R-032	1,649,754	1,011,127	2.660880384	1.649753856	25,882	295	3,385	3,153
R-033	1,954,620	1,232,250	3.18687	1.95462	30,999	354	4,054	3,735
R-034	2,162,312	1,325,291	3.487602888	2.162311844	33,924	387	4,436	4,132
R-035	6,645,708	4,189,650	10.835358	6.645708	105,396	1,203	13,783	12,700
R-036	4,039,548	2,546,650	6.586198	4.039548	64,064	731	8,378	7,720
R-037	444,438	272,394	0.716832	0.444438	6,973	80	912	849
R-038	259,256	158,897	0.418152	0.2592555	4,067	46	532	495
R-039	26,191,908	16,512,150	42.704058	26.191908	415,382	4,740	54,320	50,053
R-040	177,775	108,958	0.2867328	0.1777752	2,789	32	365	340
R-041	4,109,921	2,518,990	6.628910832	4.109921016	64,479	736	8,432	7,854
R-042	38,962,092	24,562,850	63.524942	38.962092	617,907	7,051	80,804	74,457
R-043	3,257,700	2,053,750	5.31145	3.2577	51,664	590	6,756	6,225
R-044	296,292	181,596	0.477888	0.296292	4,648	53	608	566
R-045	6,743,050	4,132,847	10.87589725	6.743050226	105,790	1,207	13,834	12,886
R-046	2,335,315	1,472,251	3.807566047	2.335314822	37,036	423	4,843	4,463
R-047	24,913,025	0	24.913025	24.913025	242,329	2,765	31,689	47,609
R-048	5,577,697	3,418,545	8.9962416	5.5776969	87,506	999	11,443	10,659
R-049	20,197,740	12,733,250	32.93099	20.19774	320,320	3,655	41,888	38,598
R-050	249,703	157,420	0.407122643	0.249702705	3,960	45	518	477
R-051	174,886	107,187	0.282073392	0.174886353	2,744	31	359	334
R-052	2,084,928	1,314,400	3.399328	2.084928	33,065	377	4,324	3,984
R-053	1,889,466	1,191,175	3.080641	1.889466	29,965	342	3,919	3,611
R-054	1,628,850	1,026,875	2.655725	1.62885	25,832	295	3,378	3,113
R-055	1,303,080	821,500	2.12458	1.30308	20,666	236	2,702	2,490
R-056	23,283,154	14,270,354	37.553508	23.283154	365,283	4,168	47,768	44,494
R-057	39,686,200	0	39.6862	39.6862	386,028	4,405	50,481	75,840
R-058	203,404	124,666	0.328070112	0.203404458	3,191	36	417	389
R-059	299,996	183,866	0.4838616	0.29999565	4,707	54	615	573
R-060	18,054,220	11,065,820	29.12004018	18.05421972	283,251	3,232	37,041	34,502
R-061	31,514,136	19,314,868	50.82900398	31.51413563	494,414	5,642	64,654	60,224
R-062	135,628	83,126	0.218753232	0.135627663	2,128	24	278	259
R-063	1,368,234	862,575	2.230809	1.368234	21,699	248	2,838	2,615
R-064	325,770	205,375	0.531145	0.32577	5,166	59	676	623
R-065	4,039,548	2,546,650	6.586198	4.039548	64,064	731	8,378	7,720
R-066	455,549	279,204	0.7347528	0.45554895	7,147	82	935	871
RC-001	81,507,654	51,384,825	132.892479	81.507654	1,292,645	14,751	169,039	155,761
RC-002	130,308,000	82,150,000	212.458	130.308	2,066,579	23,583	270,247	249,019
RC-003	222,305,448	140,147,900	362.453348	222.305448	3,525,584	40,232	461,041	424,826
RC-005	48,865,500	30,806,250	79.67175	48.8655	774,967	8,844	101,342	93,382

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
RC-006	106,640,400	65,362,200	172.0026	106.6404	1,673,069	19,092	218,787	203,790
RC-007	366,911,656	0	366.9116563	366.9116563	3,568,950	40,727	466,712	701,168
RC-009	6,042,956	3,703,756	9.746712	6.042956	94,806	1,082	12,398	11,548
RC-009	271,189,188	0	271.1891875	271.1891875	2,637,857	30,102	344,953	518,243
RC-010	1,433,750,000	0	1433.75	1433.75	13,946,086	159,146	1,823,730	2,739,896
RC-011	188,237,500	0	188.2375	188.2375	1,830,986	20,894	239,438	359,722
RC-012	97,972,531	0	97.97253125	97.97253125	952,979	10,875	124,621	187,226
RC-013	32,381,538	20,414,275	52.795813	32.381538	513,545	5,860	67,156	61,881
RC-014	20,849,280	13,144,000	33.99328	20.84928	330,653	3,773	43,239	39,843
RC-015	9,251,868	5,832,650	15.084518	9.251868	146,727	1,674	19,188	17,680
RC-017	687,397	421,303	1.10870016	0.68739744	10,784	123	1,410	1,314
RC-018	977,310	616,125	1.593435	0.97731	15,499	177	2,027	1,868
RC-019	3,910,906	2,396,976	6.307882656	3.910906254	61,357	700	8,024	7,474
RC-020	207,404	127,117	0.3345216	0.2074044	3,254	37	426	396
RC-021	1,850,000	0	1.85	1.85	17,995	205	2,353	3,535
RC-022	8,535,174	5,380,825	13.915999	8.535174	135,361	1,545	17,701	16,311
RC-023	12,129,063	0	12.1290625	12.1290625	117,979	1,346	15,428	23,179
RC-024	44,122,963	0	44.1229625	44.1229625	429,184	4,898	56,124	84,319
RC-025	19,656,250	0	19.65625	19.65625	191,196	2,182	25,003	37,563
RC-026	130,308	82,150	0.212458	0.130308	2,067	24	270	249
RC-027	43,637,319	0	43.637319	43.637319	424,460	4,844	55,507	83,391
RC-028	414,809	254,234	0.6690432	0.4148088	6,508	74	851	793
RC-029	603,102	369,639	0.972741024	0.603102366	9,462	108	1,237	1,153
RC-030	291,155,313	0	291.1553125	291.1553125	2,832,068	32,318	370,350	556,398
RC-031	41,763,750	0	41.76375	41.76375	406,236	4,636	53,123	79,811
RC-032	47,301,804	29,820,450	77.122254	47.301804	750,168	8,561	98,100	90,394
RC-033	25,019,136	15,772,800	40.791936	25.019136	396,783	4,528	51,887	47,812
RC-034	28,146,528	17,744,400	45.890928	28.146528	446,381	5,094	58,373	53,788
RC-035	180,802,350	113,983,125	294.785475	180.80235	2,867,378	32,721	374,967	345,513
RC-035	14,218,720	8,714,720	22.93344	14.21872	223,074	2,546	29,171	27,172
RC-035	6,645,708	4,189,650	10.835358	6.645708	105,396	1,203	13,783	12,700
RC-036	30,492,072	19,223,100	49.715172	30.492072	483,579	5,518	63,238	58,270
RC-037	36,616,548	23,084,150	59.700698	36.616548	580,709	6,627	75,939	69,974
RC-038	421,744,500	0	421.7445	421.7445	4,102,309	46,814	536,459	805,954
RC-039	2,541,006	1,601,925	4.142931	2.541006	40,298	460	5,270	4,856
RD-001	5,342,628	3,368,150	8.710778	5.342628	84,730	967	11,080	10,210
RD-002	3,583,470	2,259,125	5.842595	3.58347	56,831	649	7,432	6,848
RD-003	6,710,862	4,230,725	10.941587	6.710862	106,429	1,215	13,918	12,824
RD-004	4,365,318	2,752,025	7.117343	4.365318	69,230	790	9,053	8,342
RD-005	115,764,213	0	115.7642125	115.7642125	1,126,038	12,850	147,252	221,225
RD-006	3,572,096	2,189,321	5.761417728	3.572096352	56,041	640	7,329	6,826

World Logistic Center

Cumulative Energy - Electricity Natural Gas

Energy Cons Energy Consumption - Electricity from Potable Water Use

	Water		Water		Electricity from Water (kWh)			
Project ID	Indoors (gal)	Outdoors (gal)	Water (M gal)	Wastewater (M gal)	Water Supply	Water Treatment	Water Distribution	Wastewater Treatment
RD-007	9,462,529	5,799,541	15.26207011	9.462529458	148,454	1,694	19,413	18,083
RD-008	5,212,320	3,286,000	8.49832	5.21232	82,663	943	10,810	9,961
RD-009	3,244,546	1,988,567	5.233112544	3.244545546	50,902	581	6,657	6,200
RD-010	33,590,219	0	33.59021875	33.59021875	326,732	3,729	42,727	64,191
RD-011	4,108,459	2,518,056	6.62651448	4.108458945	64,456	736	8,429	7,851
RD-012	139,047,619	0	139.0476188	139.0476188	1,352,516	15,434	176,869	265,720
RD-013	234,256,250	0	234.25625	234.25625	2,278,611	26,002	297,974	447,664
RD-014	178,525,000	0	178.525	178.525	1,736,513	19,816	227,084	341,161
RD-015	97,818,750	0	97.81875	97.81875	951,483	10,858	124,425	186,932
RD-016	165,282,006	0	165.2820063	165.2820063	1,607,698	18,346	210,239	315,854
SB-001	142,063,350	0	142.06335	142.06335	1,381,850	15,769	180,705	271,483
SB-002	72,489,938	0	72.4899375	72.4899375	705,110	8,046	92,207	138,528
SB-003	137,261,444	0	137.2614438	137.2614438	1,335,142	15,236	174,597	262,307
SB-004	179,824,625	0	179.824625	179.824625	1,749,154	19,961	228,737	343,645
SB-005	65,212,500	0	65.2125	65.2125	634,322	7,239	82,950	124,621
SB-006	125,563,431	0	125.5634313	125.5634313	1,221,355	13,938	159,717	239,952
SB-007	2,215,236	1,396,550	3.611786	2.215236	35,132	401	4,594	4,233
SB-008	2,606,160	1,643,000	4.24916	2.60616	41,332	472	5,405	4,980
SJ-001	124,312,630	76,190,637	200.5032673	124.3126299	1,950,295	22,256	255,040	237,561
SJ-002	20,914,434	13,185,075	34.099509	20.914434	331,686	3,785	43,375	39,967
SJ-003	37,789,320	23,823,500	61.61282	37.78932	599,308	6,839	78,372	72,215
SJ-004	39,939,402	25,178,975	65.118377	39.939402	633,406	7,228	82,831	76,324
WLC-001	3,909,240	2,464,500	6.37374	3.90924	61,997	707	8,107	7,471

3 Transportation Fuels

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
B-001	811,945	886,209	1,993,672	17,519,159	1,625
B-002			267,495	2,350,577	218
B-003	136,884	83,203	557,020	4,894,747	454
B-004	120,158	90,274	711,650	6,253,541	580
B-005			834,317	7,331,468	680
B-006	134,044	96,431	1,458,987	12,820,679	1,189
B-007	54,788	18,615	243,470	2,139,461	198
B-008	121,463	58,888	391,485	3,440,126	319
B-009	1,343,552	1,592,304	2,688,436	23,624,320	2,192
B-010	50,691	4,861	57,394	504,339	47
B-011	45,372	9,446	305,089	2,680,936	249
B-012			130,702	1,148,531	107
B-013	382,424	339,379	1,141,830	10,033,700	931
B-014	124,123	63,361	422,900	3,716,185	345
C-001	43,602	8,938	271,190	2,383,054	221
C-002	163,552	123,557	2,599,032	22,838,694	2,119
C-003	33,981	3,590	98,578	866,240	80
H-001	59,841	26,798	355,236	3,121,596	290
H-002	55,851	20,221	265,823	2,335,888	217
H-003	137,416	84,199	562,457	4,942,526	459
H-004	129,039	90,032	1,085,086	9,535,072	885
H-005	15,668	1,173	28,351	249,134	23
H-006	83,134	27,853	923,116	8,111,773	753
H-007	55,570	32,744	84,772	744,924	69
H-008	60,183	46,385	191,790	1,685,330	156
H-009			141,839	1,246,395	116
M-001	101,761	38,543	315,755	2,774,658	257
M-002			2,647,578	23,265,282	2,158
M-003	172,547	152,814	1,391,747	12,229,816	1,135
M-004	35,832	5,164	147,663	1,297,573	120
M-005	232,896	227,504	2,041,886	17,942,835	1,665
M-006	45,116	12,072	172,683	1,517,435	141
M-007	78,878	36,132	324,181	2,848,704	264
M-008	205,511	178,369	5,816,670	51,113,311	4,742
M-009	46,928	6,545	81,559	716,693	66
M-010	70,532	29,978	268,271	2,357,402	219
M-011	32,882	3,305	90,849	798,323	74
MV-001	51,273	12,703	412,887	3,628,200	337
MV-002	61,451	31,634	259,474	2,280,100	212
MV-003	143,133	119,796	1,062,934	9,340,413	867
MV-004			384,660	3,380,158	314
MV-005	36,448	5,596	157,779	1,386,461	129

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
MV-006	82,104	40,030	359,935	3,162,883	293
MV-007	36,444	1,929	18,728	164,574	15
MV-008	47,680	3,129	35,040	307,912	29
MV-009	32,920	868	6,646	58,397	5
MV-010	47,410	2,625	28,395	249,515	23
MV-011	36,176	1,549	14,499	127,412	12
MV-012			135,678	1,192,253	111
MV-013	15,979	2,032	17,640	155,011	14
MV-014	51,404	5,319	64,643	568,045	53
MV-015	50,266	3,424	38,061	334,457	31
MV-016	46,873	1,998	19,333	169,883	16
MV-017	50,691	4,861	57,998	509,648	47
MV-018			7,458	65,534	6
MV-019			32,914	289,230	27
MV-020			127,172	1,117,509	104
MV-021	34,602	5,021	135,678	1,192,253	111
MV-022			24,166	212,353	20
MV-023	60,143	37,050	195,351	1,716,621	159
MV-024	47,781	7,746	96,059	844,105	78
MV-025	50,727	4,177	48,936	430,016	40
MV-026	50,691	4,994	60,414	530,884	49
MV-027	34,085	5,571	25,297	222,296	21
MV-028	38,070	8,557	42,162	370,494	34
MV-029	51,067	12,781	166,139	1,459,930	135
MV-030	50,727	4,177	50,144	440,633	41
MV-031	47,412	2,996	32,020	281,368	26
MV-032	51,667	5,692	69,476	610,516	57
MV-033	47,412	2,996	32,624	286,677	27
MV-034	47,411	2,872	31,415	276,059	26
MV-035	36,176	1,549	15,104	132,721	12
MV-036			26,234	230,529	21
MV-037			525,539	4,618,116	428
MV-038			178,118	1,565,188	145
MV-039			656,655	5,770,280	535
MV-040	34,737	6,168	47,221	414,949	38
MV-041	108,981	76,567	695,873	6,114,908	567
MV-042	65,692	24,084	214,209	1,882,337	175
MV-043			180,695	1,587,833	147
MV-044	98,367	57,085	532,405	4,678,444	434
MV-045	34,906	4,164	118,131	1,038,058	96
MV-046			183,461	1,612,143	150
MV-047	35,907	1,179	9,666	84,941	8

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
MV-048			1,168,682	10,269,659	953
MV-049			1,228,159	10,792,302	1,001
MV-050			145,617	1,279,596	119
MV-051			315,736	2,774,495	257
MV-052			360,733	3,169,903	294
MV-053			599,891	5,271,472	489
MV-054	120,158	90,395	834,088	7,329,455	680
MV-056	35,907	1,179	9,666	84,941	8
MV-057	46,874	2,245	22,353	196,427	18
MV-058			4,833	42,471	4
MV-059	50,266	3,424	38,061	334,457	31
MV-060	50,987	4,665	55,581	488,413	45
MV-061	42,739	8,133	244,071	2,144,749	199
MV-062	58,776	24,816	328,050	2,882,698	267
MV-063	49,658	10,493	133,516	1,173,253	109
MV-064	50,986	4,427	52,560	461,869	43
MV-065	34,085	5,439	24,360	214,063	20
MV-066	53,112	23,199	117,585	1,033,266	96
MV-067	48,047	7,746	97,267	854,723	79
MV-068	43,801	12,032	67,341	591,750	55
MV-069			133,194	1,170,430	109
MV-070	52,840	22,315	112,900	992,100	92
MV-071	34,084	5,174	22,955	201,713	19
MV-072	30,418	2,729	11,243	98,798	9
MV-073	38,339	9,183	44,973	395,193	37
MV-074	48,543	17,378	44,754	393,270	36
MV-075	168,241	261,706	345,955	3,040,040	282
MV-076	51,807	12,950	422,559	3,713,191	345
MV-077	72,693	28,602	218,748	1,922,224	178
MV-078			213,413	1,875,341	174
MV-079	51,814	19,833	176,128	1,547,704	144
MV-080	31,956	2,299	60,069	527,846	49
MV-081			335,939	2,952,024	274
MV-082			239,956	2,108,589	196
MV-083			146,106	1,283,887	119
MV-084			41,032	360,563	33
MV-085	40,724	6,380	189,833	1,668,138	155
MV-086			42,894	376,927	35
MV-087	34,375	6,243	28,108	246,996	23
MV-088	15,044	1,456	5,622	49,399	5
MV-089	15,044	1,456	5,622	49,399	5
MV-090	15,041	597	9,912	87,101	8

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
MV-091	50,986	4,427	52,560	461,869	43
MV-093			52,468	461,059	43
MV-094	56,890	24,579	124,612	1,095,015	102
MV-095	42,451	7,868	237,292	2,085,172	193
MV-096	50,823	4,199	47,123	414,089	38
MV-097	49,390	10,247	129,287	1,136,091	105
MV-098	35,907	1,179	9,666	84,941	8
MV-099	38,339	9,183	44,973	395,193	37
MV-100	51,486	18,048	90,883	798,620	74
MV-101	15,041	597	12,204	107,237	10
MV-102	34,603	5,311	49,392	434,031	40
MV-103	42,935	10,820	75,515	663,582	62
MV-104	52,082	20,090	179,022	1,573,134	146
MV-105	15,044	1,456	5,622	49,399	5
MV-106	15,044	1,456	5,622	49,399	5
MV-107	29,796	725	5,437	47,780	4
MV-108	14,732	313	4,031	35,424	3
MV-109	147,517	99,569	667,578	5,866,264	544
MV-110	34,375	6,243	28,108	246,996	23
MV-111	30,107	1,872	7,495	65,866	6
MV-112	15,055	1,747	7,027	61,749	6
MV-113	47,191	6,919	86,997	764,472	71
MV-114	14,732	455	7,729	67,917	6
MV-115	14,732	313	14	119	0
MV-116	36,176	1,549	15,104	132,721	12
MV-117	32,267	3,304	30,576	268,686	25
MV-118	29,796	725	5,437	47,780	4
MV-119	46,873	2,121	21,145	185,809	17
MV-120	43,314	8,541	256,980	2,258,182	210
MV-121	14,732	455	5,900	51,843	5
MV-123	15,359	881	18,983	166,814	15
MV-124	40,724	6,380	189,833	1,668,138	155
MV-125	30,418	2,729	11,243	98,798	9
MV-126	50,003	11,043	141,974	1,247,576	116
MV-127	50,475	18,335	163,175	1,433,883	133
MV-129	113,312	82,271	648,447	5,698,151	529
MV-130	45,286	12,195	106,473	935,619	87
MV-131	107,750	78,093	719,869	6,325,767	587
MV-132	95,297	56,598	527,904	4,638,896	430
P-001			82,768	727,311	67
P-002			287,948	2,530,307	235
P-003			221,864	1,949,601	181

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
P-004	42,359	10,148	70,590	620,305	58
P-005	66,230	24,835	220,760	1,939,902	180
P-006	77,321	32,120	246,246	2,163,855	201
P-007	99,537	61,196	488,330	4,291,141	398
P-008	46,187	13,201	98,909	869,148	81
P-009	79,203	34,373	208,768	1,834,521	170
P-010			815,852	7,169,202	665
P-011			398,347	3,500,430	325
P-012	65,961	24,464	186,362	1,637,634	152
P-014	102,254	61,689	575,895	5,060,613	470
P-015			374,723	3,292,836	306
P-016			628,686	5,524,503	513
P-017			278,349	2,445,963	227
P-018			742,425	6,523,974	605
P-019			334,787	2,941,903	273
P-020			418,244	3,675,270	341
P-021			81,585	716,920	67
P-022	52,350	20,460	182,367	1,602,528	149
P-023	42,648	10,555	86,384	759,092	70
P-024	109,516	77,315	702,592	6,173,948	573
P-025	97,333	56,895	498,149	4,377,431	406
P-026	90,377	43,292	333,096	2,927,047	272
P-027			414,645	3,643,642	338
P-028	80,280	35,885	274,974	2,416,305	224
P-030	57,182	22,579	297,238	2,611,947	242
P-031	36,614	7,588	35,135	308,745	29
P-032	77,768	26,351	871,877	7,661,519	711
P-033	284,116	250,456	1,123,706	9,874,435	916
P-034	184,333	166,949	1,519,815	13,355,199	1,239
P-035	31,042	4,302	18,739	164,664	15
P-036	199,973	182,238	1,722,889	15,139,688	1,405
P-037			110,558	971,517	90
P-038			134,724	1,183,870	110
P-039	83,717	41,903	376,108	3,305,002	307
P-040	51,931	5,934	73,705	647,678	60
P-041	41,207	8,803	61,454	540,019	50
P-042	47,680	3,253	36,853	323,839	30
P-043	47,680	3,129	34,436	302,604	28
P-044	38,338	8,937	44,036	386,960	36
P-045	36,614	7,588	35,135	308,745	29
P-046	55,398	38,815	101,584	892,661	83
P-047	57,979	23,819	314,758	2,765,904	257

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
P-048	50,822	3,944	45,311	398,163	37
P-049	51,667	5,692	68,872	605,207	56
P-050	34,597	3,880	108,476	953,222	88
P-051	46,873	2,121	21,145	185,809	17
P-052	50,727	4,177	49,540	435,325	40
P-053	48,047	7,746	97,267	854,723	79
P-054	50,003	11,175	143,786	1,263,503	117
P-055	70,577	18,567	610,178	5,361,871	497
P-056	15,042	881	4,044	35,538	3
P-057	16,598	2,750	19,988	175,645	16
P-058	52,083	20,336	122,919	1,080,139	100
P-059	50,004	11,419	146,807	1,290,047	120
P-060	14,732	455	6,102	53,619	5
P-061			167,969	1,476,012	137
R-001			1,082,613	9,513,334	883
R-002			279,680	2,457,653	228
R-003			267,594	2,351,454	218
R-004	52,296	20,063	101,189	889,185	82
R-005	76,397	26,843	847,986	7,451,581	691
R-006	36,615	7,863	36,072	316,978	29
R-007	32,572	2,731	76,070	668,459	62
R-008	36,451	3,806	8,761	76,989	7
R-009	854,784	698,839	11,902,028	104,587,698	9,703
R-010	15,669	1,315	31,953	280,783	26
R-011	52,896	18,460	268,185	2,356,641	219
R-012	32,881	3,015	83,225	731,333	68
R-013	14,732	455	1,812	15,927	1
R-014	14,732	455	5,231	45,969	4
R-015	48,316	8,248	103,729	911,506	85
R-016	14,732	313	922	8,100	1
R-017	57,160	25,330	128,828	1,132,064	105
R-018	871,072	942,530	3,709,210	32,594,251	3,024
R-019	34,086	5,703	25,766	226,413	21
R-020	109,516	77,192	701,368	6,163,190	572
R-021	32,921	1,143	9,062	79,633	7
R-022	29,796	725	5,437	47,780	4
R-023	15,041	597	10,900	95,787	9
R-024	1,469,035	1,788,690	3,020,715	26,544,180	2,463
R-025	52,026	19,302	97,441	856,252	79
R-026	116,224	79,217	1,064,889	9,357,592	868
R-027	14,732	455	4,906	43,109	4
R-028	52,307	12,308	31,730	278,826	26

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
R-029	14,732	455	5,146	45,218	4
R-030	44,177	9,345	282,804	2,485,112	231
R-031	30,730	3,877	16,865	148,198	14
R-032	15,669	1,315	30,200	265,377	25
R-033	30,728	3,303	14,054	123,498	11
R-034	15,042	1,030	7,154	62,862	6
R-035	38,341	9,686	47,784	419,893	39
R-036	34,375	6,375	29,045	255,229	24
R-037	14,732	455	8,136	71,492	7
R-038	14,732	455	4,746	41,703	4
R-039	54,524	18,483	242,865	2,134,152	198
R-040	14,732	313	3,254	28,597	3
R-041	15,670	1,599	13,597	119,482	11
R-042	60,107	27,296	361,277	3,174,684	295
R-043	47,411	2,749	30,207	265,442	25
R-044	14,732	455	5,424	47,661	4
R-045	16,597	2,466	22,308	196,032	18
R-046	46,873	2,121	21,654	190,285	18
R-047	35,047	6,742	51,702	454,325	42
R-048	34,289	3,732	102,103	897,220	83
R-049	52,395	28,492	73,406	645,046	60
R-050	29,794	441	2,315	20,346	2
R-051	14,732	313	3,201	28,132	3
R-052	46,873	1,998	19,333	169,883	16
R-053	36,443	1,806	17,520	153,956	14
R-054	36,176	1,549	15,104	132,721	12
R-055	36,175	1,426	12,083	106,177	10
R-056	40,343	7,866	77,029	676,881	63
R-057	42,359	10,148	70,433	618,920	57
R-058	14,732	313	3,723	32,719	3
R-059	14,732	455	5,492	48,257	4
R-060	35,529	6,310	79,970	702,724	65
R-061	57,297	17,591	576,886	5,069,316	470
R-062	14,732	313	2,483	21,817	2
R-063	30,417	2,446	9,838	86,449	8
R-064	29,794	441	3,021	26,544	2
R-065	47,681	3,376	37,457	329,148	31
R-066	15,040	455	8,339	73,279	7
RC-001	232,273	169,005	755,783	6,641,354	616
RC-002	394,126	358,691	1,208,286	10,617,672	985
RC-003	831,089	916,704	2,061,336	18,113,748	1,681
RC-005	127,311	67,813	453,107	3,981,627	369

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
RC-006	75,918	32,116	472,355	4,150,763	385
RC-007	111,699	82,645	761,451	6,691,164	621
RC-009	100,314	62,171	401,338	3,526,710	327
RC-010	314,831	323,833	2,544,538	22,359,835	2,074
RC-011	85,061	43,415	390,649	3,432,783	318
RC-012	54,226	22,718	173,876	1,527,916	142
RC-013	57,446	22,701	300,259	2,638,491	245
RC-014	58,125	30,342	149,909	1,317,311	122
RC-015	47,191	6,919	85,788	753,855	70
RC-017	15,041	597	12,583	110,574	10
RC-018	32,921	1,143	9,062	79,633	7
RC-019	32,264	2,589	71,592	629,102	58
RC-020	14,732	313	3,797	33,363	3
RC-021	15,041	739	3,839	33,737	3
RC-022	46,927	6,424	79,143	695,458	65
RC-023	32,265	3,446	21,526	189,157	18
RC-024	43,224	11,228	78,307	688,113	64
RC-025	33,812	5,310	34,885	306,546	28
RC-026	14,732	313	1,208	10,618	1
RC-027	42,936	11,085	77,445	680,539	63
RC-028	14,732	455	7,593	66,726	6
RC-029	15,041	597	11,040	97,014	9
RC-030	104,845	64,722	604,234	5,309,638	493
RC-031	42,648	10,555	74,120	651,320	60
RC-032	125,718	65,841	438,608	3,854,215	358
RC-033	54,256	17,741	231,991	2,038,593	189
RC-034	55,586	19,855	260,990	2,293,417	213
RC-035	635,794	688,311	1,771,321	15,565,275	1,444
RC-036	56,649	21,461	282,739	2,484,535	231
RC-037	59,308	25,680	339,528	2,983,566	277
RC-038	123,845	94,836	875,246	7,691,120	714
RC-039	47,142	2,368	23,562	207,045	19
RD-001			49,540	435,325	40
RD-002			33,228	291,986	27
RD-003	50,958	5,240	62,227	546,810	51
RD-004	50,544	3,680	40,478	355,692	33
RD-005			240,245	2,111,128	196
RD-006	31,956	2,447	65,389	574,602	53
RD-007	36,757	6,028	173,217	1,522,128	141
RD-008	37,800	7,685	37,477	329,328	31
RD-009	31,956	2,299	59,393	521,913	48
RD-010	40,919	8,671	59,614	523,851	49

World Logistic Center

Cumulative Energy - Transportation Fuel

Cumulative Transportation Fuel Consumption (Annual Average) - Summary

Project ID	Construction		Operational		
	Diesel Gallons	Gasoline Gallons	Diesel Gallons	Gasoline Gallons	Natural Gas (MMBTU)
RD-011	32,572	2,731	75,208	660,880	61
RD-012			288,565	2,535,734	235
RD-013			486,152	4,272,001	396
RD-014			370,493	3,255,661	302
RD-015			203,003	1,783,866	166
RD-016			343,009	3,014,156	280
SB-001			294,824	2,590,730	240
SB-002			150,438	1,321,959	123
SB-003			284,858	2,503,161	232
SB-004			373,190	3,279,362	304
SB-005			135,335	1,189,244	110
SB-006			260,582	2,289,831	212
SB-007	46,873	2,121	20,541	180,500	17
SB-008	47,142	2,368	24,166	212,353	20
SJ-001	126,588	66,774	2,275,619	19,996,740	1,855
SJ-002	52,396	14,895	193,930	1,704,136	158
SJ-003	59,839	26,422	350,403	3,079,125	286
SJ-004	60,638	27,916	370,340	3,254,316	302
WLC-001	47,680	3,253	36,249	318,530	30
Total Cum.	23,204,429	14,744,142	118,674,194	1,042,835,763	96,752
Net Project	1,553,812	54,103	45,345	30,327	1,094
Total	24,758,241	14,798,245	118,719,539	1,042,866,090	97,846
County/ SoCalGas	275,000,000	1,052,000,000	275,000,000	1,052,000,000	873,793,575
%County/ SoCalGas	9%	1%	43.17%	99%	0.01%

Source: ESA, 2019

World Logistic Center
Cumulative Energy - Transportation Fuel

10.21 $kGCO_2$/gal https://www.eia.gov/environment/emissions/co2_vol_mass.php
2204.623 lbs/Metric Ton

Total Diesel Consumption:	54,828,262	gallons
Max Annual Consumption:	331,154	gallons
Min Annual Consumption:	14,423	gallons
Average Annual Consumption:	42,431	gallons
Straigth Average Annual Consumption:	70,313	gallons

Off-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E_TOT (lbs)	MT CO2e	Gallons	Gallons/year
B-001	3401	11.22	62,872,528.69	28,518.49	2,793,192	248,850
B-003	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
B-004	859	2.83	2,878,599.99	1,305.71	127,885	45,110
B-006	1105	3.65	4,432,085.14	2,010.36	196,901	53,992
B-007	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
B-008	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
B-009	3401	11.22	83,666,867.38	37,950.65	3,717,007	331,154
B-010	545	1.80	1,730,946.09	785.14	76,899	42,753
B-011	305	1.01	750,479.21	340.41	33,341	33,122
B-013	3401	11.22	42,078,190.00	19,086.34	1,869,377	166,546
B-014	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
C-001	301	0.99	738,143.44	334.82	32,793	33,011
C-002	1453	4.80	5,428,618.95	2,462.38	241,173	50,293
C-003	270	0.89	590,329.73	267.77	26,226	29,432
H-001	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
H-002	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
H-003	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
H-004	1105	3.65	4,432,085.14	2,010.36	196,901	53,992
H-005	119	0.39	127,583.54	57.87	5,668	14,432
H-006	422	1.39	1,663,183.38	754.41	73,889	53,053
H-007	1264	4.17	4,229,448.94	1,918.45	187,899	45,042
H-008	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
M-001	382	1.26	1,398,993.43	634.57	62,152	49,299
M-003	1264	4.17	4,229,448.94	1,918.45	187,899	45,042
M-004	270	0.89	590,329.73	267.77	26,226	29,432
M-005	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
M-006	305	1.01	750,479.21	340.41	33,341	33,122
M-007	329	1.09	1,074,950.42	487.59	47,756	43,982
M-008	1890	6.24	7,089,835.09	3,215.89	314,975	50,496
M-009	819	2.70	2,614,410.05	1,185.88	116,149	42,971
M-010	325	1.07	1,044,678.29	473.86	46,411	43,269
M-011	253	0.83	554,218.69	251.39	24,622	29,488
MV-001	309	1.02	762,062.06	345.67	33,856	33,198
MV-002	1890	6.24	6,644,047.35	3,013.69	295,170	47,321
MV-003	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
MV-005	270	0.89	590,329.73	267.77	26,226	29,432
MV-006	329	1.09	1,074,950.42	487.59	47,756	43,982
MV-007	300	0.99	736,000.66	333.84	32,698	33,025
MV-008	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-009	279	0.92	670,341.87	304.06	29,781	32,343
MV-010	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-011	300	0.99	736,000.66	333.84	32,698	33,025
MV-013	119	0.39	127,583.54	57.87	5,668	14,432
MV-014	819	2.70	2,614,410.05	1,185.88	116,149	42,971
MV-015	387	1.28	1,253,155.71	568.42	55,673	43,589
MV-016	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-017	545	1.80	1,730,946.09	785.14	76,899	42,753
MV-021	270	0.89	590,329.73	267.77	26,226	29,432

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Cumulative Energy - Transportation Fuel

Off-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E_TOT (lbs)	MT CO2e	Gallons	Gallons/year
MV-023	495	1.63	1,577,358.30	715.48	70,076	42,895
MV-024	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
MV-025	495	1.63	1,577,358.30	715.48	70,076	42,895
MV-026	545	1.80	1,730,946.09	785.14	76,899	42,753
MV-027	279	0.92	670,341.87	304.06	29,781	32,343
MV-028	300	0.99	736,000.66	333.84	32,698	33,025
MV-029	1701	5.61	5,444,877.33	2,469.75	241,896	43,089
MV-030	495	1.63	1,577,358.30	715.48	70,076	42,895
MV-031	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-032	819	2.70	2,614,410.05	1,185.88	116,149	42,971
MV-033	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-034	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-035	300	0.99	736,000.66	333.84	32,698	33,025
MV-040	253	0.83	554,218.69	251.39	24,622	29,488
MV-041	579	1.91	1,949,727.84	884.38	86,619	45,329
MV-042	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-044	529	1.75	1,796,140.04	814.72	79,796	45,705
MV-045	270	0.89	590,329.73	267.77	26,226	29,432
MV-047	300	0.99	736,000.66	333.84	32,698	33,025
MV-054	859	2.83	2,878,599.99	1,305.71	127,885	45,110
MV-056	300	0.99	736,000.66	333.84	32,698	33,025
MV-057	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-059	387	1.28	1,253,155.71	568.42	55,673	43,589
MV-060	495	1.63	1,577,358.30	715.48	70,076	42,895
MV-061	301	0.99	738,143.44	334.82	32,793	33,011
MV-062	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
MV-063	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
MV-064	495	1.63	1,577,358.30	715.48	70,076	42,895
MV-065	279	0.92	670,341.87	304.06	29,781	32,343
MV-066	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-067	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
MV-068	296	0.98	723,664.89	328.25	32,150	32,910
MV-070	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-071	279	0.92	670,341.87	304.06	29,781	32,343
MV-072	249	0.82	545,409.41	247.39	24,231	29,485
MV-073	300	0.99	736,000.66	333.84	32,698	33,025
MV-074	819	2.70	2,614,410.05	1,185.88	116,149	42,971
MV-075	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
MV-076	309	1.02	762,062.06	345.67	33,856	33,198
MV-077	329	1.09	1,074,950.42	487.59	47,756	43,982
MV-079	305	1.01	750,479.21	340.41	33,341	33,122
MV-080	253	0.83	554,218.69	251.39	24,622	29,488
MV-085	301	0.99	738,143.44	334.82	32,793	33,011
MV-087	279	0.92	670,341.87	304.06	29,781	32,343
MV-088	113	0.37	121,070.68	54.92	5,379	14,423
MV-089	113	0.37	121,070.68	54.92	5,379	14,423
MV-090	113	0.37	121,070.68	54.92	5,379	14,423
MV-091	495	1.63	1,577,358.30	715.48	70,076	42,895
MV-094	329	1.09	1,074,950.42	487.59	47,756	43,982
MV-095	301	0.99	738,143.44	334.82	32,793	33,011
MV-096	387	1.28	1,253,155.71	568.42	55,673	43,589
MV-097	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
MV-098	300	0.99	736,000.66	333.84	32,698	33,025
MV-099	300	0.99	736,000.66	333.84	32,698	33,025
MV-100	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-101	113	0.37	121,070.68	54.92	5,379	14,423
MV-102	270	0.89	590,329.73	267.77	26,226	29,432
MV-103	296	0.98	723,664.89	328.25	32,150	32,910

World Logistic Center
Cumulative Energy - Transportation Fuel

Off-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E_TOT (lbs)	MT CO2e	Gallons	Gallons/year
MV-104	305	1.01	750,479.21	340.41	33,341	33,122
MV-105	113	0.37	121,070.68	54.92	5,379	14,423
MV-106	113	0.37	121,070.68	54.92	5,379	14,423
MV-107	249	0.82	545,409.41	247.39	24,231	29,485
MV-108	113	0.37	121,070.68	54.92	5,379	14,423
MV-109	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
MV-110	279	0.92	670,341.87	304.06	29,781	32,343
MV-111	249	0.82	545,409.41	247.39	24,231	29,485
MV-112	119	0.39	127,583.54	57.87	5,668	14,432
MV-113	819	2.70	2,614,410.05	1,185.88	116,149	42,971
MV-114	113	0.37	121,070.68	54.92	5,379	14,423
MV-115	113	0.37	121,070.68	54.92	5,379	14,423
MV-116	300	0.99	736,000.66	333.84	32,698	33,025
MV-117	253	0.83	554,218.69	251.39	24,622	29,488
MV-118	249	0.82	545,409.41	247.39	24,231	29,485
MV-119	325	1.07	1,044,678.29	473.86	46,411	43,269
MV-120	301	0.99	738,143.44	334.82	32,793	33,011
MV-121	113	0.37	121,070.68	54.92	5,379	14,423
MV-123	119	0.39	127,583.54	57.87	5,668	14,432
MV-124	301	0.99	738,143.44	334.82	32,793	33,011
MV-125	249	0.82	545,409.41	247.39	24,231	29,485
MV-126	1701	5.61	5,444,877.33	2,469.75	241,896	43,089
MV-127	305	1.01	750,479.21	340.41	33,341	33,122
MV-129	859	2.83	2,878,599.99	1,305.71	127,885	45,110
MV-130	300	0.99	736,000.66	333.84	32,698	33,025
MV-131	819	2.70	2,614,410.05	1,185.88	116,149	42,971
MV-132	495	1.63	1,577,358.30	715.48	70,076	42,895
P-004	296	0.98	723,664.89	328.25	32,150	32,910
P-005	325	1.07	1,044,678.29	473.86	46,411	43,269
P-006	348	1.15	1,180,211.69	535.33	52,432	45,652
P-007	569	1.88	2,060,329.98	934.55	91,533	48,742
P-008	305	1.01	750,479.21	340.41	33,341	33,122
P-009	348	1.15	1,180,211.69	535.33	52,432	45,652
P-012	325	1.07	1,044,678.29	473.86	46,411	43,269
P-014	529	1.75	1,796,140.04	814.72	79,796	45,705
P-022	305	1.01	750,479.21	340.41	33,341	33,122
P-023	296	0.98	723,664.89	328.25	32,150	32,910
P-024	579	1.91	1,949,727.84	884.38	86,619	45,329
P-025	406	1.34	1,358,416.97	616.17	60,349	45,039
P-026	382	1.26	1,398,993.43	634.57	62,152	49,299
P-028	348	1.15	1,180,211.69	535.33	52,432	45,652
P-030	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
P-031	296	0.98	723,664.89	328.25	32,150	32,910
P-032	382	1.26	1,398,993.43	634.57	62,152	49,299
P-033	3401	11.22	31,681,020.65	14,370.27	1,407,470	125,394
P-034	1264	4.17	4,229,448.94	1,918.45	187,899	45,042
P-035	253	0.83	554,218.69	251.39	24,622	29,488
P-036	1890	6.24	6,644,047.35	3,013.69	295,170	47,321
P-039	329	1.09	1,074,950.42	487.59	47,756	43,982
P-040	819	2.70	2,614,410.05	1,185.88	116,149	42,971
P-041	296	0.98	723,664.89	328.25	32,150	32,910
P-042	325	1.07	1,044,678.29	473.86	46,411	43,269
P-043	325	1.07	1,044,678.29	473.86	46,411	43,269
P-044	300	0.99	736,000.66	333.84	32,698	33,025
P-045	296	0.98	723,664.89	328.25	32,150	32,910
P-046	1701	5.61	5,444,877.33	2,469.75	241,896	43,089
P-047	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
P-048	387	1.28	1,253,155.71	568.42	55,673	43,589

World Logistic Center
Cumulative Energy - Transportation Fuel

Off-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E_TOT (lbs)	MT CO2e	Gallons	Gallons/year
P-049	819	2.70	2,614,410.05	1,185.88	116,149	42,971
P-050	270	0.89	590,329.73	267.77	26,226	29,432
P-051	325	1.07	1,044,678.29	473.86	46,411	43,269
P-052	495	1.63	1,577,358.30	715.48	70,076	42,895
P-053	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
P-054	1701	5.61	5,444,877.33	2,469.75	241,896	43,089
P-055	348	1.15	1,180,211.69	535.33	52,432	45,652
P-056	113	0.37	121,070.68	54.92	5,379	14,423
P-057	119	0.39	127,583.54	57.87	5,668	14,432
P-058	305	1.01	750,479.21	340.41	33,341	33,122
P-059	1701	5.61	5,444,877.33	2,469.75	241,896	43,089
P-060	113	0.37	121,070.68	54.92	5,379	14,423
R-004	325	1.07	1,044,678.29	473.86	46,411	43,269
R-005	382	1.26	1,398,993.43	634.57	62,152	49,299
R-006	296	0.98	723,664.89	328.25	32,150	32,910
R-007	253	0.83	554,218.69	251.39	24,622	29,488
R-008	300	0.99	736,000.66	333.84	32,698	33,025
R-009	3401	11.22	23,154,451.98	10,502.68	1,028,666	91,645
R-010	119	0.39	127,583.54	57.87	5,668	14,432
R-011	309	1.02	762,062.06	345.67	33,856	33,198
R-012	253	0.83	554,218.69	251.39	24,622	29,488
R-013	113	0.37	121,070.68	54.92	5,379	14,423
R-014	113	0.37	121,070.68	54.92	5,379	14,423
R-015	1207	3.98	3,875,133.79	1,757.73	172,158	43,218
R-016	113	0.37	121,070.68	54.92	5,379	14,423
R-017	329	1.09	1,074,950.42	487.59	47,756	43,982
R-018	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
R-019	279	0.92	670,341.87	304.06	29,781	32,343
R-020	579	1.91	1,949,727.84	884.38	86,619	45,329
R-021	279	0.92	670,341.87	304.06	29,781	32,343
R-022	249	0.82	545,409.41	247.39	24,231	29,485
R-023	113	0.37	121,070.68	54.92	5,379	14,423
R-024	3401	11.22	83,666,867.38	37,950.65	3,717,007	331,154
R-025	325	1.07	1,044,678.29	473.86	46,411	43,269
R-026	916	3.02	3,232,915.14	1,466.43	143,626	47,510
R-027	113	0.37	121,070.68	54.92	5,379	14,423
R-028	495	1.63	1,577,358.30	715.48	70,076	42,895
R-029	113	0.37	121,070.68	54.92	5,379	14,423
R-030	301	0.99	738,143.44	334.82	32,793	33,011
R-031	249	0.82	545,409.41	247.39	24,231	29,485
R-032	119	0.39	127,583.54	57.87	5,668	14,432
R-033	249	0.82	545,409.41	247.39	24,231	29,485
R-034	113	0.37	121,070.68	54.92	5,379	14,423
R-035	300	0.99	736,000.66	333.84	32,698	33,025
R-036	279	0.92	670,341.87	304.06	29,781	32,343
R-037	113	0.37	121,070.68	54.92	5,379	14,423
R-038	113	0.37	121,070.68	54.92	5,379	14,423
R-039	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
R-040	113	0.37	121,070.68	54.92	5,379	14,423
R-041	119	0.39	127,583.54	57.87	5,668	14,432
R-042	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
R-043	325	1.07	1,044,678.29	473.86	46,411	43,269
R-044	113	0.37	121,070.68	54.92	5,379	14,423
R-045	119	0.39	127,583.54	57.87	5,668	14,432
R-046	325	1.07	1,044,678.29	473.86	46,411	43,269
R-047	253	0.83	554,218.69	251.39	24,622	29,488
R-048	270	0.89	590,329.73	267.77	26,226	29,432
R-049	1207	3.98	3,875,133.79	1,757.73	172,158	43,218

World Logistic Center
Cumulative Energy - Transportation Fuel

Off-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E_TOT (lbs)	MT CO2e	Gallons	Gallons/year
R-050	249	0.82	545,409.41	247.39	24,231	29,485
R-051	113	0.37	121,070.68	54.92	5,379	14,423
R-052	325	1.07	1,044,678.29	473.86	46,411	43,269
R-053	300	0.99	736,000.66	333.84	32,698	33,025
R-054	300	0.99	736,000.66	333.84	32,698	33,025
R-055	300	0.99	736,000.66	333.84	32,698	33,025
R-056	296	0.98	723,664.89	328.25	32,150	32,910
R-057	296	0.98	723,664.89	328.25	32,150	32,910
R-058	113	0.37	121,070.68	54.92	5,379	14,423
R-059	113	0.37	121,070.68	54.92	5,379	14,423
R-060	270	0.89	590,329.73	267.77	26,226	29,432
R-061	328	1.08	825,272.43	374.34	36,664	33,869
R-062	113	0.37	121,070.68	54.92	5,379	14,423
R-063	249	0.82	545,409.41	247.39	24,231	29,485
R-064	249	0.82	545,409.41	247.39	24,231	29,485
R-065	325	1.07	1,044,678.29	473.86	46,411	43,269
R-066	113	0.37	121,070.68	54.92	5,379	14,423
RC-001	3401	11.22	31,681,020.65	14,370.27	1,407,470	125,394
RC-002	3401	11.22	42,078,190.00	19,086.34	1,869,377	166,546
RC-003	3401	11.22	62,872,528.69	28,518.49	2,793,192	248,850
RC-005	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
RC-006	382	1.26	1,398,993.43	634.57	62,152	49,299
RC-007	819	2.70	2,614,410.05	1,185.88	116,149	42,971
RC-009	569	1.88	2,060,329.98	934.55	91,533	48,742
RC-010	3401	11.22	11,332,469.69	5,140.32	503,459	44,854
RC-011	329	1.09	1,074,950.42	487.59	47,756	43,982
RC-012	305	1.01	750,479.21	340.41	33,341	33,122
RC-013	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
RC-014	387	1.28	1,253,155.71	568.42	55,673	43,589
RC-015	819	2.70	2,614,410.05	1,185.88	116,149	42,971
RC-017	113	0.37	121,070.68	54.92	5,379	14,423
RC-018	279	0.92	670,341.87	304.06	29,781	32,343
RC-019	253	0.83	554,218.69	251.39	24,622	29,488
RC-020	113	0.37	121,070.68	54.92	5,379	14,423
RC-021	113	0.37	121,070.68	54.92	5,379	14,423
RC-022	819	2.70	2,614,410.05	1,185.88	116,149	42,971
RC-023	249	0.82	545,409.41	247.39	24,231	29,485
RC-024	296	0.98	723,664.89	328.25	32,150	32,910
RC-025	253	0.83	554,218.69	251.39	24,622	29,488
RC-026	113	0.37	121,070.68	54.92	5,379	14,423
RC-027	296	0.98	723,664.89	328.25	32,150	32,910
RC-028	113	0.37	121,070.68	54.92	5,379	14,423
RC-029	113	0.37	121,070.68	54.92	5,379	14,423
RC-030	529	1.75	1,796,140.04	814.72	79,796	45,705
RC-031	296	0.98	723,664.89	328.25	32,150	32,910
RC-032	3401	11.22	21,283,851.30	9,654.19	945,562	84,242
RC-033	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
RC-034	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
RC-035	3401	11.22	52,475,359.34	23,802.42	2,331,285	207,698
RC-036	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
RC-037	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
RC-038	859	2.83	2,878,599.99	1,305.71	127,885	45,110
RC-039	325	1.07	1,044,678.29	473.86	46,411	43,269
RD-003	545	1.80	1,730,946.09	785.14	76,899	42,753
RD-004	387	1.28	1,253,155.71	568.42	55,673	43,589
RD-006	253	0.83	554,218.69	251.39	24,622	29,488
RD-007	270	0.89	590,329.73	267.77	26,226	29,432
RD-008	300	0.99	736,000.66	333.84	32,698	33,025

World Logistic Center
Cumulative Energy - Transportation Fuel

Off-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E_TOT (lbs)	MT CO2e	Gallons	Gallons/year
RD-009	253	0.83	554,218.69	251.39	24,622	29,488
RD-010	296	0.98	723,664.89	328.25	32,150	32,910
RD-011	253	0.83	554,218.69	251.39	24,622	29,488
SB-007	325	1.07	1,044,678.29	473.86	46,411	43,269
SB-008	325	1.07	1,044,678.29	473.86	46,411	43,269
SJ-001	1105	3.65	4,432,085.14	2,010.36	196,901	53,992
SJ-002	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
SJ-003	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
SJ-004	3401	11.22	10,886,681.95	4,938.12	483,655	43,090
WLC-001	325	1.07	1,044,678.29	473.86	46,411	43,269

World Logistic Center
Cumulative Energy -Transportation Fuel

10.21 $kGCO_2$/gal https://www.eia.gov/environment/emissions/co2_vol_mass.php
2204.623 lbs/Metric Ton

Total Diesel Consumption:	88,547,190	gallons
Max Annual Consumption:	1,137,881	gallons
Min Annual Consumption:	309	gallons
Average Annual Consumption:	37,584	gallons
Straigth Average Annual Consumption:	115,400	gallons

On-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
B-001	3401	11.22	142,267,719.23	64,531.54	6,320,425	563,096
B-003	3401	11.22	13,300,173.35	6,032.86	590,877	52,642
B-004	819	2.70	4,566,054.59	2,071.13	202,853	75,048
B-006	819	2.70	4,870,491.67	2,209.22	216,378	80,052
B-007	3401	11.22	2,955,720.52	1,340.69	131,312	11,699
B-008	3401	11.22	9,404,221.31	4,265.68	417,795	37,222
B-009	3401	11.22	255,785,305.76	116,022.24	11,363,589	1,012,399
B-010	545	1.80	321,356.05	145.76	14,277	7,937
B-011	300	0.99	273,004.10	123.83	12,129	12,250
B-013	3401	11.22	54,542,297.76	24,739.97	2,423,111	215,878
B-014	3401	11.22	10,076,219.23	4,570.50	447,649	39,882
C-001	279	0.92	219,520.22	99.57	9,752	10,591
C-002	1207	3.98	10,155,438.97	4,606.43	451,168	113,259
C-003	249	0.82	84,162.40	38.18	3,739	4,550
H-001	3401	11.22	4,232,199.39	1,919.69	188,021	16,751
H-002	3401	11.22	3,224,335.54	1,462.53	143,245	12,762
H-003	3401	11.22	13,434,675.18	6,093.87	596,853	53,174
H-004	819	2.70	4,565,996.02	2,071.10	202,850	75,047
H-005	113	0.37	10,375.99	4.71	461	1,236
H-006	325	1.07	726,253.46	329.42	32,265	30,081
H-007	1207	3.98	943,939.46	428.16	41,936	10,527
H-008	3401	11.22	4,318,651.85	1,958.91	191,862	17,093
M-001	325	1.07	1,266,636.33	574.54	56,272	52,463
M-003	1207	3.98	11,432,787.35	5,185.82	507,916	127,505
M-004	249	0.82	118,389.77	53.70	5,260	6,400
M-005	3401	11.22	47,955,023.08	21,752.03	2,130,463	189,806
M-006	300	0.99	267,293.43	121.24	11,875	11,994
M-007	325	1.07	842,506.61	382.15	37,429	34,896
M-008	1701	5.61	19,588,252.75	8,885.08	870,233	155,015
M-009	819	2.70	240,753.14	109.20	10,696	3,957
M-010	325	1.07	658,206.65	298.56	29,242	27,262
M-011	249	0.82	62,781.05	28.48	2,789	3,394
MV-001	300	0.99	402,811.20	182.71	17,895	18,074
MV-002	1701	5.61	1,785,471.92	809.88	79,322	14,130
MV-003	1207	3.98	8,958,903.64	4,063.69	398,011	99,915
MV-005	249	0.82	129,792.09	58.87	5,766	7,017
MV-006	325	1.07	920,407.34	417.49	40,890	38,122
MV-007	300	0.99	76,196.27	34.56	3,385	3,419
MV-008	325	1.07	106,483.22	48.30	4,731	4,410
MV-009	279	0.92	11,958.93	5.42	531	577
MV-010	325	1.07	99,974.29	45.35	4,441	4,141
MV-011	300	0.99	70,218.89	31.85	3,120	3,151
MV-013	113	0.37	12,988.91	5.89	577	1,547
MV-014	819	2.70	513,092.28	232.73	22,795	8,433
MV-015	387	1.28	191,958.60	87.07	8,528	6,677
MV-016	325	1.07	86,992.97	39.46	3,865	3,603
MV-017	545	1.80	321,356.05	145.76	14,277	7,937

World Logistic Center
Cumulative Energy -Transportation Fuel

On-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
MV-021	249	0.82	95,638.28	43.38	4,249	5,170
MV-023	495	1.63	634,240.16	287.69	28,177	17,248
MV-024	1207	3.98	409,130.69	185.58	18,176	4,563
MV-025	495	1.63	288,003.00	130.64	12,795	7,832
MV-026	545	1.80	321,377.50	145.77	14,278	7,938
MV-027	279	0.92	36,121.68	16.38	1,605	1,743
MV-028	300	0.99	112,446.37	51.00	4,996	5,046
MV-029	1701	5.61	1,008,066.35	457.25	44,785	7,978
MV-030	495	1.63	288,003.00	130.64	12,795	7,832
MV-031	325	1.07	100,009.88	45.36	4,443	4,142
MV-032	819	2.70	529,127.31	240.01	23,507	8,697
MV-033	325	1.07	100,009.88	45.36	4,443	4,142
MV-034	325	1.07	99,998.02	45.36	4,443	4,142
MV-035	300	0.99	70,218.89	31.85	3,120	3,151
MV-040	249	0.82	97,103.33	44.05	4,314	5,249
MV-041	545	1.80	2,577,057.60	1,168.93	114,489	63,652
MV-042	325	1.07	541,351.04	245.55	24,050	22,422
MV-044	495	1.63	1,936,483.62	878.37	86,031	52,661
MV-045	249	0.82	101,260.42	45.93	4,499	5,474
MV-047	300	0.99	64,242.46	29.14	2,854	2,883
MV-054	819	2.70	4,566,083.87	2,071.14	202,854	75,049
MV-056	300	0.99	64,242.46	29.14	2,854	2,883
MV-057	325	1.07	87,016.70	39.47	3,866	3,604
MV-059	387	1.28	191,958.60	87.07	8,528	6,677
MV-060	495	1.63	297,558.38	134.97	13,219	8,092
MV-061	279	0.92	201,622.83	91.45	8,957	9,728
MV-062	3401	11.22	3,963,206.18	1,797.68	176,070	15,686
MV-063	1207	3.98	577,438.28	261.92	25,653	6,440
MV-064	495	1.63	297,523.54	134.95	13,218	8,091
MV-065	279	0.92	36,110.76	16.38	1,604	1,742
MV-066	325	1.07	237,622.39	107.78	10,557	9,842
MV-067	1207	3.98	433,034.63	196.42	19,238	4,829
MV-068	279	0.92	225,719.23	102.38	10,028	10,890
MV-070	325	1.07	231,076.92	104.81	10,266	9,571
MV-071	279	0.92	36,088.93	16.37	1,603	1,741
MV-072	249	0.82	17,256.72	7.83	767	933
MV-073	300	0.99	118,445.57	53.73	5,262	5,315
MV-074	819	2.70	339,044.34	153.79	15,062	5,573
MV-075	3401	11.22	21,222,716.73	9,626.46	942,846	84,000
MV-076	300	0.99	414,720.40	188.11	18,424	18,609
MV-077	325	1.07	693,191.29	314.43	30,796	28,711
MV-079	300	0.99	416,573.63	188.95	18,507	18,692
MV-080	249	0.82	45,651.23	20.71	2,028	2,468
MV-085	279	0.92	159,872.59	72.52	7,103	7,714
MV-087	279	0.92	42,120.79	19.11	1,871	2,032
MV-088	113	0.37	5,217.06	2.37	232	621
MV-089	113	0.37	5,217.06	2.37	232	621
MV-090	113	0.37	5,188.35	2.35	230	618
MV-091	495	1.63	297,523.54	134.95	13,218	8,091
MV-094	325	1.07	311,634.99	141.36	13,845	12,908
MV-095	279	0.92	195,657.32	88.75	8,692	9,440
MV-096	387	1.28	207,965.98	94.33	9,239	7,234
MV-097	1207	3.98	553,446.54	251.04	24,588	6,172
MV-098	300	0.99	64,242.46	29.14	2,854	2,883
MV-099	300	0.99	118,445.57	53.73	5,262	5,315
MV-100	325	1.07	198,364.26	89.98	8,813	8,216
MV-101	113	0.37	5,188.35	2.35	230	618

World Logistic Center
Cumulative Energy -Transportation Fuel

On-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
MV-102	249	0.82	95,659.64	43.39	4,250	5,171
MV-103	279	0.92	207,788.23	94.25	9,231	10,025
MV-104	300	0.99	422,540.10	191.66	18,772	18,960
MV-105	113	0.37	5,217.06	2.37	232	621
MV-106	113	0.37	5,217.06	2.37	232	621
MV-107	249	0.82	5,738.60	2.60	255	310
MV-108	113	0.37	2,594.65	1.18	115	309
MV-109	3401	11.22	15,986,631.38	7,251.41	710,227	63,275
MV-110	279	0.92	42,120.79	19.11	1,871	2,032
MV-111	249	0.82	11,508.34	5.22	511	622
MV-112	113	0.37	5,226.79	2.37	232	623
MV-113	819	2.70	256,788.17	116.48	11,408	4,221
MV-114	113	0.37	2,599.40	1.18	115	310
MV-115	113	0.37	2,594.65	1.18	115	309
MV-116	300	0.99	70,218.89	31.85	3,120	3,151
MV-117	249	0.82	51,410.53	23.32	2,284	2,779
MV-118	249	0.82	5,738.60	2.60	255	310
MV-119	325	1.07	87,004.83	39.46	3,865	3,604
MV-120	279	0.92	213,543.79	96.86	9,487	10,303
MV-121	113	0.37	2,599.40	1.18	115	310
MV-123	113	0.37	7,782.05	3.53	346	927
MV-124	279	0.92	159,872.59	72.52	7,103	7,714
MV-125	249	0.82	17,256.72	7.83	767	933
MV-126	1701	5.61	873,640.31	396.28	38,813	6,914
MV-127	300	0.99	386,722.34	175.41	17,181	17,352
MV-129	819	2.70	4,149,558.43	1,882.21	184,349	68,203
MV-130	300	0.99	273,248.03	123.94	12,139	12,261
MV-131	819	2.70	3,941,267.73	1,787.73	175,096	64,779
MV-132	495	1.63	1,926,928.24	874.04	85,606	52,401
P-004	279	0.92	195,845.44	88.83	8,701	9,449
P-005	325	1.07	554,344.23	251.45	24,627	22,960
P-006	325	1.07	764,594.96	346.81	33,968	31,669
P-007	495	1.63	1,867,826.46	847.23	82,981	50,794
P-008	300	0.99	291,168.30	132.07	12,936	13,065
P-009	325	1.07	810,035.03	367.43	35,987	33,551
P-012	325	1.07	547,848.11	248.50	24,339	22,691
P-014	495	1.63	2,079,417.84	943.21	92,381	56,548
P-022	300	0.99	428,516.52	194.37	19,037	19,228
P-023	279	0.92	201,822.72	91.55	8,966	9,738
P-024	545	1.80	2,598,730.31	1,178.76	115,452	64,187
P-025	387	1.28	1,503,410.25	681.94	66,791	52,294
P-026	325	1.07	991,786.33	449.87	44,061	41,079
P-028	325	1.07	836,022.35	379.21	37,141	34,627
P-030	3401	11.22	3,560,457.08	1,615.00	158,178	14,092
P-031	279	0.92	76,760.98	34.82	3,410	3,704
P-032	325	1.07	687,346.04	311.77	30,536	28,469
P-033	3401	11.22	40,101,621.58	18,189.79	1,781,566	158,722
P-034	1207	3.98	12,489,603.12	5,665.19	554,867	139,291
P-035	249	0.82	28,743.04	13.04	1,277	1,554
P-036	1701	5.61	19,289,708.41	8,749.66	856,970	152,652
P-039	325	1.07	959,350.35	435.15	42,620	39,735
P-040	819	2.70	545,130.45	247.27	24,218	8,960
P-041	279	0.92	171,959.85	78.00	7,640	8,297
P-042	325	1.07	106,495.08	48.31	4,731	4,411
P-043	325	1.07	106,483.22	48.30	4,731	4,410
P-044	300	0.99	118,423.74	53.72	5,261	5,314
P-045	279	0.92	76,760.98	34.82	3,410	3,704

World Logistic Center
Cumulative Energy -Transportation Fuel

On-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
P-046	1701	5.61	1,555,369.71	705.50	69,099	12,309
P-047	3401	11.22	3,761,954.21	1,706.39	167,130	14,890
P-048	387	1.28	207,936.75	94.32	9,238	7,233
P-049	819	2.70	529,127.31	240.01	23,507	8,697
P-050	249	0.82	95,554.28	43.34	4,245	5,166
P-051	325	1.07	87,004.83	39.46	3,865	3,604
P-052	495	1.63	288,003.00	130.64	12,795	7,832
P-053	1207	3.98	433,034.63	196.42	19,238	4,829
P-054	1701	5.61	873,706.85	396.31	38,816	6,914
P-055	325	1.07	601,779.60	272.96	26,735	24,925
P-056	113	0.37	5,197.84	2.36	231	619
P-057	113	0.37	18,181.30	8.25	808	2,166
P-058	300	0.99	422,561.93	191.67	18,773	18,961
P-059	1701	5.61	873,829.48	396.36	38,821	6,915
P-060	113	0.37	2,599.40	1.18	115	310
R-004	325	1.07	217,939.46	98.86	9,682	9,027
R-005	325	1.07	654,259.19	296.77	29,066	27,099
R-006	279	0.92	76,783.67	34.83	3,411	3,705
R-007	249	0.82	57,053.55	25.88	2,535	3,084
R-008	300	0.99	76,362.85	34.64	3,393	3,426
R-009	3401	11.22	192,809,167.53	87,456.75	8,565,794	763,139
R-010	113	0.37	10,380.74	4.71	461	1,237
R-011	300	0.99	438,983.95	199.12	19,502	19,697
R-012	249	0.82	62,759.69	28.47	2,788	3,393
R-013	113	0.37	2,599.40	1.18	115	310
R-014	113	0.37	2,599.40	1.18	115	310
R-015	1207	3.98	457,117.73	207.35	20,308	5,098
R-016	113	0.37	2,594.65	1.18	115	309
R-017	325	1.07	318,167.65	144.32	14,135	13,178
R-018	3401	11.22	198,794,786.00	90,171.78	8,831,712	786,830
R-019	279	0.92	36,132.59	16.39	1,605	1,743
R-020	545	1.80	2,598,710.52	1,178.76	115,451	64,187
R-021	279	0.92	11,981.62	5.43	532	578
R-022	249	0.82	5,738.60	2.60	255	310
R-023	113	0.37	5,188.35	2.35	230	618
R-024	3401	11.22	287,488,800.99	130,402.70	12,772,057	1,137,881
R-025	325	1.07	211,405.85	95.89	9,392	8,756
R-026	819	2.70	4,180,707.71	1,896.34	185,733	68,715
R-027	113	0.37	2,599.40	1.18	115	310
R-028	495	1.63	346,097.49	156.99	15,376	9,412
R-029	113	0.37	2,599.40	1.18	115	310
R-030	279	0.92	231,441.19	104.98	10,282	11,167
R-031	249	0.82	23,026.46	10.44	1,023	1,245
R-032	113	0.37	10,380.74	4.71	461	1,237
R-033	249	0.82	22,984.22	10.43	1,021	1,243
R-034	113	0.37	5,202.83	2.36	231	620
R-035	300	0.99	118,490.18	53.75	5,264	5,317
R-036	279	0.92	42,131.71	19.11	1,872	2,033
R-037	113	0.37	2,599.40	1.18	115	310
R-038	113	0.37	2,599.40	1.18	115	310
R-039	3401	11.22	2,888,837.35	1,310.35	128,340	11,434
R-040	113	0.37	2,594.65	1.18	115	309
R-041	113	0.37	10,390.23	4.71	462	1,238
R-042	3401	11.22	4,299,450.31	1,950.20	191,009	17,017
R-043	325	1.07	99,986.15	45.35	4,442	4,141
R-044	113	0.37	2,599.40	1.18	115	310
R-045	113	0.37	18,171.81	8.24	807	2,165

World Logistic Center
Cumulative Energy -Transportation Fuel

On-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
R-046	325	1.07	87,004.83	39.46	3,865	3,604
R-047	249	0.82	102,830.83	46.64	4,568	5,559
R-048	249	0.82	89,858.10	40.76	3,992	4,858
R-049	1207	3.98	822,902.29	373.26	36,558	9,177
R-050	249	0.82	5,717.72	2.59	254	309
R-051	113	0.37	2,594.65	1.18	115	309
R-052	325	1.07	86,992.97	39.46	3,865	3,603
R-053	300	0.99	76,185.35	34.56	3,385	3,418
R-054	300	0.99	70,218.89	31.85	3,120	3,151
R-055	300	0.99	70,207.98	31.85	3,119	3,150
R-056	279	0.92	154,051.54	69.88	6,844	7,433
R-057	279	0.92	195,845.44	88.83	8,701	9,449
R-058	113	0.37	2,594.65	1.18	115	309
R-059	113	0.37	2,599.40	1.18	115	310
R-060	249	0.82	112,788.98	51.16	5,011	6,097
R-061	300	0.99	522,118.14	236.83	23,196	23,428
R-062	113	0.37	2,594.65	1.18	115	309
R-063	249	0.82	17,235.84	7.82	766	932
R-064	249	0.82	5,717.72	2.59	254	309
R-065	325	1.07	106,506.95	48.31	4,732	4,411
R-066	113	0.37	5,183.61	2.35	230	617
RC-001	3401	11.22	27,003,460.33	12,248.56	1,199,663	106,880
RC-002	3401	11.22	57,498,719.23	26,080.98	2,554,454	227,580
RC-003	3401	11.22	147,104,385.91	66,725.42	6,535,300	582,239
RC-005	3401	11.22	10,881,696.55	4,935.85	483,433	43,070
RC-006	325	1.07	642,676.68	291.51	28,552	26,619
RC-007	819	2.70	4,181,538.03	1,896.71	185,770	68,728
RC-009	495	1.63	1,896,421.26	860.20	84,251	51,572
RC-010	3401	11.22	68,210,389.39	30,939.71	3,030,334	269,977
RC-011	325	1.07	991,798.20	449.87	44,062	41,079
RC-012	300	0.99	470,322.57	213.33	20,895	21,104
RC-013	3401	11.22	3,627,329.80	1,645.33	161,149	14,357
RC-014	387	1.28	417,901.05	189.56	18,566	14,536
RC-015	819	2.70	256,788.17	116.48	11,408	4,221
RC-017	113	0.37	5,188.35	2.35	230	618
RC-018	279	0.92	11,981.62	5.43	532	578
RC-019	249	0.82	51,357.85	23.30	2,282	2,776
RC-020	113	0.37	2,594.65	1.18	115	309
RC-021	113	0.37	5,193.10	2.36	231	619
RC-022	819	2.70	240,723.86	109.19	10,694	3,957
RC-023	249	0.82	51,420.97	23.32	2,284	2,780
RC-024	279	0.92	213,765.52	96.96	9,497	10,314
RC-025	249	0.82	79,984.43	36.28	3,553	4,324
RC-026	113	0.37	2,594.65	1.18	115	309
RC-027	279	0.92	207,810.07	94.26	9,232	10,026
RC-028	113	0.37	2,599.40	1.18	115	310
RC-029	113	0.37	5,188.35	2.35	230	618
RC-030	495	1.63	2,174,702.07	986.43	96,614	59,139
RC-031	279	0.92	201,822.72	91.55	8,966	9,738
RC-032	3401	11.22	10,479,213.50	4,753.29	465,552	41,477
RC-033	3401	11.22	2,821,341.27	1,279.74	125,342	11,167
RC-034	3401	11.22	3,157,217.65	1,432.09	140,263	12,496
RC-035	3401	11.22	108,159,705.74	49,060.41	4,805,133	428,096
RC-036	3401	11.22	3,425,832.67	1,553.93	152,197	13,559
RC-037	3401	11.22	4,097,574.98	1,858.63	182,040	16,218
RC-038	819	2.70	4,790,382.92	2,172.88	212,819	78,735
RC-039	325	1.07	93,489.08	42.41	4,153	3,872

World Logistic Center
Cumulative Energy -Transportation Fuel

On-Road Construction Diesel Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
RD-003	545	1.80	332,193.23	150.68	14,758	8,205
RD-004	387	1.28	199,947.20	90.69	8,883	6,955
RD-006	249	0.82	45,662.15	20.71	2,029	2,469
RD-007	249	0.82	135,509.14	61.47	6,020	7,326
RD-008	300	0.99	106,425.33	48.27	4,728	4,775
RD-009	249	0.82	45,651.23	20.71	2,028	2,468
RD-010	279	0.92	166,005.25	75.30	7,375	8,009
RD-011	249	0.82	57,053.55	25.88	2,535	3,084
SB-007	325	1.07	87,004.83	39.46	3,865	3,604
SB-008	325	1.07	93,489.08	42.41	4,153	3,872
SJ-001	819	2.70	4,416,861.47	2,003.45	196,225	72,596
SJ-002	3401	11.22	2,351,229.12	1,066.50	104,456	9,306
SJ-003	3401	11.22	4,231,821.20	1,919.52	188,004	16,750
SJ-004	3401	11.22	4,433,573.94	2,011.03	196,967	17,548
WLC-001	325	1.07	106,495.08	48.31	4,731	4,411

World Logistic Center
Cumulative Energy - Transportation Fuels

8.89 $kGCO_2$/gal https://www.eia.gov/environment/emissions/co2_vol_mass.php
2204.623 lbs/Metric Ton

Total Gasoline Consumption:	127,085,549	gallons
Max Annual Consumption:	1,788,690	gallons
Min Annual Consumption:	313	gallons
Average Annual Consumption:	50,842	gallons
Straigth Average Annual Consumption:	165,626	gallons

On-Road Construction Gasoline Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
B-001	3401	11.22	194,955,919.05	88,430.50	9,947,188	886,209
B-003	3401	11.22	18,303,688.08	8,302.41	933,905	83,203
B-004	819	2.70	4,782,346.36	2,169.24	244,008	90,274
B-006	819	2.70	5,108,484.58	2,317.17	260,649	96,431
B-007	3401	11.22	4,095,138.22	1,857.52	208,945	18,615
B-008	3401	11.22	12,954,760.09	5,876.18	660,988	58,888
B-009	3401	11.22	350,288,766.12	158,888.28	17,872,698	1,592,304
B-010	545	1.80	171,353.74	77.72	8,743	4,861
B-011	300	0.99	183,300.16	83.14	9,352	9,446
B-013	3401	11.22	74,659,559.82	33,865.00	3,809,336	339,379
B-014	3401	11.22	13,938,673.27	6,322.47	711,190	63,361
C-001	279	0.92	161,295.67	73.16	8,230	8,938
C-002	1207	3.98	9,646,492.25	4,375.57	492,191	123,557
C-003	249	0.82	57,814.90	26.22	2,950	3,590
H-001	3401	11.22	5,895,208.29	2,674.02	300,790	26,798
H-002	3401	11.22	4,448,430.87	2,017.77	226,971	20,221
H-003	3401	11.22	18,522,831.24	8,401.81	945,086	84,199
H-004	819	2.70	4,769,538.67	2,163.43	243,355	90,032
H-005	113	0.37	8,570.78	3.89	437	1,173
H-006	325	1.07	585,527.87	265.59	29,875	27,853
H-007	1207	3.98	2,556,405.10	1,159.57	130,435	32,744
H-008	3401	11.22	10,204,146.27	4,628.52	520,644	46,385
M-001	325	1.07	810,251.97	367.52	41,341	38,543
M-003	1207	3.98	11,930,606.95	5,411.63	608,732	152,814
M-004	249	0.82	83,166.41	37.72	4,243	5,164
M-005	3401	11.22	50,048,333.19	22,701.54	2,553,604	227,504
M-006	300	0.99	234,256.42	106.26	11,952	12,072
M-007	325	1.07	759,573.26	344.54	38,756	36,132
M-008	1701	5.61	19,625,292.39	8,901.88	1,001,336	178,369
M-009	819	2.70	346,721.69	157.27	17,691	6,545
M-010	325	1.07	630,209.27	285.86	32,155	29,978
M-011	249	0.82	53,231.04	24.15	2,716	3,305
MV-001	300	0.99	246,507.21	111.81	12,577	12,703
MV-002	1701	5.61	3,480,554.13	1,578.75	177,587	31,634
MV-003	1207	3.98	9,352,867.53	4,242.39	477,209	119,796
MV-005	249	0.82	90,129.25	40.88	4,599	5,596
MV-006	325	1.07	841,524.38	381.71	42,937	40,030
MV-007	300	0.99	37,425.19	16.98	1,910	1,929
MV-008	325	1.07	65,783.71	29.84	3,356	3,129
MV-009	279	0.92	15,660.86	7.10	799	868
MV-010	325	1.07	55,192.06	25.03	2,816	2,625
MV-011	300	0.99	30,051.44	13.63	1,533	1,549
MV-013	113	0.37	14,852.11	6.74	758	2,032
MV-014	819	2.70	281,762.49	127.81	14,376	5,319
MV-015	387	1.28	85,717.75	38.88	4,374	3,424
MV-016	325	1.07	42,000.60	19.05	2,143	1,998
MV-017	545	1.80	171,353.74	77.72	8,743	4,861

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Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
MV-021	249	0.82	80,865.20	36.68	4,126	5,021
MV-023	495	1.63	1,186,267.68	538.08	60,527	37,050
MV-024	1207	3.98	604,739.88	274.31	30,855	7,746
MV-025	495	1.63	133,755.74	60.67	6,825	4,177
MV-026	545	1.80	176,045.06	79.85	8,982	4,994
MV-027	279	0.92	100,538.24	45.60	5,130	5,571
MV-028	300	0.99	166,049.02	75.32	8,472	8,557
MV-029	1701	5.61	1,406,289.22	637.88	71,753	12,781
MV-030	495	1.63	133,755.74	60.67	6,825	4,177
MV-031	325	1.07	62,976.32	28.57	3,213	2,996
MV-032	819	2.70	301,557.37	136.78	15,386	5,692
MV-033	325	1.07	62,976.32	28.57	3,213	2,996
MV-034	325	1.07	60,381.56	27.39	3,081	2,872
MV-035	300	0.99	30,051.44	13.63	1,533	1,549
MV-040	249	0.82	99,340.56	45.06	5,069	6,168
MV-041	545	1.80	2,699,181.56	1,224.33	137,720	76,567
MV-042	325	1.07	506,296.59	229.65	25,833	24,084
MV-044	495	1.63	1,827,774.47	829.06	93,258	57,085
MV-045	249	0.82	67,065.58	30.42	3,422	4,164
MV-047	300	0.99	22,885.27	10.38	1,168	1,179
MV-054	819	2.70	4,788,750.21	2,172.14	244,335	90,395
MV-056	300	0.99	22,885.27	10.38	1,168	1,179
MV-057	325	1.07	47,190.10	21.41	2,408	2,245
MV-059	387	1.28	85,717.75	38.88	4,374	3,424
MV-060	495	1.63	149,362.82	67.75	7,621	4,665
MV-061	279	0.92	146,771.85	66.57	7,489	8,133
MV-062	3401	11.22	5,459,205.34	2,476.25	278,544	24,816
MV-063	1207	3.98	819,197.50	371.58	41,798	10,493
MV-064	495	1.63	141,744.63	64.29	7,232	4,427
MV-065	279	0.92	98,151.07	44.52	5,008	5,439
MV-066	325	1.07	487,687.77	221.21	24,883	23,199
MV-067	1207	3.98	604,758.62	274.31	30,856	7,746
MV-068	279	0.92	217,139.38	98.49	11,079	12,032
MV-070	325	1.07	469,104.28	212.78	23,935	22,315
MV-071	279	0.92	93,376.73	42.35	4,764	5,174
MV-072	249	0.82	43,958.08	19.94	2,243	2,729
MV-073	300	0.99	178,197.12	80.83	9,092	9,183
MV-074	819	2.70	920,610.37	417.58	46,972	17,378
MV-075	3401	11.22	57,572,289.27	26,114.35	2,937,497	261,706
MV-076	300	0.99	251,290.87	113.98	12,822	12,950
MV-077	325	1.07	601,280.75	272.74	30,679	28,602
MV-079	300	0.99	384,868.46	174.57	19,637	19,833
MV-080	249	0.82	37,026.42	16.79	1,889	2,299
MV-085	279	0.92	115,145.54	52.23	5,875	6,380
MV-087	279	0.92	112,665.58	51.10	5,749	6,243
MV-088	113	0.37	10,642.53	4.83	543	1,456
MV-089	113	0.37	10,642.53	4.83	543	1,456
MV-090	113	0.37	4,363.23	1.98	223	597
MV-091	495	1.63	141,744.63	64.29	7,232	4,427
MV-094	325	1.07	516,704.48	234.37	26,364	24,579
MV-095	279	0.92	141,992.84	64.41	7,245	7,868
MV-096	387	1.28	105,118.21	47.68	5,363	4,199
MV-097	1207	3.98	799,977.60	362.86	40,817	10,247
MV-098	300	0.99	22,885.27	10.38	1,168	1,179
MV-099	300	0.99	178,197.12	80.83	9,092	9,183
MV-100	325	1.07	379,404.36	172.09	19,358	18,048
MV-101	113	0.37	4,363.23	1.98	223	597

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Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
MV-102	249	0.82	85,535.76	38.80	4,364	5,311
MV-103	279	0.92	195,267.22	88.57	9,963	10,820
MV-104	300	0.99	389,855.04	176.84	19,891	20,090
MV-105	113	0.37	10,642.53	4.83	543	1,456
MV-106	113	0.37	10,642.53	4.83	543	1,456
MV-107	249	0.82	11,670.46	5.29	595	725
MV-108	113	0.37	2,285.41	1.04	117	313
MV-109	3401	11.22	21,903,932.86	9,935.46	1,117,599	99,569
MV-110	279	0.92	112,665.58	51.10	5,749	6,243
MV-111	249	0.82	30,149.54	13.68	1,538	1,872
MV-112	113	0.37	12,770.23	5.79	652	1,747
MV-113	819	2.70	366,516.57	166.25	18,701	6,919
MV-114	113	0.37	3,323.31	1.51	170	455
MV-115	113	0.37	2,285.41	1.04	117	313
MV-116	300	0.99	30,051.44	13.63	1,533	1,549
MV-117	249	0.82	53,222.13	24.14	2,716	3,304
MV-118	249	0.82	11,670.46	5.29	595	725
MV-119	325	1.07	44,595.35	20.23	2,275	2,121
MV-120	279	0.92	154,129.50	69.91	7,864	8,541
MV-121	113	0.37	3,323.31	1.51	170	455
MV-123	113	0.37	6,441.06	2.92	329	881
MV-124	279	0.92	115,145.54	52.23	5,875	6,380
MV-125	249	0.82	43,958.08	19.94	2,243	2,729
MV-126	1701	5.61	1,215,024.03	551.13	61,994	11,043
MV-127	300	0.99	355,783.95	161.38	18,153	18,335
MV-129	819	2.70	4,358,350.44	1,976.91	222,375	82,271
MV-130	300	0.99	236,648.25	107.34	12,074	12,195
MV-131	819	2.70	4,137,032.13	1,876.53	211,083	78,093
MV-132	495	1.63	1,812,167.39	821.99	92,462	56,598
P-004	279	0.92	183,135.22	83.07	9,344	10,148
P-005	325	1.07	522,082.81	236.81	26,638	24,835
P-006	325	1.07	675,234.97	306.28	34,452	32,120
P-007	495	1.63	1,959,404.43	888.77	99,974	61,196
P-008	300	0.99	256,174.75	116.20	13,071	13,201
P-009	325	1.07	722,598.68	327.77	36,869	34,373
P-012	325	1.07	514,293.49	233.28	26,241	24,464
P-014	495	1.63	1,975,174.44	895.92	100,779	61,689
P-022	300	0.99	397,021.21	180.09	20,257	20,460
P-023	279	0.92	190,488.22	86.40	9,719	10,555
P-024	545	1.80	2,725,529.99	1,236.28	139,064	77,315
P-025	387	1.28	1,424,221.00	646.02	72,668	56,895
P-026	325	1.07	910,081.51	412.81	46,435	43,292
P-028	325	1.07	754,378.69	342.18	38,490	35,885
P-030	3401	11.22	4,967,196.43	2,253.08	253,440	22,579
P-031	279	0.92	136,938.51	62.11	6,987	7,588
P-032	325	1.07	553,945.31	251.27	28,264	26,351
P-033	3401	11.22	55,097,358.26	24,991.74	2,811,219	250,456
P-034	1207	3.98	13,034,200.64	5,912.21	665,041	166,949
P-035	249	0.82	69,291.76	31.43	3,535	4,302
P-036	1701	5.61	20,050,990.51	9,094.97	1,023,057	182,238
P-039	325	1.07	880,891.19	399.57	44,945	41,903
P-040	819	2.70	314,377.56	142.60	16,040	5,934
P-041	279	0.92	158,871.23	72.06	8,106	8,803
P-042	325	1.07	68,378.46	31.02	3,489	3,253
P-043	325	1.07	65,783.71	29.84	3,356	3,129
P-044	300	0.99	173,422.77	78.66	8,849	8,937
P-045	279	0.92	136,938.51	62.11	6,987	7,588

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Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
P-046	1701	5.61	4,270,690.71	1,937.15	217,902	38,815
P-047	3401	11.22	5,240,009.86	2,376.83	267,360	23,819
P-048	387	1.28	98,724.74	44.78	5,037	3,944
P-049	819	2.70	301,557.37	136.78	15,386	5,692
P-050	249	0.82	62,494.36	28.35	3,189	3,880
P-051	325	1.07	44,595.35	20.23	2,275	2,121
P-052	495	1.63	133,755.74	60.67	6,825	4,177
P-053	1207	3.98	604,758.62	274.31	30,856	7,746
P-054	1701	5.61	1,229,575.39	557.73	62,736	11,175
P-055	325	1.07	390,308.47	177.04	19,915	18,567
P-056	113	0.37	6,439.03	2.92	329	881
P-057	113	0.37	20,097.55	9.12	1,025	2,750
P-058	300	0.99	394,629.38	179.00	20,135	20,336
P-059	1701	5.61	1,256,394.74	569.89	64,105	11,419
P-060	113	0.37	3,323.31	1.51	170	455
R-004	325	1.07	421,765.89	191.31	21,520	20,063
R-005	325	1.07	564,301.11	255.96	28,792	26,843
R-006	279	0.92	141,899.68	64.36	7,240	7,863
R-007	249	0.82	43,989.27	19.95	2,244	2,731
R-008	300	0.99	73,855.50	33.50	3,768	3,806
R-009	3401	11.22	153,736,537.92	69,733.71	7,844,062	698,839
R-010	113	0.37	9,608.68	4.36	490	1,315
R-011	300	0.99	358,213.26	162.48	18,277	18,460
R-012	249	0.82	48,560.49	22.03	2,478	3,015
R-013	113	0.37	3,323.31	1.51	170	455
R-014	113	0.37	3,323.31	1.51	170	455
R-015	1207	3.98	643,958.10	292.09	32,857	8,248
R-016	113	0.37	2,285.41	1.04	117	313
R-017	325	1.07	532,485.63	241.53	27,169	25,330
R-018	3401	11.22	207,345,715.38	94,050.42	10,579,350	942,530
R-019	279	0.92	102,925.41	46.69	5,252	5,703
R-020	545	1.80	2,721,201.94	1,234.32	138,843	77,192
R-021	279	0.92	20,622.02	9.35	1,052	1,143
R-022	249	0.82	11,670.46	5.29	595	725
R-023	113	0.37	4,363.23	1.98	223	597
R-024	3401	11.22	393,491,285.04	178,484.61	20,077,009	1,788,690
R-025	325	1.07	405,777.16	184.06	20,704	19,302
R-026	819	2.70	4,196,566.74	1,903.53	214,120	79,217
R-027	113	0.37	3,323.31	1.51	170	455
R-028	495	1.63	394,095.42	178.76	20,108	12,308
R-029	113	0.37	3,323.31	1.51	170	455
R-030	279	0.92	168,653.32	76.50	8,605	9,345
R-031	249	0.82	62,437.16	28.32	3,186	3,877
R-032	113	0.37	9,608.68	4.36	490	1,315
R-033	249	0.82	53,199.85	24.13	2,714	3,303
R-034	113	0.37	7,528.83	3.42	384	1,030
R-035	300	0.99	187,953.38	85.25	9,590	9,686
R-036	279	0.92	115,052.75	52.19	5,870	6,375
R-037	113	0.37	3,323.31	1.51	170	455
R-038	113	0.37	3,323.31	1.51	170	455
R-039	3401	11.22	4,065,993.55	1,844.30	207,458	18,483
R-040	113	0.37	2,285.41	1.04	117	313
R-041	113	0.37	11,684.48	5.30	596	1,599
R-042	3401	11.22	6,004,779.88	2,723.72	306,380	27,296
R-043	325	1.07	57,786.81	26.21	2,948	2,749
R-044	113	0.37	3,323.31	1.51	170	455
R-045	113	0.37	18,021.75	8.17	920	2,466

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Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
R-046	325	1.07	44,595.35	20.23	2,275	2,121
R-047	249	0.82	108,582.33	49.25	5,540	6,742
R-048	249	0.82	60,102.74	27.26	3,067	3,732
R-049	1207	3.98	2,224,442.72	1,008.99	113,497	28,492
R-050	249	0.82	7,103.70	3.22	362	441
R-051	113	0.37	2,285.41	1.04	117	313
R-052	325	1.07	42,000.60	19.05	2,143	1,998
R-053	300	0.99	35,038.02	15.89	1,788	1,806
R-054	300	0.99	30,051.44	13.63	1,533	1,549
R-055	300	0.99	27,664.27	12.55	1,412	1,426
R-056	279	0.92	141,960.24	64.39	7,243	7,866
R-057	279	0.92	183,135.22	83.07	9,344	10,148
R-058	113	0.37	2,285.41	1.04	117	313
R-059	113	0.37	3,323.31	1.51	170	455
R-060	249	0.82	101,636.58	46.10	5,186	6,310
R-061	300	0.99	341,360.70	154.84	17,417	17,591
R-062	113	0.37	2,285.41	1.04	117	313
R-063	249	0.82	39,391.31	17.87	2,010	2,446
R-064	249	0.82	7,103.70	3.22	362	441
R-065	325	1.07	70,973.21	32.19	3,621	3,376
R-066	113	0.37	3,325.33	1.51	170	455
RC-001	3401	11.22	37,179,106.20	16,864.16	1,896,980	169,005
RC-002	3401	11.22	78,907,995.95	35,792.06	4,026,103	358,691
RC-003	3401	11.22	201,664,295.08	91,473.37	10,289,468	916,704
RC-005	3401	11.22	14,918,124.33	6,766.75	761,164	67,813
RC-006	325	1.07	675,136.65	306.24	34,447	32,116
RC-007	819	2.70	4,378,157.82	1,985.90	223,386	82,645
RC-009	495	1.63	1,990,626.02	902.93	101,567	62,171
RC-010	3401	11.22	71,239,608.24	32,313.74	3,634,841	323,833
RC-011	325	1.07	912,676.26	413.98	46,567	43,415
RC-012	300	0.99	440,853.23	199.97	22,494	22,718
RC-013	3401	11.22	4,994,057.72	2,265.27	254,811	22,701
RC-014	387	1.28	759,531.40	344.52	38,753	30,342
RC-015	819	2.70	366,516.57	166.25	18,701	6,919
RC-017	113	0.37	4,363.23	1.98	223	597
RC-018	279	0.92	20,622.02	9.35	1,052	1,143
RC-019	249	0.82	41,701.43	18.92	2,128	2,589
RC-020	113	0.37	2,285.41	1.04	117	313
RC-021	113	0.37	5,401.13	2.45	276	739
RC-022	819	2.70	340,317.84	154.37	17,364	6,424
RC-023	249	0.82	55,505.51	25.18	2,832	3,446
RC-024	279	0.92	202,620.21	91.91	10,338	11,228
RC-025	249	0.82	85,523.11	38.79	4,364	5,310
RC-026	113	0.37	2,285.41	1.04	117	313
RC-027	279	0.92	200,041.56	90.74	10,207	11,085
RC-028	113	0.37	3,323.31	1.51	170	455
RC-029	113	0.37	4,363.23	1.98	223	597
RC-030	495	1.63	2,072,292.47	939.98	105,734	64,722
RC-031	279	0.92	190,488.22	86.40	9,719	10,555
RC-032	3401	11.22	14,484,300.12	6,569.97	739,029	65,841
RC-033	3401	11.22	3,902,804.02	1,770.28	199,132	17,741
RC-034	3401	11.22	4,367,951.64	1,981.27	222,865	19,855
RC-035	3401	11.22	151,420,561.37	68,683.20	7,725,894	688,311
RC-036	3401	11.22	4,721,244.30	2,141.52	240,891	21,461
RC-037	3401	11.22	5,649,256.16	2,562.46	288,241	25,680
RC-038	819	2.70	5,024,030.40	2,278.86	256,340	94,836
RC-039	325	1.07	49,789.91	22.58	2,540	2,368

World Logistic Center
Cumulative Energy - Transportation Fuels

On-Road Construction Gasoline Fuel Usage

Project ID	ConDays	ConYrs	CO2E	MT CO2e	Gallons	Gallons/year
RD-003	545	1.80	184,709.59	83.78	9,424	5,240
RD-004	387	1.28	92,117.45	41.78	4,700	3,680
RD-006	249	0.82	39,413.59	17.88	2,011	2,447
RD-007	249	0.82	97,087.64	44.04	4,954	6,028
RD-008	300	0.99	149,126.58	67.64	7,609	7,685
RD-009	249	0.82	37,026.42	16.79	1,889	2,299
RD-010	279	0.92	156,479.40	70.98	7,984	8,671
RD-011	249	0.82	43,989.27	19.95	2,244	2,731
SB-007	325	1.07	44,595.35	20.23	2,275	2,121
SB-008	325	1.07	49,789.91	22.58	2,540	2,368
SJ-001	819	2.70	3,537,407.10	1,604.54	180,488	66,774
SJ-002	3401	11.22	3,276,697.94	1,486.28	167,186	14,895
SJ-003	3401	11.22	5,812,498.00	2,636.50	296,570	26,422
SJ-004	3401	11.22	6,141,212.75	2,785.61	313,342	27,916
WLC-001	325	1.07	68,378.46	31.02	3,489	3,253

World Logistic Center
Cumulative Energy - Transportation Fuel

Assumptions

8.89	kg CO_2/gallon gasoline	88.45%	emissions from Gasoline
10.16	kg CO_2/gallon diesel	11.50%	emissions from Diesel
53.12	kg CO_2/ thousand cubic feet	0.05%	emissions from Natural Gas
1036	btu/cubic foot		

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
B-001	176,084.36	155,745,319.62	17,519,159		20255703.3	1,993,672		83340.33772	1568.90696	1,625
B-002	23,625.56	20,896,630.31	2,350,577		2717744.228	267,495		11181.92336	210.5030752	218
B-003	49,196.90	43,514,298.39	4,894,747		5659320.74	557,020		23284.78527	438.3430961	454
B-004	62,854.09	55,593,978.13	6,253,541		7230362.551	711,650		29748.70079	560.0282528	580
B-005	73,688.29	65,176,749.65	7,331,468		8476665.022	834,317		34876.50442	656.5607006	680
B-006	128,860.14	113,975,838.78	12,820,679		14823307.56	1,458,987		60989.21572	1148.140356	1,189
B-007	21,503.64	19,019,807.21	2,139,461		2473651.039	243,470		10177.62306	191.5968197	198
B-008	34,576.57	30,582,717.31	3,440,126		3977483.557	391,485		16365.01177	308.0762758	319
B-009	237,447.10	210,020,203.73	23,624,320		27314509	2,688,436		112383.1827	2115.647264	2,192
B-010	5,069.10	4,483,577.38	504,339		583118.7314	57,394		2399.19154	45.1655034	47
B-011	26,945.98	23,833,518.79	2,680,936		3099705.895	305,089		12753.47157	240.0879436	249
B-012	11,543.84	10,210,437.58	1,148,531		1327934.57	130,702		5463.671832	102.8552679	107
B-013	100,848.32	89,199,592.14	10,033,700		11600993.71	1,141,830		47731.28433	898.5558044	931
B-014	37,351.23	33,036,885.98	3,716,185		4296664.337	422,900		17678.25346	332.7984461	345
C-001	23,951.98	21,185,350.04	2,383,054		2755294.129	271,190		11336.41917	213.4115055	221
C-002	229,550.81	203,035,993.39	22,838,694		26406166.5	2,599,032		108645.8861	2045.291531	2,119
C-003	8,706.54	7,700,874.74	866,240		1001549.416	98,578		4120.788368	77.57508224	80
H-001	31,375.03	27,750,984.22	3,121,596		3609198.043	355,236		14849.7329	279.5506947	290
H-002	23,477.92	20,766,042.62	2,335,888		2700760.44	265,823		11112.04503	209.1875947	217
H-003	49,677.13	43,939,058.35	4,942,526		5714563.568	562,457		23512.0771	442.6219333	459
H-004	95,836.62	84,766,786.44	9,535,072		11024478.17	1,085,086		45359.26104	853.9017516	885
H-005	2,504.04	2,214,801.23	249,134		288049.4694	28,351		1185.154606	22.31089243	23
H-006	81,531.10	72,113,660.41	8,111,773		9378855.897	923,116		38588.49067	726.4399599	753
H-007	7,487.20	6,622,375.78	744,924		861283.5321	84,772		3543.676533	66.7107781	69
H-008	16,939.19	14,982,587.76	1,685,330		1948584.093	191,790		8017.280562	150.9277214	156
H-009	12,527.47	11,080,455.57	1,246,395		1441086.133	141,839		5929.224142	111.6194304	116
M-001	27,887.97	24,666,707.79	2,774,658		3208067.604	315,755		13199.31644	248.4811077	257
M-002	233,838.42	206,828,354.89	23,265,282		26899388.06	2,647,578		110675.2035	2083.494042	2,158
M-003	122,921.39	108,723,059.93	12,229,816		14140149.12	1,391,747		58178.41945	1095.22627	1,135
M-004	13,041.85	11,535,423.10	1,297,573		1500257.653	147,663		6172.680238	116.2025647	120
M-005	180,342.72	159,511,801.64	17,942,835		20745559.06	2,041,886		85355.80685	1606.848773	1,665
M-006	15,251.68	13,489,994.54	1,517,435		1754462.527	172,683		7218.584186	135.8920216	141
M-007	28,632.21	25,324,974.82	2,848,704		3293679.562	324,181		13551.55943	255.112188	264
M-008	513,737.85	454,397,333.89	51,113,311		59097362.28	5,816,670		243150.9811	4577.390457	4,742

World Logistic Center

Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
M-009	7,203.45	6,371,399.44	716,693		828642.4078	81,559		3409.377452	64.18255746	66
M-010	23,694.16	20,957,307.07	2,357,402		2725635.64	268,271		11214.39189	211.1143051	219
M-011	8,023.91	7,097,092.26	798,323		923023.5332	90,849		3797.700422	71.49285433	74
MV-001	36,466.89	32,254,695.44	3,628,200		4194935.311	412,887		17259.69819	324.9190171	337
MV-002	22,917.19	20,270,089.36	2,280,100		2636258.457	259,474		10846.6572	204.1915889	212
MV-003	93,880.12	83,036,270.52	9,340,413		10799413.19	1,062,934		44433.25068	836.4693275	867
MV-004	33,973.83	30,049,603.20	3,380,158		3908148.561	384,660		16079.73893	302.7059286	314
MV-005	13,935.26	12,325,636.65	1,386,461		1603030.124	157,779		6595.528673	124.1628139	129
MV-006	31,790.01	28,118,032.74	3,162,883		3656935.117	359,935		15046.14296	283.2481732	293
MV-007	1,654.13	1,463,062.09	164,574		190280.8492	18,728		782.8940816	14.7382169	15
MV-008	3,094.82	2,737,341.98	307,912		356009.3307	35,040		1464.769572	27.57472839	29
MV-009	586.95	519,151.07	58,397		67519.011	6,646		277.8011257	5.229689867	5
MV-010	2,507.87	2,218,190.92	249,515		288490.3197	28,395		1186.968446	22.34503852	23
MV-011	1,280.61	1,132,693.23	127,412		147314.2058	14,499		606.111547	11.41023244	12
MV-012	11,983.29	10,599,129.42	1,192,253		1378486.502	135,678		5671.663377	106.7707714	111
MV-013	1,558.01	1,378,047.60	155,011		179224.155	17,640		737.4022705	13.88181985	14
MV-014	5,709.40	5,049,924.00	568,045		656775.8343	64,643		2702.247314	50.87061961	53
MV-015	3,361.61	2,973,319.74	334,457		386699.7903	38,061		1591.042811	29.95186015	31
MV-016	1,707.48	1,510,257.64	169,883		196418.9411	19,333		808.1487294	15.21364325	16
MV-017	5,122.45	4,530,772.93	509,648		589256.8233	57,998		2424.446188	45.64092975	47
MV-018	658.68	582,597.13	65,534		75770.58854	7,458		311.7515272	5.8688164	6
MV-019	2,907.04	2,571,257.64	289,230		334408.9692	32,914		1375.896754	25.90167083	27
MV-020	11,232.04	9,934,658.05	1,117,509		1292067.629	127,172		5316.100406	100.0771914	104
MV-021	11,983.29	10,599,129.42	1,192,253		1378486.502	135,678		5671.663377	106.7707714	111
MV-022	2,134.36	1,887,822.06	212,353		245523.6764	24,166		1010.185912	19.01705406	20
MV-023	17,253.69	15,260,761.54	1,716,621		1984762.422	195,351		8166.133168	153.7299166	159
MV-024	8,484.06	7,504,092.67	844,105		975956.6136	96,059		4015.488999	75.59278989	78
MV-025	4,322.07	3,822,839.66	430,016		497185.4447	48,936		2045.626471	38.50953447	40
MV-026	5,335.89	4,719,555.14	530,884		613809.1909	60,414		2525.464779	47.54263515	49
MV-027	2,234.29	1,976,213.72	222,296		257019.5943	25,297		1057.484871	19.90747121	21
MV-028	3,723.82	3,293,689.54	370,494		428365.9905	42,162		1762.474785	33.17911869	34
MV-029	14,673.70	12,978,776.63	1,459,930		1687975.275	166,139		6945.028143	130.7422467	135
MV-030	4,428.79	3,917,230.77	440,633		509461.6285	50,144		2096.135767	39.46038718	41
MV-031	2,828.02	2,501,364.22	281,368		325318.8712	32,020		1338.496333	25.19759663	26
MV-032	6,136.27	5,427,488.41	610,516		705880.5696	69,476		2904.284496	54.67403043	57
MV-033	2,881.38	2,548,559.78	286,677		331456.9631	32,624		1363.750981	25.67302298	27
MV-034	2,774.66	2,454,168.67	276,059		319180.7793	31,415		1313.241685	24.72217028	26
MV-035	1,333.97	1,179,888.78	132,721		153452.2977	15,104		631.3661948	11.88565879	12
MV-036	2,317.04	2,049,406.83	230,529		266538.8385	26,234		1096.650977	20.64478496	21
MV-037	46,416.50	41,055,054.31	4,618,116		5339479.87	525,539		21968.82769	413.5697985	428
MV-038	15,731.65	13,914,525.09	1,565,188		1809675.517	178,118		7445.753254	140.1685477	145
MV-039	57,996.85	51,297,788.36	5,770,280		6671614.81	656,655		27449.78158	516.7504063	535
MV-040	4,170.64	3,688,898.44	414,949		479765.5078	47,221		1973.953649	37.160272	38

World Logistic Center

Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
MV-041	61,460.69	54,361,529.96	6,114,908		7070074.559	695,873		29089.20972	547.6131349	567
MV-042	18,919.30	16,733,978.55	1,882,337		2176363.986	214,209		8954.461214	168.5704295	175
MV-043	15,959.24	14,115,832.07	1,587,833		1835856.814	180,695		7553.473931	142.1964219	147
MV-044	47,022.86	41,591,369.23	4,678,444		5409231.155	532,405		22255.81331	418.9723892	434
MV-045	10,433.48	9,228,338.48	1,038,058		1200206.123	118,131		4938.144191	92.96205178	96
MV-046	16,203.58	14,331,948.74	1,612,143		1863964.209	183,461		7669.119375	144.3734822	150
MV-047	853.74	755,128.82	84,941		98209.47055	9,666		404.0743647	7.606821624	8
MV-048	103,219.93	91,297,264.21	10,269,659		11873809.76	1,168,682		48853.76235	919.6867912	953
MV-049	108,472.99	95,943,563.27	10,792,302		12478091.51	1,228,159		51340.02732	966.4914782	1,001
MV-050	12,861.16	11,375,605.18	1,279,596		1479472.282	145,617		6087.160627	114.5926323	119
MV-051	27,886.34	24,665,259.09	2,774,495		3207879.191	315,736		13198.54123	248.4665141	257
MV-052	31,860.57	28,180,440.03	3,169,903		3665051.596	360,733		15079.53751	283.8768357	294
MV-053	52,983.36	46,863,387.90	5,271,472		6094891.861	599,891		25076.90494	472.0802887	489
MV-054	73,668.06	65,158,854.54	7,329,455		8474337.644	834,088		34866.92862	656.3804334	680
MV-056	853.74	755,128.82	84,941		98209.47055	9,666		404.0743647	7.606821624	8
MV-057	1,974.28	1,746,235.40	196,427		227109.4006	22,353		934.4219683	17.59077501	18
MV-058	426.87	377,564.41	42,471		49104.73528	4,833		202.0371823	3.803410812	4
MV-059	3,361.61	2,973,319.74	334,457		386699.7903	38,061		1591.042811	29.95186015	31
MV-060	4,909.02	4,341,990.73	488,413		564704.4557	55,581		2323.427597	43.73922434	45
MV-061	21,556.78	19,066,815.04	2,144,749		2479764.716	244,071		10202.77725	192.0703549	199
MV-062	28,973.88	25,627,184.41	2,882,698		3332983.907	328,050		13713.27375	258.1565089	267
MV-063	11,792.32	10,430,216.86	1,173,253		1356518.312	133,516		5581.277162	105.0692237	109
MV-064	4,642.22	4,106,012.97	461,869		534013.9961	52,560		2197.154358	41.36209258	43
MV-065	2,151.54	1,903,020.62	214,063		247500.35	24,360		1018.318764	19.17015746	20
MV-066	10,385.31	9,185,734.16	1,033,266		1194665.151	117,585		4915.346344	92.53287544	96
MV-067	8,590.78	7,598,483.78	854,723		988232.7974	97,267		4065.998295	76.5436426	79
MV-068	5,947.66	5,260,660.46	591,750		684183.4976	67,341		2815.013772	52.99348215	55
MV-069	11,763.95	10,405,126.39	1,170,430		1353255.132	133,194		5567.85109	104.8164738	109
MV-070	9,971.56	8,819,768.66	992,100		1147068.93	112,900		4719.515812	88.8463067	92
MV-071	2,027.41	1,793,230.97	201,713		233221.4837	22,955		959.5696049	18.06418684	19
MV-072	993.02	878,317.21	98,798		114230.9308	11,243		469.9932759	8.847764983	9
MV-073	3,972.07	3,513,268.84	395,193		456923.7232	44,973		1879.973104	35.39105993	37
MV-074	3,952.74	3,496,170.45	393,270		454699.9653	44,754		1870.823644	35.2188186	36
MV-075	30,555.32	27,025,952.56	3,040,040		3514902.906	345,955		14461.76373	272.2470581	282
MV-076	37,321.14	33,010,270.94	3,713,191		4293202.876	422,559		17664.01158	332.5303384	345
MV-077	19,320.20	17,088,575.75	1,922,224		2222481.684	218,748		9144.208489	172.1424791	178
MV-078	18,848.98	16,671,781.22	1,875,341		2168274.813	213,413		8921.179014	167.943882	174
MV-079	15,555.91	13,759,090.69	1,547,704		1789460.25	176,128		7362.579289	138.6027728	144
MV-080	5,305.36	4,692,555.03	527,846		610297.6495	60,069		2511.016846	47.27064846	49
MV-081	29,670.68	26,243,497.22	2,952,024		3413139.442	335,939		14043.06676	264.3649617	274
MV-082	21,193.34	18,745,355.16	2,108,589		2437956.745	239,956		10030.76197	188.8321155	196
MV-083	12,904.30	11,413,757.91	1,283,887		1484434.295	146,106		6107.576402	114.9769654	119
MV-084	3,624.01	3,205,406.43	360,563		416884.1909	41,032		1715.233914	32.28979507	33

World Logistic Center

Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
MV-085	16,766.39	14,829,745.03	1,668,138		1928705.89	189,833		7935.493419	149.3880538	155
MV-086	3,788.48	3,350,884.15	376,927		435804.5256	42,894		1793.079993	33.75527096	35
MV-087	2,482.55	2,195,793.03	246,996		285577.327	28,108		1174.98319	22.11941246	23
MV-088	496.51	439,158.61	49,399		57115.46539	5,622		234.9966379	4.423882491	5
MV-089	496.51	439,158.61	49,399		57115.46539	5,622		234.9966379	4.423882491	5
MV-090	875.44	774,324.54	87,101		100706.0004	9,912		414.3461207	7.800190525	8
MV-091	4,642.22	4,106,012.97	461,869		534013.9961	52,560		2197.154358	41.36209258	43
MV-093	4,634.08	4,098,813.65	461,059		533077.677	52,468		2193.301954	41.28956992	43
MV-094	11,005.95	9,734,682.42	1,095,015		1266059.483	124,612		5209.092141	98.06272856	102
MV-095	20,957.98	18,537,181.28	2,085,172		2410882.363	237,292		9919.366774	186.7350673	193
MV-096	4,161.99	3,681,253.01	414,089		478771.1689	47,123		1969.862528	37.08325542	38
MV-097	11,418.80	10,099,848.00	1,136,091		1313551.669	129,287		5404.494628	101.7412392	105
MV-098	853.74	755,128.82	84,941		98209.47055	9,666		404.0743647	7.606821624	8
MV-099	3,972.07	3,513,268.84	395,193		456923.7232	44,973		1879.973104	35.39105993	37
MV-100	8,026.90	7,099,730.79	798,620		923366.6905	90,883		3799.112313	71.51943361	74
MV-101	1,077.84	953,340.75	107,237		123988.2358	12,204		510.1388627	9.603517746	10
MV-102	4,362.43	3,858,533.28	434,031		501827.634	49,392		2064.726357	38.86909558	40
MV-103	6,669.64	5,899,245.66	663,582		767235.7032	75,515		3156.724882	59.42629672	62
MV-104	15,811.51	13,985,159.67	1,573,134		1818862.009	179,022		7483.550278	140.8800881	146
MV-105	496.51	439,158.61	49,399		57115.46539	5,622		234.9966379	4.423882491	5
MV-106	496.51	439,158.61	49,399		57115.46539	5,622		234.9966379	4.423882491	5
MV-107	480.23	424,759.96	47,780		55242.82718	5,437		227.2918301	4.278837164	4
MV-108	356.05	314,920.23	35,424		40957.44723	4,031		168.515871	3.172362029	3
MV-109	58,961.58	52,151,084.30	5,866,264		6782591.56	667,578		27906.38581	525.3461184	544
MV-110	2,482.55	2,195,793.03	246,996		285577.327	28,108		1174.98319	22.11941246	23
MV-111	662.01	585,544.81	65,866		76153.95386	7,495		313.3288506	5.898509988	6
MV-112	620.64	548,948.26	61,749		71394.33174	7,027		293.7457974	5.529853114	6
MV-113	7,683.68	6,796,159.40	764,472		883885.235	86,997		3636.669282	68.46139462	71
MV-114	682.63	603,782.48	67,917		78525.88267	7,729		323.0879464	6.082227906	6
MV-115	1.19	1,056.50	119		137.4051855	14		0.565341741	0.010642729	0
MV-116	1,333.97	1,179,888.78	132,721		153452.2977	15,104		631.3661948	11.88565879	12
MV-117	2,700.55	2,388,615.84	268,686		310655.202	30,576		1278.163936	24.06182108	25
MV-118	480.23	424,759.96	47,780		55242.82718	5,437		227.2918301	4.278837164	4
MV-119	1,867.56	1,651,844.30	185,809		214833.2168	21,145		883.9126728	16.6399223	17
MV-120	22,696.90	20,075,237.70	2,258,182		2610916.716	256,980		10742.39081	202.2287426	210
MV-121	521.08	460,887.29	51,843		59941.42377	5,900		246.623799	4.642767301	5
MV-123	1,676.64	1,482,974.50	166,814		192870.589	18,983		793.5493419	14.93880538	15
MV-124	16,766.39	14,829,745.03	1,668,138		1928705.89	189,833		7935.493419	149.3880538	155
MV-125	993.02	878,317.21	98,798		114230.9308	11,243		469.9932759	8.847764983	9
MV-126	12,539.34	11,090,954.58	1,247,576		1442451.599	141,974		5934.842231	111.7251926	116
MV-127	14,411.90	12,747,216.42	1,433,883		1657859.345	163,175		6821.118758	128.4096152	133
MV-129	57,271.89	50,656,566.00	5,698,151		6588219.625	648,447		27106.65931	510.2910262	529
MV-130	9,403.87	8,317,651.50	935,619		1081765.291	106,473		4450.829642	83.78820861	87

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Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
MV-131	63,580.03	56,236,065.48	6,325,767		7313870.234	719,869		30092.28592	566.4963464	587
MV-132	46,625.35	41,239,781.35	4,638,896		5363504.838	527,904		22067.67634	415.430654	430
P-001	7,310.17	6,465,790.54	727,311		840918.5916	82,768		3459.886748	65.13341016	67
P-002	25,432.01	22,494,426.19	2,530,307		2925548.093	287,948		12036.91437	226.5985386	235
P-003	19,595.36	17,331,955.38	1,949,601		2254134.806	221,864		9274.442521	174.594174	181
P-004	6,234.66	5,514,512.25	620,305		717198.5921	70,590		2950.85152	55.55066868	58
P-005	19,497.88	17,245,726.75	1,939,902		2242920.205	220,760		9228.301016	173.7255462	180
P-006	21,748.82	19,236,670.63	2,163,855		2501855.554	246,246		10293.66809	193.7814024	201
P-007	43,130.08	38,148,241.53	4,291,141		4961429.749	488,330		20413.3732	384.287899	398
P-008	8,735.78	7,726,729.37	869,148		1004911.981	98,909		4134.623351	77.83552995	81
P-009	18,438.70	16,308,895.90	1,834,521		2121079.191	208,768		8726.996713	164.2883417	170
P-010	72,057.37	63,734,207.54	7,169,202		8289052.931	815,852		34104.59071	642.0291926	665
P-011	35,182.68	31,118,821.37	3,500,430		4047207.417	398,347		16651.88456	313.4767424	325
P-012	16,459.80	14,558,568.82	1,637,634		1893437.641	186,362		7790.385262	146.6563491	152
P-014	50,864.02	44,988,852.38	5,060,613		5851096.187	575,895		24073.82874	453.1970771	470
P-015	33,096.16	29,273,308.98	3,292,836		3807186.391	374,723		15664.33882	294.8858965	306
P-016	55,526.56	49,112,830.52	5,524,503		6387446.671	628,686		26280.59637	494.7401425	513
P-017	24,584.28	21,744,611.99	2,445,963		2828029.824	278,349		11635.68389	219.045254	227
P-018	65,572.20	57,998,128.86	6,523,974		7543038.168	742,425		31035.17755	584.2465653	605
P-019	29,568.95	26,153,519.52	2,941,903		3401437.25	334,787		13994.91911	263.4585675	273
P-020	36,940.00	32,673,154.04	3,675,270		4249358.606	418,244		17483.61812	329.1343773	341
P-021	7,205.74	6,373,420.75	716,920		828905.2931	81,585		3410.459071	64.20291926	67
P-022	16,106.94	14,246,469.92	1,602,528		1852847.126	182,367		7623.3791	143.5124078	149
P-023	7,629.60	6,748,327.86	759,092		877664.428	86,384		3611.074311	67.97956157	70
P-024	62,054.11	54,886,399.91	6,173,948		7138337.348	702,592		29370.07106	552.9004341	573
P-025	43,997.38	38,915,357.31	4,377,431		5061198.202	498,149		20823.86186	392.0154717	406
P-026	29,419.63	26,021,444.37	2,927,047		3384260.008	333,096		13924.24483	262.128103	272
P-027	36,622.10	32,391,973.72	3,643,642		4212789.255	414,645		17333.15669	326.3018955	338
P-028	24,286.18	21,480,948.87	2,416,305		2793738.702	274,974		11494.59604	216.3892326	224
P-030	26,252.58	23,220,211.29	2,611,947		3019941.219	297,238		12425.28671	233.909765	242
P-031	3,103.18	2,744,741.28	308,745		356971.6587	35,135		1468.728987	27.64926557	29
P-032	77,005.62	68,110,900.38	7,661,519		8858270.624	871,877		36446.58763	686.1179901	711
P-033	99,247.55	87,783,725.60	9,874,435		11416850.95	1,123,706		46973.6449	884.2930138	916
P-034	134,232.57	118,727,718.41	13,355,199		15441320.76	1,519,815		63531.97755	1196.008613	1,239
P-035	1,655.03	1,463,862.02	164,664		190384.8846	18,739		783.3221265	14.74627497	15
P-036	152,168.40	134,591,824.87	15,139,688		17504552.16	1,722,889		72020.96452	1355.81635	1,405
P-037	9,764.68	8,636,785.91	971,517		1123270.819	110,558		4621.600546	87.00302233	90
P-038	11,899.03	10,524,607.96	1,183,870		1368794.496	134,724		5631.786458	106.0200764	110
P-039	33,218.45	29,381,469.68	3,305,002		3821253.401	376,108		15722.21632	295.9754578	307
P-040	6,509.79	5,757,857.27	647,678		748847.2129	73,705		3081.067031	58.00201489	60
P-041	5,427.71	4,800,767.65	540,019		624371.4115	61,454		2568.922122	48.36073271	50
P-042	3,254.89	2,878,928.64	323,839		374423.6065	36,853		1540.533515	29.00100744	30
P-043	3,041.46	2,690,146.43	302,604		349871.2388	34,436		1439.514924	27.09930204	28

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Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
P-044	3,889.32	3,440,075.74	386,960		447404.4789	44,036		1840.806997	34.65374618	36
P-045	3,103.18	2,744,741.28	308,745		356971.6587	35,135		1468.728987	27.64926557	29
P-046	8,972.10	7,935,751.98	892,661		1032096.747	101,584		4246.472716	79.94112794	83
P-047	27,799.99	24,588,882.28	2,765,904		3197945.885	314,758		13157.6715	247.6971291	257
P-048	4,001.92	3,539,666.35	398,163		460356.8932	45,311		1894.098584	35.65697636	37
P-049	6,082.91	5,380,292.86	605,207		699742.4777	68,872		2879.029848	54.19860407	56
P-050	9,580.79	8,474,140.02	953,222		1102117.652	108,476		4534.567668	85.36460219	88
P-051	1,867.56	1,651,844.30	185,809		214833.2168	21,145		883.9126728	16.6399223	17
P-052	4,375.43	3,870,035.21	435,325		503323.5366	49,540		2070.881119	38.98496083	40
P-053	8,590.78	7,598,483.78	854,723		988232.7974	97,267		4065.998295	76.5436426	79
P-054	12,699.42	11,232,541.23	1,263,503		1460865.874	143,786		6010.606175	113.1514717	117
P-055	53,891.96	47,667,037.59	5,361,871		6199411.79	610,178		25506.94313	480.1758873	497
P-056	357.19	315,930.25	35,538		41088.80771	4,044		169.0563423	3.182536565	3
P-057	1,765.41	1,561,488.08	175,645		203081.7968	19,988		835.5624724	15.72971522	16
P-058	10,856.43	9,602,434.04	1,080,139		1248859.711	122,919		5138.325168	96.73051897	100
P-059	12,966.21	11,468,518.99	1,290,047		1491556.334	146,807		6136.879414	115.5286034	120
P-060	538.92	476,670.38	53,619		61994.1179	6,102		255.0694313	4.801758873	5
P-061	14,835.34	13,121,748.61	1,476,012		1706569.721	167,969		7021.533382	132.1824808	137
R-001	95,618.14	84,573,540.75	9,513,334		10999345.3	1,082,613		45255.85401	851.9550831	883
R-002	24,701.77	21,848,536.23	2,457,653		2841545.856	279,680		11691.29443	220.0921392	228
R-003	23,634.37	20,904,425.86	2,351,454		2718758.091	267,594		11186.0948	210.581604	218
R-004	8,937.16	7,904,854.90	889,185		1028078.377	101,189		4229.939483	79.62988484	82
R-005	74,895.55	66,244,558.88	7,451,581		8615540.635	847,986		35447.89611	667.3173213	691
R-006	3,185.93	2,817,934.38	316,978		366490.9029	36,072		1507.895093	28.38657932	29
R-007	6,718.65	5,942,596.61	668,459		772873.7796	76,070		3179.922259	59.86299434	62
R-008	773.82	684,435.49	76,989		89015.33712	8,761		366.2458986	6.894689356	7
R-009	1,051,206.77	929,784,632.27	104,587,698		120924607.5	11,902,028		497533.8293	9366.224195	9,703
R-010	2,822.14	2,496,163.87	280,783		324642.5307	31,953		1335.713589	25.14521063	26
R-011	23,686.51	20,950,542.71	2,356,641		2724755.891	268,185		11210.77224	211.0461641	219
R-012	7,350.60	6,501,549.02	731,333		845569.2174	83,225		3479.021345	65.49362472	68
R-013	160.08	141,586.65	15,927		18414.27573	1,812		75.76394338	1.426279055	1
R-014	462.03	408,665.40	45,969		53149.62375	5,231		218.6795258	4.11670794	4
R-015	9,161.51	8,103,287.39	911,506		1053885.828	103,729		4336.122008	81.62880285	85
R-016	81.41	72,006.25	8,100		9364.886826	922		38.53101614	0.725357985	1
R-017	11,378.33	10,064,051.37	1,132,064		1308896.082	128,828		5385.339619	101.3806404	105
R-018	327,603.52	289,762,893.12	32,594,251		37685570.3	3,709,210		155054.0166	2918.938565	3,024
R-019	2,275.67	2,012,810.27	226,413		261779.2164	25,766		1077.067924	20.27612809	21
R-020	61,945.98	54,790,761.11	6,163,190		7125898.893	701,368		29318.89411	551.9370127	572
R-021	800.38	707,933.27	79,633		92071.37864	9,062		378.8197169	7.131395273	7
R-022	480.23	424,759.96	47,780		55242.82718	5,437		227.2918301	4.278837164	4
R-023	962.75	851,545.14	95,787		110749.0475	10,900		455.6673685	8.578075462	9
R-024	266,794.49	235,977,757.00	26,544,180		30690459.55	3,020,715		126273.239	2377.131758	2,463
R-025	8,606.16	7,612,082.49	856,252		990001.4002	97,441		4073.275058	76.68062985	79

World Logistic Center

Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
R-026	94,052.79	83,188,994.76	9,357,592		10819275.98	1,064,889		44514.97441	838.0078014	868
R-027	433.29	383,242.98	43,109		49843.27079	4,906		205.0758228	3.860614134	4
R-028	2,802.47	2,478,766.35	278,826		322379.8696	31,730		1326.404065	24.96995605	26
R-029	454.49	401,992.02	45,218		52281.70609	5,146		215.1085538	4.049483316	4
R-030	24,977.76	22,092,642.31	2,485,112		2873293.457	282,804		11821.91719	222.551152	231
R-031	1,489.53	1,317,475.82	148,198		171346.3962	16,865		704.9899138	13.27164747	14
R-032	2,667.29	2,359,200.58	265,377		306829.5542	30,200		1262.423639	23.76550525	25
R-033	1,241.27	1,097,896.51	123,498		142788.6635	14,054		587.4915949	11.05970623	11
R-034	631.82	558,844.24	62,862		72681.36899	7,154		299.0412008	5.629540677	6
R-035	4,220.33	3,732,848.15	419,893		485481.4559	47,784		1997.471422	37.60300118	39
R-036	2,565.30	2,268,986.13	255,229		295096.5712	29,045		1214.149296	22.85672621	24
R-037	718.56	635,560.50	71,492		82658.82386	8,136		340.0925751	6.402345164	7
R-038	419.16	370,743.63	41,703		48217.64725	4,746		198.3873355	3.734701346	4
R-039	21,450.28	18,972,611.66	2,134,152		2467512.948	242,865		10152.36841	191.1213933	198
R-040	287.42	254,224.20	28,597		33063.52955	3,254		136.03703	2.560938066	3
R-041	1,200.91	1,062,199.09	119,482		138145.9787	13,597		568.3896701	10.70010674	11
R-042	31,908.62	28,222,939.74	3,174,684		3670578.962	361,277		15102.27938	284.3049582	295
R-043	2,667.94	2,359,777.57	265,442		306904.5955	30,207		1262.73239	23.77131758	25
R-044	479.04	423,707.00	47,661		55105.88258	5,424		226.7283834	4.268230109	4
R-045	1,970.31	1,742,724.93	196,032		226652.8406	22,308		932.5434914	17.55541211	18
R-046	1,912.54	1,691,630.15	190,285		220007.6283	21,654		905.2023409	17.04070672	18
R-047	4,566.40	4,038,949.20	454,325		525291.912	51,702		2161.268098	40.68652293	42
R-048	9,017.92	7,976,284.29	897,220		1037368.24	102,103		4268.161818	80.34943181	83
R-049	6,483.33	5,734,459.48	645,046		745804.1759	73,406		3068.546718	57.76631623	60
R-050	204.50	180,876.95	20,346		23524.23724	2,315		96.78843767	1.822071492	2
R-051	282.75	250,093.06	28,132		32526.24719	3,201		133.8264283	2.519322822	3
R-052	1,707.48	1,510,257.64	169,883		196418.9411	19,333		808.1487294	15.21364325	16
R-053	1,547.41	1,368,670.99	153,956		178004.6654	17,520		732.384786	13.78736419	14
R-054	1,333.97	1,179,888.78	132,721		153452.2977	15,104		631.3661948	11.88565879	12
R-055	1,067.18	943,911.03	106,177		122761.8382	12,083		505.0929559	9.508527031	10
R-056	6,803.31	6,017,474.52	676,881		782612.1435	77,029		3219.989915	60.61728002	63
R-057	6,220.74	5,502,200.78	618,920		715597.4045	70,433		2944.263572	55.42664858	57
R-058	328.86	290,874.86	32,719		37830.18839	3,723		155.6490352	2.93013997	3
R-059	485.03	429,003.34	48,257		55794.70611	5,492		229.5624882	4.321582986	4
R-060	7,063.05	6,247,217.81	702,724		812491.7702	79,970		3342.927052	62.93160865	65
R-061	50,951.49	45,066,218.09	5,069,316		5861158.106	576,886		24115.22763	453.9764238	470
R-062	219.28	193,951.88	21,817		25224.71775	2,483		103.7849175	1.953782333	2
R-063	868.89	768,527.56	86,449		99952.06444	9,838		411.2441164	7.74179436	8
R-064	266.79	235,977.76	26,544		30690.45955	3,021		126.273239	2.377131758	2
R-065	3,308.25	2,926,124.19	329,148		380561.6984	37,457		1565.788163	29.47643379	31
R-066	736.52	651,449.51	73,279		84725.29446	8,339		348.5948895	6.562403793	7
RC-001	66,751.98	59,041,634.80	6,641,354		7678752.979	755,783		31593.56439	594.7583658	616
RC-002	106,717.80	94,391,102.80	10,617,672		12276183.82	1,208,286		50509.29559	950.8527031	985

World Logistic Center

Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
RC-003	182,060.56	161,031,221.37	18,113,748		20943169.59	2,061,336		86168.85827	1622.154711	1,681
RC-005	40,019.17	35,396,663.55	3,981,627		4603568.932	453,107		18940.98584	356.5697636	369
RC-006	41,719.15	36,900,282.40	4,150,763		4799124.455	472,355		19745.58211	371.7165307	385
RC-007	67,252.62	59,484,448.07	6,691,164		7736343.758	761,451		31830.51666	599.2190637	621
RC-009	35,446.82	31,352,449.76	3,526,710		4077592.327	401,338		16776.90064	315.8302077	327
RC-010	224,737.81	198,778,929.89	22,359,835		25852507.39	2,544,538		106367.9036	2002.407824	2,074
RC-011	34,502.76	30,517,438.20	3,432,783		3968993.58	390,649		16330.08049	307.418684	318
RC-012	15,357.02	13,583,173.44	1,527,916		1766581.055	173,876		7268.444821	136.830663	142
RC-013	26,519.37	23,456,189.05	2,638,491		3050631.679	300,259		12551.55995	236.2868967	245
RC-014	13,240.24	11,710,896.14	1,317,311		1523079.077	149,909		6266.577012	117.9701998	122
RC-015	7,576.96	6,701,768.30	753,855		871609.0511	85,788		3586.159987	67.51054192	70
RC-017	1,111.37	983,000.24	110,574		127845.6476	12,583		526.0098495	9.902293853	10
RC-018	800.38	707,933.27	79,633		92071.37864	9,062		378.8197169	7.131395273	7
RC-019	6,323.08	5,592,720.56	629,102		727370.0971	71,592		2992.701297	56.33850333	58
RC-020	335.33	296,594.90	33,363		38574.1178	3,797		158.7098684	2.987761076	3
RC-021	339.09	299,925.68	33,737		39007.30791	3,839		160.4921916	3.021313848	3
RC-022	6,990.02	6,182,617.23	695,458		804090.0401	79,143		3308.358861	62.28085205	65
RC-023	1,901.21	1,681,605.62	189,157		218703.873	21,526		899.8381525	16.93972426	18
RC-024	6,916.20	6,117,325.38	688,113		795598.4056	78,307		3273.420766	61.62313189	64
RC-025	3,081.08	2,725,195.01	306,546		354429.5368	34,885		1458.269647	27.45236533	28
RC-026	106.72	94,391.10	10,618		12276.18382	1,208		50.50929559	0.950852703	1
RC-027	6,840.07	6,049,994.47	680,539		786841.5776	77,445		3237.391555	60.94487114	63
RC-028	670.66	593,189.80	66,726		77148.23561	7,593		317.4197368	5.975522153	6
RC-029	975.09	862,455.60	97,014		112168.024	11,040		461.5056244	8.687982387	9
RC-030	53,366.96	47,202,678.83	5,309,638		6139018.878	604,234		25258.46173	475.49815	493
RC-031	6,546.39	5,790,237.86	651,320		753058.5217	74,120		3098.394096	58.32820211	60
RC-032	38,738.56	34,263,970.32	3,854,215		4456254.726	438,608		18334.8743	345.1595312	358
RC-033	20,489.82	18,123,091.74	2,038,593		2357027.293	231,991		9697.784753	182.563719	189
RC-034	23,051.04	20,388,478.20	2,293,417		2651655.705	260,990		10910.00785	205.3841839	213
RC-035	156,445.96	138,375,296.88	15,565,275		17996617.58	1,771,321		74045.5251	1393.929313	1,444
RC-036	24,971.96	22,087,518.05	2,484,535		2872627.014	282,739		11819.17517	222.4995325	231
RC-037	29,987.70	26,523,899.89	2,983,566		3449607.653	339,528		14193.11206	267.1896096	277
RC-038	77,303.14	68,374,057.85	7,691,120		8892495.985	875,246		36587.40492	688.7689178	714
RC-039	2,081.00	1,840,626.50	207,045		239385.5845	23,562		984.9312639	18.54162771	19
RD-001	4,375.43	3,870,035.21	435,325		503323.5366	49,540		2070.881119	38.98496083	40
RD-002	2,934.74	2,595,755.33	291,986		337595.055	33,228		1389.005629	26.14844933	27
RD-003	5,495.97	4,861,141.79	546,810		632223.4667	62,227		2601.228723	48.96891421	51
RD-004	3,575.05	3,162,101.94	355,692		411252.1579	40,478		1692.061402	31.85356555	33
RD-005	21,218.86	18,767,924.57	2,111,128		2440892.044	240,245		10042.83901	189.0594693	196
RD-006	5,775.30	5,108,211.60	574,602		664356.5203	65,389		2733.43739	51.4577822	53
RD-007	15,298.85	13,531,718.63	1,522,128		1759889.019	173,217		7240.911017	136.3123309	141
RD-008	3,310.06	2,927,724.04	329,328		380769.7693	37,477		1566.644253	29.49254994	31
RD-009	5,245.72	4,639,803.51	521,913		603436.9672	59,393		2482.789162	46.73925381	48

World Logistic Center

Cumulative Energy - Transportation Fuel

On-Road Operational Transportation Fuel Calculations

Project ID	CO2E (MT)	CO2e Gas (kg)	Gasoline (gal)		CO2e Dsl (kg)	Dsl (gal)		CO2e NG (kg)	MCF	MMBtu
RD-010	5,265.21	4,657,037.65	523,851		605678.3808	59,614		2492.011265	46.91286267	49
RD-011	6,642.48	5,875,227.20	660,880		764111.9443	75,208		3143.872446	59.18434575	61
RD-012	25,486.56	22,542,676.74	2,535,734		2931823.394	288,565		12062.73355	227.0845924	235
RD-013	42,937.71	37,978,089.55	4,272,001		4939300.364	486,152		20322.32376	382.573866	396
RD-014	32,722.52	28,942,828.37	3,255,661		3764205.214	370,493		15487.49649	291.5567863	302
RD-015	17,929.57	15,858,570.47	1,783,866		2062511.406	203,003		8486.02463	159.7519697	166
RD-016	30,295.16	26,795,847.86	3,014,156		3484976.276	343,009		14338.6332	269.9290888	280
SB-001	26,039.33	23,031,593.09	2,590,730		2995410.182	294,824		12324.35588	232.0097117	240
SB-002	13,286.95	11,752,212.96	1,321,959		1528452.601	150,438		6288.685912	118.3864065	123
SB-003	25,159.17	22,253,098.49	2,503,161		2894161.838	284,858		11907.77834	224.1675139	232
SB-004	32,960.73	29,153,526.16	3,279,362		3791607.847	373,190		15600.24225	293.6792593	304
SB-005	11,953.05	10,572,380.31	1,189,244		1375007.604	135,335		5657.349753	106.5013131	110
SB-006	23,015.00	20,356,593.42	2,289,831		2647508.879	260,582		10892.94609	205.0629911	212
SB-007	1,814.20	1,604,648.75	180,500		208695.1249	20,541		858.658025	16.16449595	17
SB-008	2,134.36	1,887,822.06	212,353		245523.6764	24,166		1010.185912	19.01705406	20
SJ-001	200,986.44	177,771,021.77	19,996,740		23120290.75	2,275,619		95126.43479	1790.783787	1,855
SJ-002	17,128.21	15,149,772.00	1,704,136		1970327.503	193,930		8106.741942	152.6118588	158
SJ-003	30,948.16	27,373,419.81	3,079,125		3560093.307	350,403		14647.69572	275.7472839	286
SJ-004	32,709.00	28,930,873.01	3,254,316		3762650.34	370,340		15481.0991	291.4363535	302
WLC-001	3,201.53	2,831,733.08	318,530		368285.5146	36,249		1515.278868	28.52558109	30

4 EMFAC2017 Output

World Logistics Center
Cumulative Energy - EMFAC2017

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: RIVERSIDE
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

	Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	% Fleet Mix	VMT	Trips	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX
HHDTGAS	RIVERSIDE	2035	HHDT	Aggregatec	Aggregatec	GAS	11.25743	0.0021%	1362.518	225.2387	1586.73452	0	37.26037428	0.065129128	0	0.000229589	0.128897699	0	0.00027986
HHDTDSL	RIVERSIDE	2035	HHDT	Aggregatec	Aggregatec	DSL	32047.38	7.2135%	4793615	376234.1	987.0145677	13331.11395	0	0.000827977	0.312160187	0	0.155144945	2.095465466	0
HHDTNG	RIVERSIDE	2035	HHDT	Aggregatec	Aggregatec	NG	771.7684	0.0473%	31452.33	3009.897	2714.207766	3174.530747	0	4.062575476	1.169985888	0	0.553309009	0.64714886	0
LDAGAS	RIVERSIDE	2035	LDA	Aggregatec	Aggregatec	GAS	1026177	52.6986%	35020112	4821114	202.4034979	0	41.27083008	0.000801877	0	0.022777982	0.002933451	0	0.018812593
LDADSL	RIVERSIDE	2035	LDA	Aggregatec	Aggregatec	DSL	12272.66	0.6445%	428289.8	58176.99	154.6038399	0	0	0.000208084	0	0	0.024301571	0	0
LDAELEC	RIVERSIDE	2035	LDA	Aggregatec	Aggregatec	ELEC	57077.13		1978520	275511.7	0	0	0	0	0	0	0	0	0
LDT1GAS	RIVERSIDE	2035	LDT1	Aggregatec	Aggregatec	GAS	113196	5.6691%	3767315	521643.5	238.9849513	0	48.88482736	0.001367474	0	0.027431304	0.00354225	0	0.020456959
LDT1DSL	RIVERSIDE	2035	LDT1	Aggregatec	Aggregatec	DSL	14.31294	0.0007%	492.3036	67.07345	295.4050304	0	0	0.000649011	0	0	0.046433557	0	0
LDT1ELEC	RIVERSIDE	2035	LDT1	Aggregatec	Aggregatec	ELEC	3465.608		120930.7	16754.53	0	0	0	0	0	0	0	0	0
LDT2GAS	RIVERSIDE	2035	LDT2	Aggregatec	Aggregatec	GAS	339088.6	17.3331%	11518451	1579591	237.2422535	0	49.66649578	0.00132571	0	0.031275129	0.003315134	0	0.020527303
LDT2DSL	RIVERSIDE	2035	LDT2	Aggregatec	Aggregatec	DSL	3254.042	0.1719%	114262.6	15447.74	206.4704	0	0	0.000596777	0	0	0.032454272	0	0
LDT2ELEC	RIVERSIDE	2035	LDT2	Aggregatec	Aggregatec	ELEC	12891.58		309954.7	62226.35	0	0	0	0	0	0	0	0	0
LHDT1GAS	RIVERSIDE	2035	LHDT1	Aggregatec	Aggregatec	GAS	20955.52	0.9951%	661305.6	312206	661.4861766	104.9596334	16.4592231	0.001267662	0.095162438	0.01235915	0.004078523	0.002679073	0.030854246
LHDT1DSL	RIVERSIDE	2035	LHDT1	Aggregatec	Aggregatec	DSL	22345.02	1.0374%	689370.8	281072.3	398.9689362	115.5686394	0	0.001744319	0.005098128	0	0.062712361	0.018165781	0
LHDT2GAS	RIVERSIDE	2035	LHDT2	Aggregatec	Aggregatec	GAS	3380.417	0.1555%	103349.9	50363.18	762.3995063	121.6684155	18.82195286	0.001127969	0.096729654	0.012247464	0.004506229	0.002660779	0.031406874
LHDT2DSL	RIVERSIDE	2035	LHDT2	Aggregatec	Aggregatec	DSL	9178.708	0.4102%	272579.8	115456.6	437.009078	187.6016974	0	0.001785213	0.005098128	0	0.068691741	0.029488374	0
MCYGAS	RIVERSIDE	2035	MCY	Aggregatec	Aggregatec	GAS	43796.89		281780.6	87593.78	208.732552	0	57.41393517	0.313610059	0	0.230491682	0.064206248	0	0.01494368
MDVGAS	RIVERSIDE	2035	MDV	Aggregatec	Aggregatec	GAS	230649.6	11.3656%	7552836	1059811	291.7169927	0	61.81923646	0.001504112	0	0.035387376	0.003594324	0	0.021957275
MDVDSL	RIVERSIDE	2035	MDV	Aggregatec	Aggregatec	DSL	7697.93	0.3955%	262831.4	36182.69	272.565321	0	0	0.000249843	0	0	0.042843473	0	0
MDVELEC	RIVERSIDE	2035	MDV	Aggregatec	Aggregatec	ELEC	9378.102		226957.7	45374.87	0	0	0	0	0	0	0	0	0
MHGAS	RIVERSIDE	2035	MH	Aggregatec	Aggregatec	GAS	4107.681		34638.88	410.9324	1385.171447	0	21.94738977	0.003428156	0	0.028884691	0.012915734	0	0.043411309
MHDSL	RIVERSIDE	2035	MH	Aggregatec	Aggregatec	DSL	2387.596		16996.27	238.7596	823.1610404	0	0	0.002276371	0	0	0.129389452	0	0
MHDTGAS	RIVERSIDE	2035	MHDT	Aggregatec	Aggregatec	GAS	3103.367	0.2302%	152965.2	62092.18	1359.260719	465.4649771	31.43081093	0.002658021	0.275613995	0.031220376	0.008768056	0.008544812	0.029778459
MHDTDSL	RIVERSIDE	2035	MHDT	Aggregatec	Aggregatec	DSL	19033.83	1.6297%	1082985	189748	730.94652	640.270784	0	0.000330644	0.002747403	0	0.114894614	0.100641651	0
OBUSGAS	RIVERSIDE	2035	OBUS	Aggregatec	Aggregatec	GAS	630.9891		25215.57	12624.83	1353.01178	328.2707739	22.38481767	0.003355668	0.201094345	0.025395366	0.010142377	0.005828255	0.025334442
OBUSDSL	RIVERSIDE	2035	OBUS	Aggregatec	Aggregatec	DSL	527.6401		34295.76	4947.738	881.9809888	1895.303384	0	0.000460792	0.031173099	0	0.138635129	0.297915298	0
SBUSGAS	RIVERSIDE	2035	SBUS	Aggregatec	Aggregatec	GAS	651.9289		24179.42	2607.716	803.4340821	2430.954073	42.91993954	0.002965648	2.393602081	0.05328052	0.015113079	0.087151971	0.058376722
SBUSDSL	RIVERSIDE	2035	SBUS	Aggregatec	Aggregatec	DSL	1384.753		44206.81	15979.86	1001.896198	3113.087544	0	0.002388178	0.012509341	0	0.15748413	0.48933401	0
UBUSGAS	RIVERSIDE	2035	UBUS	Aggregatec	Aggregatec	GAS	177.0694		24930.46	708.2777	1104.471064	0	43.09236624	0.003498079	0	0.051347057	0.013301445	0	0.049770268
UBUSDSL	RIVERSIDE	2035	UBUS	Aggregatec	Aggregatec	DSL	0		0	0	0	0	0	0	0	0	0	0	0
UBUSELEC																			
UBUSNG	RIVERSIDE	2035	UBUS	Aggregatec	Aggregatec	NG	338.7765		45825.53	1355.106	1740.489106	0	0	5.230572906	0	0	0.35481009	0	0

* Vehicle Types used = HHDT, LDA, LDT1, LDT2,LHDT1,LHDT2,MDV, MHDT 100.0000% 66453575

% Gasoline	88.4493%
% Dsl	11.5034%
% NG	0.0473%
	100.0000%
% Electric	0.0000%
	100.0000%