LOS ANGELES INTERNATIONAL AIRPORT

EXTREMELY LOW EMISSION TECHNOLOGY GROUND SUPPORT EQUIPMENT FEASIBILITY STUDY REPORT - **UPDATED**

Prepared for:

Los Angeles World Airports
Environmental & Land Use Planning Division (ELUP)
7301 World Way West
Los Angeles, California 90045

Prepared by:

CDM Smith
111 Academy Way, Suite 150
Irvine, California 92617

Contact: Anthony Skidmore, AICP

Original Report
October 2, 2013

Updated
February 13, 2015

Table of Contents

List of Figures

List of Tables

Appendices

Executive Summary

This report is an update of the *Los Angeles International Airport Extremely Low Emission Technology Ground Support Equipment Feasibility Study Report* published October 2, 2013. Following publication of the original report in October 2013, a number of comments on that report were received from various ground support equipment (GSE) stakeholders at LAX. Such comments include those submitted by Airlines for America (A4A), an organization that represents numerous major airlines including several that operate at Los Angeles International Airport (LAX). In light of LAX GSE stakeholder comments and further discussion and coordination with A4A,[1] the October 2013 report has been updated by Los Angeles World Airports (LAWA) to include certain additions, which are shown in *underlined text*, and certain deletions, which are shown in ~~*strikethrough text.*~~

~~Los Angeles World Airports (~~LAWA~~)~~ contracted with CDM Smith to complete a feasibility analysis for the increased use of extremely low emission technology in ~~ground support equipment (~~GSE~~)~~ at ~~Los Angeles International Airport (~~LAX~~)~~ as a means to reduce GSE-related air emissions at the airport. Extremely low emission technology includes GSE powered by electricity, fuel cells, future technological developments, and the like. The LAX GSE goals include reducing GSE emissions~~the conversion of all GSE~~ at LAX to ~~extremely low emission technology,~~ achiev~~e~~ing a fleet-wide aggregate GSE average emission rate of no greater than 2.65 grams per brake-horsepower hour (gm/bhp-hr) for hydrocarbon (HC) emissions plus nitrogen oxides (NO_x), as can be facilitated through the conversion of GSE at LAX to extremely low emission technology while also taking into consideration the ongoing implementation of existing regulatory programs set forth by the state for reducing GSE emissions ~~and having zero-emission (electric) vehicles represent at least 45 percent of the GSE fleet at LAX~~.

The feasibility study included completion of an extensive survey of GSE owners and operators at LAX to develop a comprehensive inventory of all GSE fleets at LAX. The inventory generated specific information for each piece of equipment such as the GSE type, make, year, engine horsepower, fuel type (i.e., gasoline, diesel, electric, liquefied propane gas [LPG], or compressed natural gas [CNG]), and other data. The GSE inventory completed in 2013 as part of the feasibility study provided an update to a baseline inventory completed at LAX in 2006. A comparison of the two surveys provides good information regarding how the GSE fleet at LAX has changed over the past several years with respect to alternative fuel fleet composition. Based on the results of the 2013 LAX GSE inventory, it was determined that approximately 37 percent of the existing GSE fleet is zero-emission (electric) technology and another 16 percent is low emission (LPG/CNG) technology. The nature, scope, and structure of the 2006 and 2013 surveys did not, according to A4A representatives, account for the extent to which cleaner conventional fuel-based GSE in the 2013 fleet had replaced certain higher emission GSE that were in the 2006 fleet (i.e., airlines have been making substantial commitments and progress in purchasing low emission conventional fuel-based GSE). The aggregate average HC+NO_x emission rate for the existing (2013) GSE fleet at LAX is approximately 5.17 grams per brake-horsepower hour, which is 2.52 grams per brake-horsepower hour above the LAX GSE goal. ~~As noted~~

[1] Los Angeles World Airports is very appreciative of the input and technical support provided by A4A, particularly from Mr. Tim A. Pohle and Ms. Marianne Csaky of A4A, and their technical consultant, Mr. Ev Ashworth of Ashworth Leininger Group (ALG), in addressing the comments received on the October 2013 report.

~~above, approximately 37 percent of the existing GSE fleet at LAX consists of zero-emission vehicles, which is eight percent less than the LAX GSE goal.~~

Several potential options were considered relative to converting/replacing existing GSE with extremely low emission technology and/or reducing emissions. Such options include targeting and either retiring or replacing particular types of GSE that comprise a relatively low proportion of the overall LAX GSE fleet, but have a disproportionately high contribution to the aggregate GSE average emission rate. Replacing various other existing conventional fuel-based GSE with electric GSE (eGSE) was also found to be a ~~viable and attractive~~potential option for reducing emissions, especially relative to the number and types of GSE at LAX for which there are currently readily available electric replacement models. For certain types of GSE where there is no existing electric or other alternative fuel technology available, and diesel-power is considered the only viable engine type, such as in the case of aircraft tow tractors that transport aircraft substantial distances across the airfield at LAX, replacement of that equipment or the diesel engines within such equipment, or retrofitting th~~ose~~ existing diesel engines, with new clean-diesel engine technology was identified as a ~~suitable~~ potential option. In the case of certain GSE that are built on an on-road chassis and are, or can be, licensed/plated by the state of California to operate on public streets, such equipment would not meet the definition of "GSE" that are the focus of the LAX GSE goals, given that such equipment is subject to strict state and federal emissions standards for on-road vehicles. While each of the above options would serve to reduce GSE emissions at LAX, it is understood and acknowledged by LAWA that the selection and implementation of these and/or other possible options by the individual GSE owners/operators at LAX will vary on a case-by-case basis, depending on operational and business considerations particular to each owner/operator. It is also recognized that several GSE owner/operators at LAX have already been implementing measures to reduce emissions at LAX, including the integration of newer, cleaner GSE over the past several years. Much of this effort to reduce GSE emissions has occurred, and will continue to occur, in response to regulatory programs set forth by the California Air Resources Board (CARB) for required reductions in emissions from off-road equipment such as GSE (i.e., CARB "fleet rules" applicable to GSE). The has indicated that the current and growing availability of very low emission conventional fuel GSE is a key consideration in airlines making significant investments in the planning and purchasing of new GSE in the future, especially relative to achieving CARB fleet rule requirements.

Relative to evaluating the feasibility of using eGSE at LAX, as one potential option within a larger mitigation strategy in helping to achieve the LAX GSE goals, a comprehensive evaluation of the existing electric power infrastructure at LAX was completed to assess the airport's ability to better support the adequacy and availability of battery charging systems throughout the airport, particularly at passenger terminal gates and at cargo aircraft parking positions ~~necessary for a predominantly electric GSE fleet~~. For the power assessment, it was assumed that the electric GSE typically staged/operated at a passenger gate or cargo aircraft parking position included an aircraft push-back tractor, baggage/cargo tugs, deck/cargo loaders, and belt loaders and would charge their batteries at the gate/position. The mix of GSE and associated battery charging requirements were sized in terms of gates handling wide-body aircraft, narrow-body aircraft, and commuter jets, and all existing and future passenger gates and cargo aircraft positions were accounted for in the assessment. The power infrastructure assessment found that, at passenger terminals, the existing electrical service from the Los Angeles Department of Water and Power is adequate; however, certain improvements/upgrades in the distribution systems within the terminals would be required.

The costs for the necessary infrastructure improvements would be approximately $4.7 million and the estimated costs for eGSE battery charging stations (using smart chargers) at all gates would be approximately $18.6 million. Those costs could be reduced to approximately $4.2 million and $11 million, respectively, if the existing smart chargers located at certain gates remain in-place and are used instead of purchasing new chargers. For the cargo areas, the electric power infrastructure improvement/upgrade costs would be approximately $2.3 million, assuming any necessary power service upgrades in the cargo areas are included within the improvements associated with the 400 Hz aircraft position electrification, which is a separate project. The estimated costs for charging stations to serve the eGSE at cargo aircraft parking positions would be approximately $7.2 million and $7.5 million, depending on whether the existing smart chargers at the FedEx facility are reused.

In conjunction with completing the feasibility study, the project team also completed a financial analysis for the potential replacement of conventional fuel-based GSE with eGSE. The financial analysis found that the initial purchase cost of electric equipment is generally 8 to 23 percent greater than for conventional fuel-based equipment, plus the additional capital cost outlays for power infrastructure improvements and battery charging stations. The analysis found, however, that despite the higher initial cost, many GSE owner/operators have elected to purchase electric due to its lower operating costs. Electric GSE have smaller moving part inventories and thus can cost less in maintenance, parts and labor. Fuel costs can also be considerably less with electric versus conventional fuel GSE. Based on the financial analysis, the cost of electricity for charging was found to be, in general, approximately 80 percent lower than conventional GSE fuel cost. In summary, the financial analysis found that while electric has a higher initial cost, the lower operating costs results in a more favorable annual life cycle cost than its conventional GSE counterpart.

Based on the nature, composition, and emissions of the existing GSE fleet operating at LAX, and the nature and feasibility of the potential options for reducing GSE emissions at LAX, the increased use of eGSE in place of conventional fuel GSE at LAX could serve an important role ~~is considered to be a viable and attractive option~~ in moving towards achievement of the LAX GSE goals. While it is recognized that the utilization of eGSE at LAX has certain limitations, and by no means is it a total solution to meeting those goals, the expansion of eGSE at LAX offers the opportunity for immediate and substantial reductions in GSE emissions, given that there are certain categories of GSE that are already well-suited to that zero-emission technology. It is also recognized, however, that GSE owners/operators at LAX, as well as throughout the state, have already been working on, and making substantial financial and operational commitments to, various means of reducing GSE emissions in order to meet CARB fleet rule requirements and such means may or may not include increased utilization of eGSE. As summarized below, the LAX eletGSE feasibility study includes estimates of future GSE emissions levels based on specified assumptions of how certain categories of GSE would achieve emissions reductions, such as conversion to zero emission (electric) equipment, conversion to CNG/LPG, or conversion to newer clean diesel engine technology. In response to A4A comments received on the October 2013 report, additional estimates of future GSE emissions were developed that did not specify the means by which emission reductions would occur, but rather were based on an overall assumption that all of the GSE operating at LAX in the future would have emission levels consistent with the applicable CARB fleet rules emissions targets at LAX. The original emissions estimate were based on a prescriptive approach (i.e., by converting "W" equipment to "X" zero/low emission technology, the resultant composite average GSE emission rate at LAX would be "Y"). The additional emissions estimates, on the other hand, took more of a performance-based approach (i.e., the CARB fleet rules establish specific emissions levels for various types and sizes of engines, which if all of the LAX 2013 GSE fleet mix is achieving those target emissions levels at LAX, the resultant

composite average GSE emission rate at LAX would be "Z"). Under the latter approach, there is the underlying assumption that the individual GSE owners/operators would implement whatever emission reduction approaches and technologies necessary to meet the state's requirements that make most sense for their particular operation at LAX. Relatedly, also in response to comments received from A4A, the development of the new emissions estimates was based on a methodology and assumptions adapted from the state's program for evaluating compliance with the CARB fleet rules.

The conclusions of the October 2013 feasibility study report set forth a progressive sequence of tiers for the phased expansion of eGSE at LAX, beginning with categories of GSE for which electric models are readily available such as baggage tugs and belt loaders, then moving to categories of GSE for which electric models are generally available such as narrow-body aircraft push-back tractors and forklifts, and then considering GSE for which electric models are an emerging technology and likely to become more available in the future such as wide-body aircraft push-back tractors and cargo/lower deck loaders. Certain other types of GSE at LAX such as those built on on-road chassis (i.e., aircraft service trucks for provisions, cabin cleaning, food, fuel, lavatory service, water, etc.), ~~may~~were assumed in the analysis to be better suited for options such as LPG/CNG or reclassification. For heavy-duty GSE such as aircraft tractors that transport aircraft substantial distances (i.e., more than just a push-back and tow-in function at the gate) and large-capacity cargo tractors, the ability to transition to electric models or other alternative fuels does not currently exist and is not anticipated to be feasible in the foreseeable future; hence, the option ~~recommended~~assumed for those equipment is to replace or retrofit older diesel equipment with newer clean diesel technology (i.e., diesel engines that meet Tier III or better federal emission standards). That same ~~recommendation~~assumption also applies to certain specialty equipment such as air starts. **Table ES-1** summarizes the nature and emissions reduction effectiveness associated with the various tiers of GSE conversion ~~recommended~~ for LAX under this approach.

Table ES-1
Summary of Aggregate LAX GSE Emission Rates with Tiered Implementation of Emission Reduction Options

Condition	Electric Feasibility Description	Fuel Description	Reduction in Aggregate LAX GSE Emission Rate (gm/hp-hr)	Affected Inventory Population	Cumulative Aggregate LAX GSE Emission Rate (gm/hp-hr)
Baseline			--	2,724	5.17
Tier A	Readily Available	Electric	1.26	494	3.91
Tier B	Generally Available	Electric	0.91	436	3.00
Tier C	Emerging Technology	Electric	0.85	232	2.15
Tier D	On-road Chassis	CNG	0.88	216	1.27
Tier E	Not Feasible	Tier III Diesel	0.10	12	1.17
Tier F	Not Feasible	Tier III Diesel	0.24	55	0.94

Source: KB Environmental Sciences, 2013.

~~As indicated above~~Based on this emissions estimate approach, implementation of the conversion to electric of Tiers A, B, and C would meet the LAX GSE emissions goal, reducing the cumulative aggregate LAX GSE emission rate to 2.15 gm/bhp-hr, which is less than the goal of 2.65 gm/bhp-hr, Under this scenario, a total of 1,162 pieces of equipment (43 percent of the fleet) would be replaced, representing approximately $121 million in one-time capital costs. Electric GSE rather than

conventional fuel-based GSE would result in $6.1 million in annual cost savings, which includes the capital costs amortized over 25 years.

In developing GSE emissions estimates based on the assumption of compliance with CARB fleet rule requirements, as specifically applied to LAX, LAWA utilized a methodology based on CARB fleet rules that apply to GSE; specifically, the In-Use Off-Road Diesel (ORD) Vehicle Regulation, the Large Spark Ignition (LSI) Engine Fleet Regulation, and the Portable Engine Airborne Toxic Control Measure (ATCM). These existing CARB fleet rules require operators to achieve improved emissions performance that meet specific requirements, including certain emission level targets identified for specific future years, and are anticipated to be accomplished through retirement, replacement, or retrofit of virtually all older, higher emitting equipment. The emissions estimates developed under this approach were based on the use of existing CARB tools, emission factors, and related emission inventory elements. The following represents the estimated fleet average emission index (i.e., the composite average emission factor) at LAX, based on the existing fleet composition, for future compliance years, assuming compliance with the suite of ARB fleet rules:

- The 2019 fleet average emission index is 3.0 g/hp-hr.
- The 2020 fleet average emission index is 2.7 g/hp-hr.
- The 2021 fleet average emission index is 2.4 g/hp-hr.
- The 2022 fleet average emission index is 2.0 g/hp-hr.
- The 2023 fleet average emission index is 1.8 g/hp-hr.

As shown, LAWA's GSE emissions goal of 2.65 g/bhp-hr is projected to be achieved by 2021 under this approach that is based on compliance with the CARB fleet rules, as specifically applied to LAX, based on the existing fleet composition.

Regarding next steps, it ~~is~~was recommended in the October 2013 report that LAWA: (1) share the results of this study with key stakeholders at LAX including GSE owners/operators such as airlines and third-party service providers, as well as Airlines for America (A4A), for review and comment, which has since been accomplished and LAWA's response to the stakeholder input is reflected in this updated report; (2) support current and planned efforts at LAX for reducing GSE emissions through formalization of a GSE policy, outlining, among other things, potential incentives and requirements for GSE owner/operators at LAX to convert GSE to extremely low emissions technologies, although in light of stakeholder input received on the October 2013 report, it is anticipated that the GSE policy to be developed will be more performance-based (i.e., require GSE owner/operators to achieve the emissions goal of 2.65 g/bhp-hr within certain parameters) and complimentary to the CARB fleet rules relative to giving the individual GSE owner/operators flexibility as to exactly how they will achieve that emissions level; (3) complete more detailed planning, engineering, and design of eGSE charging systems at terminal gates and cargo aircraft parking positions, taking into account potential space limitations and logistical considerations of charging equipment at the gate/positions, which, since October 2013, has partially occurred in conjunction with various terminal modernization projects such as Terminals 1, 2, and 5, and with refinements to the improvement plans for the installation of the aircraft gates along the east side of the new Bradley West terminal; and (4) further assess the use of LPG/CNG as a viable/feasible option for reducing GSE emissions, including evaluation of what fueling station additions and improvements at LAX would be required to support that technology, which is still under consideration.

Section 1
Introduction

The operation of GSE is an integral part of airline and air cargo operations, and is also a recognized source of air pollution at airports, particularly at major airports including, but not limited to, Los Angeles International Airport (LAX). In the interest of reducing airport-related emissions at LAX, Los Angeles World Airports (LAWA) has set certain goals for the reduction of air pollutant emissions from aircraft ground support equipment (GSE) operating at LAX. GSE typically include, but are not limited to, baggage tugs, ~~beltloaders~~belt loaders, aircraft tow tractors, cargo lifts, cargo tractors, ground power units, provisions trucks (fuel, lavatory, food, cabin service, etc.), and the like. As further described below, the goals related to LAX GSE include, in essence, the completion of an inventory of GSE at LAX, the conversion over time of GSE to extremely low emission technology, the inclusion of zero-emission (i.e., electric) GSE within the GSE fleet mix, the achievement of a specified aggregate emission rate for the total GSE fleet operating at LAX, and the establishment of an incentive program to assist in the conversion of GSE with older diesel engines to newer, less-polluting engines.

This report evaluates the feasibility of achieving the LAX GSE goals based on the results of an inventory of GSE currently operating at LAX, an assessment of the availability and use of low-emission GSE within the industry, an evaluation of the electric power infrastructure at LAX relative to supporting chargers for eGSE, a delineation of potential options for reducing emissions from LAX GSE, and a preliminary cost-benefit analysis related to such options for reducing emissions. It is important to note that this report is only a preliminary assessment of the feasibility considerations associated with conversion of LAX GSE to extremely low emission technology. While it includes preliminary technical and engineering analyses of GSE operations and power infrastructure at LAX, along with cost estimates for potential infrastructure upgrade needs, such analyses and estimates are subject to further, more detailed study, engineering, and design, and, as such, are subject to change.

Section 1 of the report introduces the purpose and overall content of the report. Section 2 describes LAX GSE goals. Section 3 describes the existing GSE fleet characteristics at LAX, including the number and type of GSE at LAX based on a 2013 inventory. Section 3 also includes an estimate of the aggregate average emission rate of hydrocarbon (HC) and nitrogen oxides (NO_x) associated with the existing LAX GSE fleet. Two different methods of calculating the estimate of the aggregate average emission rate are presented in Section 3; one based on the South Coast GSE MOU and the other based on the California Air Resources Board (CARB). Section 4 identifies and evaluates potential options for reducing emissions from LAX GSE, including as related to feasibility and financial considerations associated with electric GSE as one potential option. This evaluation includes an analysis of the electrical power infrastructure at LAX relative to the ability to support electric GSE serving aircraft at passenger gates and at air cargo aircraft parking positions, and a delineation of the nature and estimated costs of improvements/upgrades to the existing power infrastructure and the installation of battery charging systems to meet the projected needs. Section 4 also includes an evaluation of future reductions in emissions from GSE at LAX that would occur from compliance with current CARB regulatory programs pertaining to off-road equipment such as GSE. Section 5 provides the conclusions and recommendations of the study.

In conjunction with completing the extremely low emission technology GSE (eletGSE) feasibility study for LAX, a benchmark study was completed to identify and consider efforts at other major airports to expand the use of eletGSE, particularly eGSE. Airports evaluated in the benchmark study included

Dallas/Fort Worth International Airport, San Francisco International Airport, and Seattle-Tacoma International Airport. A survey questionnaire was sent to representatives of the airports, asking about reasons why each airport was pursuing eGSE, what policies or programs for ~~eSGE~~eGSE are currently in place, what obstacles or incentives were encountered in pursuing and deploying eGSE, and other similar questions. Electric GSE considerations identified in the benchmark study were found to be generally consistent with considerations identified in the LAX eletGSE feasibility study. Such considerations include: the primary reasons for pursuing eGSE were related to environmental and regulatory requirements; cost is a key factor; GSE are typically owned and operated by airlines and ground handler companies (i.e., none of the airports own/operate the entire fleet of GSE at the airport); and, eGSE constraints include limited operating ranges between charges, inaccessibility to chargers in some boarding areas, and less powerful than diesel for heavy-duty operations. The number and nature of eletGSE at the benchmark study airports were substantially less than at LAX. The full results of the benchmark study, including survey questionnaire responses, are provided in Appendix A.

Section 2
LAX GSE Emissions Reductions Goals

The following describes the LAX GSE emissions reductions goals that are considered in this study.

The extent of, and approach to, GSE emissions reductions at LAX that are reflected in the LAX GSE goals are derived primarily from the former South Coast GSE Memorandum of Understanding (GSE MOU). The South Coast GSE MOU was a voluntary agreement between certain major airline carriers and the California Air Resources Board that set forth a detailed program for the reduction of GSE emissions at major airports in southern California. The South Coast GSE MOU defined "GSE" as including "any vehicle listed in Table 3 of Appendix I of the MOU if: (a) such a vehicle lacks a license plate issued by the California Department of Motor Vehicles; (b) the engine powering the equipment is twenty-five (25) horsepower or greater; and (c) the equipment is not subject to compliance with SCAQMD Rule XX-RECLAIM, or included in a mobile source emissions reduction credit program under SCAQMD Rule XVI."

By way of background, the 1994 State Implementation Plan (SIP) for ozone attainment included control measure M15, which focused on the need for emissions reductions from aircraft; however, federal law preempts California from setting emission standards for aircraft. As a result, and in response to the South Coast Air Basin's "extreme nonattainment" classification, a consultative process was developed to focus its efforts on airport activities to help achieve the emissions reductions goals of the SIP. One of the main objectives of this process was to develop a MOU for GSE that would be a voluntary program providing reductions in HC and NO_x emissions beyond what would otherwise be required under air quality regulations. The South Coast GSE MOU was developed in cooperation with the U.S. Environmental Protection Agency, the Air Transport Association-ATA (now Airlines For America-A4A) representing the major airlines, the Federal Aviation Administration, and the five major airports in the South Coast Air Basin. The GSE MOU, which was signed in December 2002, includes provisions for the early introduction of clean units, with requirements for 2.65 grams per brake-horsepower hour (gm/bhp-hr) HC plus NO_x fleet average emissions rate in the South Coast Air Basin by December 31, 2010. Other major provisions include the introduction of electric or zero-emission vehicles (ZEVs) into the fleet and the use of diesel oxidation catalysts and diesel particulate filters to reduce particulate matter emissions from the diesel portion of the fleet.

While implementation of the South Coast GSE MOU was never fully achieved, given that the MOU was terminated by the ATA on January 1, 2006 as a result of the CARB decision to develop a suite of state regulations that would control emissions from GSE, the basic intent and primary objectives of the GSE MOU were carried forth by LAWA and others in identifying ~~in the LAX GSE~~ emissions reduction goals for GSE at LAX~~of LAWA~~. The key features of the South Coast GSE MOU that are reflected in the LAX GSE goals include the goal of achieving a fleet-wide aggregate average emission rate of 2.65 grams per brake-horsepower hour for HC and NOx emissions, and the goal of increasing the extent of eGSE operating at LAX.

This page intentionally left blank.

Section 3
Existing GSE Fleet Characteristics at LAX

3.1 Nature, Number, and Fuel-Type of GSE Currently Operating at LAX

In compliance with requirements for LAWA to complete an inventory of GSE operating at LAX, such an inventory was first conducted in 2006 and subsequently updated in 2013 in order to provide a more current characterization of GSE operating at LAX. The following describes both the 2006 inventory and the 2013 inventory.

3.1.1 Summary of 2006 GSE Inventory

3.1.1.1 2006 GSE Inventory Survey Form and Distribution

In January 2006, a LAX GSE Inventory Task Force was formed for the purposes of identifying GSE users at LAX and developing an effective survey methodology and data request form to obtain certain information about GSE at LAX. The GSE inventory survey form and instructions were developed with consistency and simplicity in mind, and were developed as a Microsoft Excel workbook that included a number of "built-in" features to make data entry easy for the respondent and to help to secure valid entries. The GSE owner/operator contact list was initially developed from a compendium of information provided by LAWA, combined with in-the-field observations and other means, and continually updated based upon feedback from the respondents, unopened or undeliverable surveys, ongoing communications between LAWA and GSE owner/operators, and input from Air Transport Association, now known as Airlines for America (A4A). Each party identified on the distribution list was sent an electronic copy of the Microsoft Excel workbook, along with a cover letter from LAWA. Responses were received from the majority of the parties that were sent a survey request.

3.1.1.2 2006 Survey Results

The survey results provided generally complete data relative to the overall nature, number, and fuel type of GSE operating at LAX in 2006; however, some notable data gaps occurred relative to information requested on fueling method, power (brake horsepower), and GSE usage (i.e., hour meter/odometer information). **Table 3-1** summarizes the basic characteristics of GSE at LAX in 2006 based on the inventory survey results. A copy of the report for the 2006 GSE inventory survey is provided as Appendix B-1.

Table 3-1
Summary of Nature, Number, and Fuel Type of GSE at LAX in 2006

	Equipment Type		Fuel Type									
			Diesel		Gasoline		Electric		LPG/CNG		Not Specified	
GSE Category	Count	% of Total	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category
Air Conditioner	9	0.3%	8	88.9%		0.0%	1	11.1%		0.0%		0.0%
Air Start	32	1.1%	32	100.0%		0.0%		0.0%		0.0%		0.0%
Aircraft Tractor	176	5.8%	157	89.2%	3	1.7%	14	8.0%	2	1.1%		0.0%
Baggage Tractor	600	19.7%	55	9.2%	79	13.2%	293	48.8%	173	28.8%		0.0%
Belt Loaders	280	9.2%	42	15.0%	94	33.6%	103	36.8%	34	12.1%	7	2.5%
Bobtails	32	1.1%	4	12.5%	26	81.3%		0.0%	2	6.3%		0.0%
Cargo Loader	164	5.4%	156	95.1%	8	4.9%		0.0%		0.0%		0.0%
Cargo Tractor	229	7.5%	21	9.2%	109	47.6%	4	1.7%	95	41.5%		0.0%
Cart	162	5.3%	6	3.7%	2	1.2%	152	93.8%	2	1.2%		0.0%
Catering Truck	62	2.0%	41	66.1%	17	27.4%		0.0%	4	6.5%		0.0%
Deicer	1	0.0%		0.0%	1	100.0%		0.0%		0.0%		0.0%
Fork Lift	251	8.2%	24	9.6%	15	6.0%	54	21.5%	153	61.0%	5	2.0%
Fuel Truck	36	1.2%	28	77.8%	6	16.7%		0.0%	2	5.6%		0.0%
Generator	17	0.6%	11	64.7%	6	35.3%		0.0%		0.0%		0.0%
Ground Power Unit	125	4.1%	96	76.8%	16	12.8%	12	9.6%	1	0.8%		0.0%
Hydrant Cart/Truck	26	0.9%	15	57.7%	11	42.3%		0.0%		0.0%		0.0%
Lavatory Cart/Truck	45	1.5%	9	20.0%	35	77.8%		0.0%		0.0%	1	2.2%
Lift	138	4.5%	32	23.2%	46	33.3%	38	27.5%	22	15.9%		0.0%
Other	102	3.3%	52	51.0%	34	33.3%	15	14.7%	1	1.0%		0.0%
Other ORE	303	9.9%	9	3.0%	272	89.8%	7	2.3%	15	5.0%		0.0%
Passenger Stand	51	1.7%	4	7.8%	27	52.9%	19	37.3%	1	2.0%		0.0%
Service Truck	180	5.9%	30	16.7%	140	77.8%	8	4.4%	2	1.1%		0.0%
Sweeper	10	0.3%	1	10.0%	4	40.0%	2	20.0%	1	10.0%	2	20.0%
Water Truck	9	0.3%	1	11.1%	7	77.8%		0.0%		0.0%	1	11.1%
Not Specified	7	0.2%		0.0%	1	14.3%		0.0%		0.0%	6	85.7%
Total Number And % Of Total	**3,047**	**100.0%**	**834**	**27.4%**	**959**	**31.5%**	**722**	**23.7%**	**510**	**16.7%**	**22**	**0.7%**

Source: CDM Smith, 2013.

3.1.2 2013 GSE Inventory

3.1.2.1 2013 GSE Inventory Survey Approach

The overall approach to the 2013 GSE inventory survey was similar to that of the 2006 GSE inventory survey, using essentially the same Microsoft Excel workbook, which was distributed electronically to GSE owners/operators at LAX. Notable changes in the 2013 survey form, compared to 2006, included elimination of the spreadsheet columns requesting information on where and how each piece of GSE is fueled at LAX and on odometer/hour meter readings. These columns were eliminated because very few respondents in the 2006 survey provided any such information, and because such information was not felt to be essential to the GSE inventory update. New columns were added to the 2013 survey form relative to asking where at the airport each piece of GSE is primarily used and where is it stored or serviced; however, only a few respondents in the 2013 survey provided such information. Similarly, a column was added requesting information about the number, location, type, and make/model of electric GSE chargers currently located at LAX, but, here too, very little information was provided by respondents. A copy of the 2013 GSE inventory survey form is provided in Appendix B-2, along with the cover letter and e-mail message that accompanied the form during distribution.

The distribution list provides the contact information of potential GSE owner/operators at LAX, including airline and non-airline tenants; government agencies; air carrier operating permit (ACOP) contacts; cargo service providers; and, ground service handlers. It was developed from a compendium of sources provided by LAWA combined with internet searches and in-the-field observations. The distribution list was updated based upon duplicate contacts, feedback from the respondents, or undeliverable surveys, ongoing communications between LAWA and GSE owner/operations, and input from LAWA operation officials. A copy of the distribution list for the 2013 GSE Inventory Survey Questionnaire is provided in Appendix B-2.

On February 28, 2013, each party identified on the distribution list was sent an electronic copy of the Microsoft Excel spreadsheet along with a cover letter from LAWA. The cover letter explained the background of the GSE inventory, described the data and information needs, specified the due dates for the survey information, and provided contact information to answer any questions regarding the survey and offer assistance in completing the spreadsheet if desired.

Over the two months that followed distribution of the survey, responses were received from the majority of the parties that were sent a survey request. **Table 3-2** provides a summary of the 2013 GSE survey effort. Although responses were not received from 18 of the parties on the survey distribution list, LAWA determined that it is unlikely those parties own/operate GSE at LAX or that they use a third-party provider for GSE service.

Table 3-2
Summary of Response Types to 2013 GSE Inventory Survey

	Count	Percent
No. of parties who were sent an email-request to participate in survey	138	-
No. of parties who responded to the survey	120	87.0%
No. of respondents who indicated they do not own GSE and/or contract services to a third-party	75	62.5%
No. of respondents who indicated they own/operate GSE	45	37.5%

Source: CDM Smith, 2013.

3.1.2.2 2013 GSE Survey Results

The 2013 GSE inventory survey results provide generally complete data relative to the overall nature, number, and fuel type of GSE currently operating at LAX, with responses for certain data fields being more complete than others.

Table 3-3 provides a summary of the results of the 2013 GSE Inventory survey. There are 3,096 pieces of GSE at LAX. However, a total of 366 GSE were considered on-road license plated vehicles and were excluded from the analysis and a total of six fuel-powered GSE were less than 25 horsepower and were also excluded from the analysis, leaving a total of 2,724 pieces of equipment (compared to 2,744 pieces of equipment in 2006 when excluding Other ORE). The complete consolidated database of GSE information received from all of the survey responses is provided herewith as Appendix B-2.

Table 3-3
Summary of Nature, Number, and Fuel Type of GSE at LAX in 2013

	Equipment Type		Fuel Type									
			Diesel		Gasoline		Electric		LPG		CNG	
GSE Category	Count	% of Total	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category
Air Conditioner	10	0.4%	10	100.0%								
Air Start Unit	35	1.3%	34	97.1%			1	2.9%				
Aircraft Tractor	193	7.1%	146	75.6%	1	0.5%	46	23.8%				
Baggage Tug	650	23.9%	53	8.2%	152	23.4%	298	45.8%	147	22.6%		
Belt Loader	259	9.5%	28	10.8%	34	13.1%	158	61.0%	39	15.1%		
Bobtail	21	0.8%	14	66.7%	7	33.3%						
Cargo Loader	165	6.1%	145	87.9%	6	3.6%	13	7.9%	1	0.6%		
Cargo Tractor	247	9.1%	35	14.2%	28	11.3%	161	65.2%	23	9.3%		
Cart	138	5.1%	1	0.7%	8	5.8%	129	93.5%				
Catering Truck	130	4.8%	113	86.9%	15	11.5%	2	1.5%				
Deicer	1	0.0%			1	100.0%						
Forklift	322	11.8%	24	7.5%	32	9.9%	62	19.3%	203	63.0%	1	0.3%
Fuel Truck	35	1.3%	34	97.1%					1	2.9%		
Generator	6	0.2%	4	66.7%	2	33.3%						
Ground Power Unit	113	4.1%	85	75.2%			28	24.8%				
Hydrant Cart/Truck	19	0.7%					19	100.0%				
Lavatory Cart	4	0.1%			2	50.0%	2	50.0%				
Lavatory Truck	30	1.1%	14	46.7%	12	40.0%	4	13.3%				
Lift	59	2.2%	14	23.7%	13	22.0%	24	40.7%	8	13.6%		
Other	147	5.4%	63	42.9%	59	40.1%	11	7.5%	1	0.7%	13	8.8%
Passenger Stand	33	1.2%	6	18.2%	16	48.5%	10	30.3%	1	3.0%		
Service Truck	73	2.7%	34	46.6%	26	35.6%	10	13.7%	3	4.1%		
Sweeper	26	1.0%	1	3.8%	3	11.5%	19	73.1%	3	11.5%		
Water Truck	8	0.3%	2	25.0%	4	50.0%	2	25.0%				
Total Number And % Of Total	**2,724**	**100.0%**	**860**	**31.6%**	**421**	**15.5%**	**999**	**36.7%**	**430**	**15.8%**	**14**	**0.5%**

Source: CDM Smith, 2013.

3.2 Emissions Characteristics of Existing GSE at LAX

The October 2013 report provides an estimate of emissions associated with the 2013 LAX GSE fleet based on the emissions calculation methodology and assumptions set forth in the South Coast GSE MOU. Report review comments received from the A4A indicated that use of the South Coast GSE MOU methodology and assumptions is not appropriate for the LAX analysis given that they were designed many years ago for a different purpose, and the calculation of GSE emissions at LAX should now be based on the methodologies and assumptions set forth in the current CARB fleet rule requirements for LSI and ORD (while also taking into consideration ATCM requirements for portable equipment). In response to those comments, LAWA and their technical consultants worked closely with A4A and their technical consultants to develop an emissions calculation approach and assumptions adapted from CARB's emissions calculation tools and requirements. Provided below in Section 3.2.1 is the original emissions characteristics discussion presented in the October 2013 report, and in Section 3.2.2 is the analysis of emissions characteristics associated with the 2013 LAX GSE fleet based on the new approach and assumptions.

3.2.1 Emissions Estimates Based on SCGSE MOU Approach

Based on the results of the 2013 LAX GSE inventory, the aggregate average emission rate in terms of grams per brake-horsepower hour (gm/bhp-hr) was estimated using the methodology, equation, and factors indicated in the South Coast GSE MOU. This approach and related assumptions were also used in conducting sensitivity analyses in evaluating for potential options to reduce GSE emissions at LAX, as described later in this report

Each piece of equipment identified in the GSE inventory was allocated to one of 24 GSE types[2] based on the designations within California Air Resources Board's OFFROAD2007[3] emissions model and stipulated in the South Coast GSE MOU. The development of the aggregate emission rates was also based on the methodology described in the MOU.

Ground Support Equipment	
Air Conditioner	Fuel Truck
Air Start Unit	Generator
Aircraft Tractor[1]	Ground Power Units
Baggage Tug	Hydrant Cart/Truck
Belt Loader	Lavatory Cart
Bobtail	Lavatory Truck
Cargo Loader	Lift
Cargo Tractor	Other

[2] Aircraft tractors less than or equal to 250 hp were considered associated with the narrow body aircraft (approximately 80 percent of fleet) while aircraft tractors greater than 250 hp were considered associated with the wide body aircraft (approximately 20 percent of fleet).

[3] California Environmental Protection Agency, Air Resources Board, *OFFROAD2007, November 2007,* http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles.

Ground Support Equipment	
Cart	Passenger Stand
Catering Truck	Service Truck
Deicer	Sweeper
Forklift	Water Truck

For the analysis, data were gathered for GSE type, fuel type, horsepower rating, model year, load factor, and hours of operation to facilitate the development of an aggregate hydrocarbon + nitrogen oxides ($HC+NO_x$) emission rate.

3.2.1.1 Equipment Type

Table 3-4 presents the distribution of GSE within each type, based on the results of the 2013 LAX GSE inventory. Baggage tugs and forklifts represent the majority of equipment with 23.9 and 11.8 percent share of the entire GSE fleet, respectively.

Table 3-4
GSE Inventory by Equipment Type

GSE Type	Population	Percent of Total
Air Conditioner	10	0.4%
Air Start Unit	35	1.3%
Aircraft Tractor	193	7.1%
Baggage Tug	650	23.9%
Belt Loader	259	9.5%
Bobtail	21	0.8%
Cargo Loader	165	6.1%
Cargo Tractor	247	9.1%
Cart	138	5.1%
Catering Truck	130	4.8%
Deicer	1	0.0%
Forklift	322	11.8%
Fuel Truck	35	1.3%
Generator	6	0.2%
Ground Power Units	113	4.1%
Hydrant Cart/Truck	19	0.7%
Lavatory Cart	4	0.1%
Lavatory Truck	30	1.1%
Lift	59	2.2%
Other	147	5.4%
Passenger Stand	33	1.2%
Service Truck	73	2.7%
Sweeper	26	1.0%
Water Truck	8	0.3%
Total	**2,724**	**100%**

Source: KB Environmental Sciences, 2013.

3.2.1.2 Fuel Type

Table 3-3, presented earlier, delineates the GSE fuel type distribution by GSE type, based on the results of the 2013 LAX GSE inventory. As shown, a majority of the diesel equipment falls within the categories of aircraft tractor, cargo loader, and catering truck; a majority of the gasoline equipment fall within the category of baggage tug. A majority of the electric equipment comprises the baggage tug, belt loader, cargo tractor, and cart. A majority of the propane (LPG) equipment are baggage tug and forklifts. CNG represents a very small amount of the GSE fleet.

3.2.1.3 Model Year

Table 3-5 presents the distribution of equipment by model year, based on the results of the 2013 LAX GSE inventory. Of note, during the field survey, model year was not reported for a majority of GSE. As a surrogate, the average model year of the available data for that category was applied in the estimation of emissions, given that emission rates vary by model year, for those GSE not reporting a model year. Model years ranged from 1961 to 2013, with the GSE fleet average model year being 2001. A majority of the GSE was found to have a model year of 1999 (9.3 percent of the fleet) and 2008 (9.1 percent of the fleet). Nearly 53 percent of the GSE were model year 2001 or newer and 90 percent of the GSE were reported as model year 1991 or newer.

Table 3-5
GSE Inventory by Model Year

Model Year	Population	Percent of Total	Cumulative	Model Year	Population	Percent of Total	Cumulative
2013	10	0.4%	0.4%	1986	23	0.8%	95.8%
2012	89	3.3%	3.6%	1985	15	0.6%	96.4%
2011	132	4.8%	8.5%	1984	14	0.5%	96.9%
2010	163	6.0%	14.5%	1983	6	0.2%	97.1%
2009	121	4.4%	18.9%	1982	10	0.4%	97.5%
2008	248	9.1%	28.0%	1981	5	0.2%	97.7%
2007	120	4.4%	32.4%	1980	7	0.3%	97.9%
2006	92	3.4%	35.8%	1979	10	0.4%	98.3%
2005	83	3.0%	38.8%	1978	10	0.4%	98.6%
2004	71	2.6%	41.4%	1977	4	0.1%	98.8%
2003	47	1.7%	43.2%	1976	3	0.1%	98.9%
2002	123	4.5%	47.7%	1975	5	0.2%	99.1%
2001	128	4.7%	52.4%	1974	2	0.1%	99.2%
2000	199	7.3%	59.7%	1973	2	0.1%	99.2%
1999	254	9.3%	69.0%	1972	4	0.1%	99.4%
1998	109	4.0%	73.0%	1971	0	0.0%	99.4%
1997	114	4.2%	77.2%	1970	4	0.1%	99.5%
1996	90	3.3%	80.5%	1969	4	0.1%	99.7%
1995	96	3.5%	84.0%	1968	1	0.0%	99.7%
1994	46	1.7%	85.7%	1967	2	0.1%	99.8%
1993	34	1.2%	87.0%	1966	1	0.0%	99.8%
1992	36	1.3%	88.3%	1965	1	0.0%	99.9%
1991	41	1.5%	89.8%	1964	1	0.0%	99.9%

Model Year	Population	Percent of Total	Cumulative	Model Year	Population	Percent of Total	Cumulative
1990	38	1.4%	91.2%	1963	0	0.0%	99.9%
1989	40	1.5%	92.7%	1962	1	0.0%	99.9%
1988	42	1.5%	94.2%	1961	2	0.1%	100.0%
1987	21	0.8%	95.0%	**Total**	**2,724**	**100%**	

Source: KB Environmental Sciences, 2013.

3.2.1.4 Horsepower

Table 3-6 presents the GSE horsepower rating distribution, based on the results of the 2013 LAX GSE inventory. A majority of the GSE has a horsepower ranging from 25 to 50 (8.1 percent of total) and 51 to 120 (53.9 percent of total). Approximately 38.0 percent of the GSE have a horsepower rating of greater than 120 but very few equipment (0.5 percent) have a horsepower rating greater than 500. GSE with a horsepower of less than 25 were not included in the analysis, per the South Coast GSE MOU.

Table 3-6
GSE Inventory by Horsepower Bin

Horsepower	Population	Percent of Total
25-50	221	8.1%
51-120	1,468	53.9%
121-175	536	19.7%
176-250	341	12.5%
251-500	145	5.3%
501-750	13	0.5%
751-1000	0	0.0%
Total	**2,724**	**100%**

Source: KB Environmental Sciences, 2013.

Horsepower was based on the manufacturer's rating as reported during the survey, except for electric equipment. If the manufacturer's rating was not available than the horsepower was based on the GSE MOU. Regardless of whether the manufacturer's rating was available, for electric equipment, the horsepower was based on the average reported horsepower by GSE type (for fuel-powered units only).

3.2.1.5 Default Data

Table 3-7 presents default data used within the analysis. This default data includes average model year, activity (hours per year), horsepower (noted previously), and load factor (percent of full throttle) by GSE type. The average model year and horsepower was used when model year was unreported. For electric equipment, the average horsepower by GSE type was used regardless of the reported value per the GSE MOU. The average model year was based on the 2013 LAX GSE inventory and activity and load factors were based on the GSE MOU.

Table 3-7
Average Model Year, Horsepower, Activity, and Load Factor

GSE Type	Average Model Year	Activity	Average Horsepower	MOU Horsepower	Load Factor
Air Conditioner	2004	795	242	149	0.75
Air Start Unit	1997	318	470	352	0.90
Aircraft Tractor-Narrow	1996	633	204	200	0.80
Aircraft Tractor-Wide	1996	633	510	332	0.80
Baggage Tug	2003	1395	82	93	0.55
Belt Loader	2001	980	75	84	0.50
Bobtail	2002	1787	238	141	0.55
Cargo Loader	1999	909	111	102	0.50
Cargo Tractor	2001	1309	144	101	0.54
Cart	1997	46	46	55	0.50
Catering Truck	2000	985	218	207	0.53
Deicer	1988	110	118	118	0.95
Forklift	2005	854	76	80	0.30
Fuel Truck	2003	2009	159	137	0.25
Generator	2002	900	107	107	0.55
Ground Power Units	2003	1008	192	149	0.75
Hydrant Cart/Truck	2002	1301	131	131	0.70
Lavatory Cart	1990	46	55	55	0.50
Lavatory Truck	2002	1395	178	147	0.25
Lift	1999	791	127	114	0.50
Other	1999	954	198	138	0.50
Passenger Stand	1998	173	156	124	0.57
Service Truck	2000	896	190	133	0.20
Sweeper	1991	235	210	50	0.51
Water Truck	2002	770	295	159	0.20

Source: KB Environmental Sciences, 2013.

3.2.1.6 Useful Life

Table 3-8 presents the useful life (in years) for each GSE and fuel type. The useful life is based on the OFFROAD emissions model. Numerous pieces of GSE are reported with model years which suggest the equipment is well beyond its useful life. An assumption was made that these equipment were rebuilt/refurbished such that the model year was actually newer. For example, a diesel-powered air start has a reported model year of 1961. The estimated useful life for a diesel-powered air start, according to OFFROAD, is 16 years. Given that the equipment age (i.e., 52 years) is more than twice its useful life (32 years), the equipment was assumed to have been rebuilt/refurbished once it achieved twice its useful life (i.e., in 1993). This rebuilt/refurbished model year was used for determining its emission factors. However, a diesel-powered air start with a reported model year of 1986 or 27 years of service, has not achieved twice its useful life. Thus, the reported model year of 1986 was used for determining its emission factors. Under this assumption, a total of 138 GSE (five percent of the fleet) were rebuilt/refurbished; a majority of which are baggage tugs, belt loaders, and forklifts.

Table 3-8
Useful Life (years)

GSE Type	Diesel	Gasoline	CNG/LPG
Air Conditioner	9	16	16
Air Start Unit	16	16	16
Aircraft Tractor-Narrow	30	16	16
Aircraft Tractor-Wide	30	7	16
Baggage Tug	25	6	16
Belt Loader	22	7	16
Bobtail	22	6	6
Cargo Loader	18	8	16
Cargo Tractor	17	11	16
Cart	5	5	5
Catering Truck	12	16	16
Deicer	16	16	16
Forklift	16	6	6
Fuel Truck	16	16	16
Generator	16	16	16
Ground Power Units	15	5	5
Hydrant Cart/Truck	17	16	16
Lavatory Cart	16	5	5
Lavatory Truck	9	9	16
Lift	16	16	16
Other	22	16	16
Passenger Stand	16	16	16
Service Truck	13	13	13
Sweeper	12	16	14
Water Truck	16	16	16

Source: KB Environmental Sciences, 2013.

3.2.1.7 Emission Factors

The HC+NOx emission factors were developed based on fuel type, horsepower and model year. The emission rate were based on a zero hour (i.e., at initial operation) and an annual deterioration factor (i.e., a function of model year, age of equipment, and typical annual hours of operation). Zero hour emission factors (in gm/bhp-hr) and deterioration factors (in gm/bhp-hr^2). The deterioration factor was multiplied by the age of the equipment and the activity to determine the deterioration emission factor. The zero hour emission factors were then added to the deterioration emission factor to determine the emission factor for each individual GSE. **Tables 3-9, 3-10, and 3-11** provide the zero hour and deterioration emissions factors for diesel, gasoline, and CNG/LPG equipment by horsepower and model year based on the MOU. The aggregate HC+NOx emission factor was determined based on Equation 1 of the South Coast GSE MOU**:**

$$Composite\ EF\ (g/hp \cdot hr) = \frac{\sum_{i=1}^{n}[(EF_i)\cdot(Power_i)\cdot(LF_i)\cdot(A_i)]}{\sum_{i=1}^{n}[(Power_i)\cdot(LF_i)\cdot(A_i)]}$$

Where EF is the emission factor for each individual GSE, Power is the horsepower, LF is the load factor, and A is the Activity.

Table 3-9
HC+NOx Emission Factors (gm/bhp-hr and gm/bhp-hr^2) - Diesel

Horsepower	Model Year	Zero Hour	Deterioration Factor
25-50	<1988	8.8	7.18E-05
25-50	1988-1998	8.7	7.13E-05
25-50	1999-2003	7.0	0
25-50	2004-2013	5.6	0
51-120	<1988	14.4	1.41E-04
51-120	1988-1997	9.9	9.73E-05
51-120	1998-2003	7.9	7.73E-05
51-120	2004-2007	5.6	0
51-120	2008-2013	3.5	0
121-175	<1970	15.3	1.65E-04
121-175	1970-1971	14.1	1.52E-04
121-175	1972-1979	13.0	1.40E-04
121-175	1980-1984	11.9	1.29E-04
121-175	1985-1987	11.9	1.28E-04
121-175	1988-1996	9.2	9.93E-05
121-175	1997-2002	6.8	7.34E-05
121-175	2003-2006	4.9	0
121-175	2005-2013	3.0	0
176-250	<1970	15.3	1.65E-04
176-250	1970-1971	14.1	1.52E-04
176-250	1972-1979	13.0	1.40E-04
176-250	1980-1984	11.9	1.29E-04
176-250	1985-1987	11.9	1.28E-04
176-250	1988-1995	9.2	9.93E-05
176-250	1996-2000	6.5	6.99E-05
176-250	2001-2002	5.5	5.93E-05
176-250	2003-2005	4.9	0
176-250	2006-2013	3.0	0
251-500	<1970	15.3	2.29E-04
251-500	1970-1971	14.1	2.11E-04
251-500	1972-1979	13.0	1.94E-04
251-500	1980-1984	11.9	1.78E-04

Table 3-9
HC+NOx Emission Factors (gm/bhp-hr and gm/bhp-hr^2) - Diesel

Horsepower	Model Year	Zero Hour	Deterioration Factor
251-500	1985-1987	11.8	1.77E-04
251-500	1988-1995	9.2	1.38E-04
251-500	1996-2000	6.5	9.67E-05
251-500	2001-2005	4.8	0
251-500	2006-2013	3.0	0
501-750	<1970	15.3	2.29E-04
501-750	1970-1971	14.1	2.11E-04
501-750	1972-1979	13.0	1.94E-04
501-750	1980-1984	11.9	1.78E-04
501-750	1985-1987	11.8	1.77E-04
501-750	1988-1995	9.2	1.38E-04
501-750	1996-2000	6.8	1.02E-04
501-750	2001	5.5	8.18E-05
501-750	2002-2005	4.8	
501-750	2006-2013	3.0	0
751-1000	<1970	15.3	2.29E-04
751-1000	1970-1971	14.1	2.11E-04
751-1000	1972-1979	13.0	1.94E-04
751-1000	1980-1984	11.9	1.78E-04
751-1000	1985-1987	11.8	1.77E-04
751-1000	1988-1999	9.2	1.38E-04
751-1000	2000-2005	7.2	1.07E-04
751-1000	2006-2013	4.8	0

Source: KB Environmental Sciences, 2013.

Table 3-10
HC+NOx Emission Factors (gm/bhp-hr and gm/bhp-hr^2) - Gasoline

Horsepower	Model Year	Zero Hour	Deterioration Factor
25-50	<2001	11.8	5.31E-04
25-50	2001-2013	5.0	0
51-120	<2001	14.5	2.26E-04
51-120	2001-2013	3.0	0
>120	<2001	14.6	1.40E-04
>120	2001-2013	3.0	0

Source: KB Environmental Sciences, 2013.

Table 3-11
HC+NOx Emission Factors (gm/bhp-hr and gm/bhp-hr^2) – CNG/LPG

Horsepower	Model Year	Zero Hour	Deterioration Factor
25-50	<2001	14.4	6.49E-04
25-50	2001-2013	5.0	0
51-120	<2001	12.1	1.89E-04
51-120	2001-2013	3.0	0

Horsepower	Model Year	Zero Hour	Deterioration Factor
>120	<2001	11.9	1.14E-04
>120	2001-2013	3.0	0

Source: KB Environmental Sciences, 2013.

3.2.1.8 Correction Factors

The emission factors for turbine air starts were reduced by a factor of 3.1, per the GSE MOU. There are seven turbine air starts. The emission factors for equipment identified as on-road equivalent were reduced by a factor of 4.1, per the GSE MOU. There are 133 on-road equivalents GSE.

3.2.1.9 Aggregate Average Emission Rate for Existing LAX GSE

Based on the above approach, factors, and assumptions, the aggregate average HC+NOx emission rate for the existing GSE fleet at LAX is 5.17 gm/bhp-hr.

3.2.2 Emissions Estimates Based on CARB Approach

As indicated above, a new methodology based on the suite of CARB regulations applicable to GSE, specifically, the In-Use Off-Road Diesel (ORD) Vehicle Regulation, Large Spark Ignition (LSI) Engine Fleet Regulation, and Portable Engine Airborne Toxic Control Measure (ATCM) was used to calculate emissions associated with the 2013 LAX GSE fleet. To assist large fleet operators (i.e., >5,000 total fleet hp) with planning for compliance with the ORD Regulation, CARB has developed the Large Fleet Average Calculator (LFAC). As further described below, the emission performance calculator portion of that tool, was adapted to calculate GSE emission performance for both diesel and non-diesel GSE (e.g., gasoline-powered and alternative fuel or LSI GSE) in the LAX GSE fleet.

3.2.2.1 Approach to Calculating GSE Emissions Performance Based on Adaption of LFAC

Although CARB developed the LFAC to determine emissions and benefits of fuel conversion/electrification strategies for diesel GSE fleets, the tool can be adapted to evaluate emissions from both diesel and LSI GSE operating at LAX. Briefly, the LFAC requires the fleet operator to enter information regarding all of the diesel engines and alternative-fuel replacements (e.g., fuel type, year of manufacture, and horsepower) into a spreadsheet tool referred to as DOORS ("Diesel Off-road On-line Reporting System"). The LFAC tool then assigns a NOx emission factor (in g/bhp-hr) to each off-road diesel engine (and replacement units) and calculates the composite NOx emission fleet average based on the individual engines in the fleet.[4] CARB has provided guidance on how the appropriate NOx emission factor is to be assigned for alternate fueled vehicles (e.g., LSI, on-road, and electric-powered units). The emission factors provided in the LFAC are for NOx; however, the user (fleet operator) has the option to assign an emission factor to each unit/engine. Using this feature, the LFAC can be adapted to calculate a composite NOx+HC emission factor, because the user can assign the appropriate NOx+HC factor for each unit.

The NOx+HC emission factors and related input data to be applied in the LAX GSE emission performance calculation are explained within the following sections. GSE subject to the Off-Road Diesel ATCM (including replacement units that are powered by alternate fuels and/or on-road

[4] Additional functionality is provided in the tool to determine the appropriate ORD fleet average and amount of credit available under the ORD rule; this functionality will not be used.

equivalent engines) are first considered, followed by units subject to the Portable Engine ATCM, and finally units subject to regulation under the LSI rule. It should be noted that the following discussion describes the various features of the LFAC, how they work, and whether and how they can be modified. The discussion below includes those features that were used or modified in developing the new estimates of emissions, but also includes descriptions of certain LFAC features that were not able to be used in calculating the new estimates because the required information was not available from the 2013 LAS GSE inventory survey, but could be used in the future should LAWA use the LFAC to update the airport's GSE emissions estimates and obtains the necessary information from GSE operators at that time.

GSE Subject to Regulation under the Off-Road Diesel ATCM

- *Off-Road Diesel-powered GSE:* The LFAC look-up tables provide NOx emission factors, which are derived based on engine testing data (for engines not subject to CARB engine standards) and from maximum allowable CARB emission standards that apply to off-road diesel engines. These CARB emission standards vary based on horsepower and year of engine manufacture. To assign NOx + HC emission factors for these engines, the new analysis applied the appropriate promulgated non-road emission standard(s)[5] for both NOx and HC. Where the engine is not subject to a standard, the assigned LFAC NOx emission factor was divided by 0.87, per CARB guidance. These NOx + HC emission factors for off-road diesel engines are provided in **Table 3-12**.

Table 3-12

Off-Road Diesel Emission Factors by Horsepower and Year (g/bhp-hr) - NOx+HC

Engine Model Year	Horsepower Group							
	25-49	50-74	75-99	100-174	175-299	300-599	600-750	750+
1900-1969	8.3	17.0	17.0	18.3	18.3	17.5	17.5	17.5
1970-1971	8.3	17.0	17.0	17.0	17.0	16.2	16.2	16.2
1972-1979	8.3	17.0	17.0	15.6	15.6	14.9	14.9	14.9
1980-1987	8.3	17.0	17.0	14.4	14.4	13.7	13.7	13.7
1988	8.2	11.4	11.4	10.7	10.7	10.2	10.2	10.2
1989-1995	8.2	11.4	11.4	10.7	10.7	10.2	10.2	10.2
1996	8.2	11.4	11.4	10.7	7.9	7.9	7.9	10.2
1997	8.2	11.4	11.4	7.9	7.9	7.9	7.9	10.2
1998	8.2	7.9	7.9	7.9	7.9	7.9	7.9	10.2

[5] See http://www.arb.ca.gov/regact/offrdcie/frooal.pdf; table of emission factors at provided at www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls&rct=j&frm=1&q=&esrc=s&sa=U&ei=FfWtU8exO8q6oQT_joKQBQ&ved=0CBQQFjAA&usg=AFQjCNGN9tbu5D6wJfa8ylp1f41cb1dtGQ. Note no adjustment is made for flex engines, consistent with ARB guidance (FAQ Questions, see page 2; http://www.arb.ca.gov/msprog/ordiesel/documents/emissionfactorsfaq.pdf

Table 3-12

Off-Road Diesel Emission Factors by Horsepower and Year (g/bhp-hr) - NOx+HC

Engine Model Year	Horsepower Group							
	25-49	50-74	75-99	100-174	175-299	300-599	600-750	750+
1999	7.1	7.9	7.9	7.9	7.9	7.9	7.9	10.2
2000	7.1	7.9	7.9	7.9	7.9	7.9	7.9	7.9
2001	7.1	7.9	7.9	7.9	7.9	4.8	7.9	7.9
2002	7.1	7.9	7.9	7.9	7.9	4.8	4.8	7.9
2003	7.1	7.9	7.9	4.9	4.9	4.8	4.8	7.9
2004	5.6	5.6	5.6	4.9	4.9	4.8	4.8	7.9
2005	5.6	5.6	5.6	4.9	4.9	4.8	4.8	7.9
2006	5.6	5.6	5.6	4.9	3.0	3.0	3.0	4.8
2007	5.6	5.6	5.6	3.0	3.0	3.0	3.0	4.8
2008	5.6	3.5	3.5	3.0	3.0	3.0	3.0	4.8
2009	5.6	3.5	3.5	3.0	3.0	3.0	3.0	4.8
2010	5.6	3.5	3.5	3.0	3.0	3.0	3.0	4.8
2011	5.6	3.5	3.5	3.0	1.7	1.7	1.7	2.9
2012	5.6	3.5	2.7	2.7	1.7	1.7	1.7	2.9
2013	3.5	3.5	2.7	2.7	1.7	1.7	1.7	2.9
2014	3.5	3.5	2.7	2.7	0.44	0.44	0.44	2.9
2015+	3.5	3.5	0.44	0.44	0.44	0.44	0.44	2.6

Unshaded: (LFAC NOx factor)/0.87; Shaded: ARB Off-Road emission standard, NOx+HC, except Tier 1 for 50-175HP:(NOx Std)/0.87

Tier 1 Tier 2 Tier 3 Tier 4i/final

- *On-road diesel powered GSE*: CARB allows fleet operators to take credit for the use of on-road units as replacements to their off road diesel fleet (see ARB guidance FAQ, see http://www.arb.ca.gov/msprog/ordiesel/documents/emissionfactorsfaq.pdf). The LFAC provides the appropriate NOx emission factor for on-road units, which therefore must be adjusted to compute the NOx + HC. These values are provided in **Table 3-13.**

Table 3-13 On-Road Diesel Emission Factors	
Engine Model Year	**NOx + HC Emission Factor (g/bhp-hr)**
Pre–1979	Use NOx+ HC Factor assigned in Figure 1
1979	8.6
1980-1984	5.9
1985-1986	5.9
1987-1990	6.9
1991-1993	5.7
1994-1997	5.7
1998-2003	4.6
2004-2006	Use actual NOx+HC certification per referenced EO in DOORS database
2007+	

1979-2003: (ARB on-road heavy duty NOx value)/0.87
2004-2007: Use referenced Executive Order in DOORS from fleet operator

LSI GSE and Alternative-Fueled GSE in the Off-Road Fleet

The LFAC allows fleet operators to calculate emissions from GSE powered by large spark ignition and alternative-fueled engines 25 horsepower or greater (or that replaced a diesel vehicle 25 horsepower or greater). The appropriate NOx+HC emission factors for these spark-ignition units are provided in **Table 3-14**.

Table 3-14 Emission Factors (HC+NOx) for LSI Engines by Model Year (g/bhp-hr)	
Engine Model Year (MY)	**HC + NOx Emission Factor (g/bhp-hr)**
Pre-2001 MY	12.0
Uncontrolled 2001-2003 MY	
Controlled 2001-2003 MY	3.0
2004 – 2006 MY	
2007 – 2009 MY	0.6 – 2.0 Per Engine Certification Level
2010 + MY	0.6

Electric GSE in the Off-Road Diesel Fleet

All of the ARB fleet retrofit rules recognize the benefit of electrification; electric powered GSE have a NOx + HC emission factor of zero, and a horsepower rating identical to the off-road diesel GSE that was replaced by electric-powered unit. Consistent with ARB guidance, the electric units must perform the work of a diesel engine, be used for a purpose for which diesel vehicles are predominantly used, and must be used primarily outdoors. In addition, the CARB regulations provide for supplemental credit for any piece of electric GSE purchased prior to January 1, 2007.[6] Specifically, twenty percent the entire horsepower of all electric GSE purchased prior to January 1, 2007 is to be counted towards the ORD inventory. While such information was not available in the LAX 2013 GSE inventory, it is anticipated that LAX GSE fleet operators can provide to LAWA in the future, if needed, the aggregate horsepower of electric GSE purchased prior to 2007 (expressed in equivalent horsepower of diesel that is replaced) and LAWA can account for a single electric unit with twenty percent of this composite horsepower into the LFAC. This 20 percent credit is consistent with CARB guidance and the CARB ORD rule.

Adoption of LFAC to Incorporate GSE Subject to Portable Engine ATCM

Diesel equipment that is not self-propelled,[7] such as diesel generators, air conditioners, and air compressors, if 50 horsepower and greater, are subject to the Portable Engine ATCM. Diesel-powered units and alternate fueled units are to be entered into the LFAC consistent with the guidance provided above for similar-powered units subject to the Off-Road Diesel ATCM, as outlined above. Although not available from the LAX 2013 GSE inventory, LAWA can, in the future, provide additional credit to those GSE fleet operators who installed gate power, which replaced diesel-powered GSE providing the same utilities. Credit can be provided based on the total amount of diesel horsepower that was replaced through gate electrification. This total horsepower can be provided a zero NOx+HC emission factor, consistent with CARB guidelines (see http://www.arb.ca.gov/portable/perp/perpatcm.pdf, Fleet average calculations, section (d)(2)).

Adoption of LFAC to Incorporate GSE Subject to LSI Rule

Unlike the Off-Road Diesel and Portable Diesel ATCMs, the LSI fleet targets are expressed as NOx + HC. The new analysis used the latest LSI inventory and entered the appropriate average fleet emission factor (e.g., large or medium forklift or GSE fleet) into the LFAC together with the corresponding total LSI fleet horsepower. Where horsepower data are not available for specific GSE, the average horsepower by GSE category (per the GSE MOU Appendix 2, Table 3) was assigned, and the total horsepower for the fleet was calculated.

Incorporation of Other Credits

CARB provides a low use exemption under each of the three fleet rules. Under the ORD and LSI rules, GSE operated annually 200 hours or less are not to be included in fleet average calculations. Under the Portable Engine ATCM, the annual low use threshold is 80 hours per year. Although not available from the LAX 2013 GSE inventory, LAWA can, in the future, identify those GSE that qualify for low use

[6] See http://www.arb.ca.gov/msprog/ordiesel/faq/faqelectricgse.pdf

[7] Equipment that does not contain an engine that provides motive power or equipment that is designed and capable of being carried or moved from one location to another (i.e., portable).

under the applicable CARB fleet rule, as appropriate. When identified as low-use units, these GSE are not to be entered into the LFAC.

3.2.2.2 Aggregate Average Emission Rate for Existing LAX GSE

Based on the new approach described above, the aggregate average HC+NOx emission rate for the existing GSE fleet at LAX is 5.6 gm/bhp-hr. It is important to note that this estimate is considered to be conservative (high) because, as described above, the LFAC includes certain features to provide emissions reductions credits, such as credits for electrification of equipment and for gate power, and also normally does not include emissions from low-use equipment; however, the information necessary to calculate those emissions credits and exclusions was not available from the LAX 2013 GSE inventory.

This page intentionally left blank.

Section 4
Alternatives for Reducing LAX GSE Emissions

Based on a review of the overall existing LAX GSE fleet characteristics described in Section 3, several options were considered relative to reducing LAX GSE emissions. The following discusses the basic characteristics, effectiveness, and feasibility considerations of several potential options, recognizing that an overall reduction in GSE emissions at LAX will likely involve combinations of several, if not all, of the options, and there are bound to be variations on each option. Moreover, it is understood that the selection and implementation of various options for achieving LAX GSE emissions reductions will be determined by the individual GSE owners/operators based on the specific characteristics of their GSE fleet. Additionally, it should be noted that the options considered below relative to reducing GSE emissions at LAX do not take into account alternative fuels other than electrical power and, to a lesser degree, LPG/CNG. Other fuels such as ethanol, methanol, and biodiesel may play a role in the reduction of GSE emissions at LAX; however, it is not possible within the scope of this study to estimate the extent to which each of those fuel types may be utilized in the future at LAX and quantify the associated emissions reductions. Similarly, hydrogen is another potential alternative fuel for reducing emissions, but, based on existing technology and feasibility/cost factors associated with converting equipment to hydrogen power, it is considered unlikely to play a role in achieving a notable reduction in LAX GSE emissions.

The fact that there are numerous potential options for reducing GSE emissions and that the individual GSE owners/operators will select a particular combination of options, which may change over time, depending on the business and operational characteristics specific to each owner/operation, is underscored by the stakeholder comments received on the October 2013 report. As indicated in comments from the A4A, the regulatory structure of the CARB fleet rules related to GSE sets very aggressive emission targets that GSE owners/operators must meet in future years, but also allows the flexibility for owners/operators to determine the means and technologies that are best suited to their individual situations and will achieve those targets. The A4A also pointed out that emission levels and target years reflected in the CARB fleet rules, particularly the ORD rule, take into account the timing of when certain extremely low emission technologies, such as Tier 4 diesel engines, will be phased into the marketplace, which is a key consideration in assessing the feasibility of GSE emission reduction options. In response to A4A's suggestion that the LAX eletGSE feasibility study should give more consideration to the role of the CARB fleet rules in serving to reduce GSE emissions at LAX, LAWA's technical consultants coordinated with A4A's technical consultants to develop GSE emissions estimates that were based on achieving the CARB emissions targets at LAX. Under this scenario, the emissions levels associated with the equipment identified in the LAX 2013 GSE inventory was assumed to be consistent with the applicable emissions targets in the CARB fleet rules, beginning in 2014 and extending through 2023. The underlying assumption was that the individual GSE owner/operators would each determine the emissions reductions options best suited to their needs relative to meeting the emissions targets for the various years. The analysis results provided a basis to assess if and when the LAX GSE emissions goal of 2.65 grams per brake-horsepower hour for HC and NOx emissions would be achieved based on compliance with CARB fleet rules, as applied to LAX. That analysis is presented below in Section 4.3.

4.1 Potential Options Related to Converting Equipment and/or Reducing Emissions

4.1.1 Retire Older Higher Emitting Equipment

In reviewing the individual emission characteristics of each piece of GSE contained in the 2013 inventory, it was noted that the top 100 emitters consisted primarily of older equipment, with the average model year of 1988 (25 years old) compared to the overall LAX GSE fleet average model year being 2001. Theoretically, retiring the top 100 emitters, which represents only 4 percent of the LAX GSE fleet, would achieve a 25 percent reduction in the airport's aggregate average GSE emission rate (i.e., would reduce the current rate of 5.17 gm/bhp-hr to 3.93 gm/bhp-hr). Although it is not feasible to simply retire all the GSE that comprise the top 100 emitters, given that many of those equipment are likely to be integral to a GSE owner/operator's function at LAX, the high extent to which older GSE, particularly heavy-duty equipment, contribute to the airport's aggregate average GSE emission rate warrants equipment retirement as one option to consider. Alternative options to retiring such equipment include replacement with a new model having extremely low emission technology, or to replace or retrofit the existing engine for reduced emissions, as described in the other options below.

4.1.2 Replace Existing Equipment

Under this option, certain existing GSE would be replaced with (converted to) newer cleaner (lower emitting) equipment. Consideration of this option has a particular emphasis on the increased use of zero-emission vehicles, notwithstanding that replacement with other alternative-fueled (LPG/CNG) GSE or simply replacing ~~very~~ old pieces of equipment with new~~er~~ models would also help~~, to a lesser degree,~~ move towards achieving LAWA's desired GSE emissions reductions. In estimating the approximate level of emissions reduction associated with converting existing GSE to ZEV (electric), two sensitivity scenarios were completed, targeting certain equipment that is widely used at the airport. As sensitivity runs, the primary purpose of these analyses was to show, in general terms, the extent of emissions reductions associated with the replacement of certain conventional fuel GSE types with electric versions that are known to be available on the market. While it was assumed, for analysis purposes, that the conversion of such GSE types would be complete (i.e., all of the GSE in that category would be converted to electric), it is recognized that the individual circumstances of certain GSE operations may preclude their conversion to eGSE, such as if the normal operation of such equipment requires travelling long distances or lifting/pulling very heavy loads, and due consideration given to safety and efficiency in the operation of GSE. The purpose of the analysis was not to hone down to the particular operating characteristics of individual pieces of equipment at LAX, but rather it was to show and compare, in general terms, the amount of emissions reductions associated with converting certain categories of GSE to eGSE. The two sensitivity scenarios evaluated as part of the study are~~,~~ as follows:

- **Convert all aircraft tractors, baggage tugs, belt loaders, and cargo tractors to ZEVs**; a total of 686 pieces of equipment (25 percent of LAX GSE fleet). This scenario would reduce the aggregate GSE emission rate by 2.45 gm/bhp-hr (47 percent reduction) with a resulting aggregate emission rate of 2.72 gm/bhp-hr. The contribution to reduction is largest for baggage tugs, followed by aircraft tractors, cargo tractors, and belt loaders.

- **Convert all aircraft tractors, baggage tugs, belt loaders, and cargo tractors with a model year of 2001 or older to ZEVs;** a total of 294 pieces of equipment (11 percent of LAX GSE

fleet). This scenario would reduce the aggregate emission rate by 1.87 gm/bhp-hr (36 percent reduction) with a resulting aggregate emission rate of 3.29 gm/bhp-hr.

As further discussed below, there are feasibility questions regarding whether certain types of these GSE categories are available as ZEVs; however, the results of the sensitivity analysis support the notion that substantial reductions in GSE emissions can occur through the targeting of certain equipment for conversion to extremely low emission technology.

Notwithstanding that the conversion of existing equipment to ZEV technology achieves, by definition, a reduction in emissions, it is also recognized that the replacement of older conventional fuel GSE with new conventional fuel GSE would also achieve a reduction in emissions. This is especially the case given current state and federal regulations that set forth increasingly more stringent emissions limitations, and relative to the increasing production and availability of low and extremely low emission conventional fuel engines. For example, manufacture year 2012 and newer LSI engines must meet a 0.6 gm/bhp-hr NOx + HC performance level, as compared to between 3 and 12 gm/bhp-hr NOx + HC performance for older engines, as shown in Table 3-13. Similarly, the emissions levels for off-road diesel engines will experience a significant reduction beginning around manufacture year 2012 and continuing through 2015+.

4.1.3 Retrofit Existing Equipment

Under this scenario, certain equipment would be retrofitted with newer cleaner-burning engines. This approach to reducing emissions may be particularly suitable for certain heavy-duty or specialty equipment for which there is no ZEV model or other extremely low emission technology available, such as diesel-powered tractors for towing wide-body aircraft or for high-deck heavy cargo loaders. A sensitivity analysis was completed to estimate the amount of emission reduction that would occur if all diesel-powered GSE at LAX, except for those that already have low emission rates, were retrofit with engines that meet federal Tier III or better emission standards ~~(i.e., the most stringent diesel emission standards currently in effect)~~. The results of the sensitivity analysis are as follows:

- **Retrofit all diesel-powered GSE,** except diesel GSE already with the lowest emission factor within the South Coast GSE MOU (i.e., no further benefit can be achieved), **with engines that meet federal Tier III or better emission standards**; a total 220 pieces of equipment (8 percent of fleet). This scenario would reduce the aggregate GSE emission rate by 1.75 gm/bhp-hr (34 percent reduction) with a resulting aggregate emission rate of 3.42 gm/bhp-hr.

Full implementation of this scenario where all diesel-powered GSE would be retrofit with Tier III or better engines is unlikely given that certain equipment may not have Tier III or better replacement engines available. As a variation to this option, the retrofitting of older diesel-powered GSE with Tier II engines, which are not as clean as Tier III or better engines, but are arguably more available, would help to reduce the airport's GSE aggregate emissions rate, particularly with regard to heavy-duty diesel-powered equipment for which there currently no extremely low emission technology equivalents.

With regards to retrofitting engines to achieve emission reductions, comments from A4A noted that for LSI engines CARB and industry worked together to develop CARB-verified three-way NOx + HC retrofit catalysts that can achieve clean LSI performance standards: 1.0 g/bhp-hr NOx + HC or better. That technology, and other such retrofit options, are available to GSE owners/operators for the reduction of GSE emissions.

4.1.4 Reclassifying Certain GSE

Most GSE are typically considered to be, and are regulated as, "nonroad equipment," which are subject to air pollution control standards that are less stringent than those applicable to on-road vehicles. As noted above in Section 2.2, the South Coast GSE MOU defines GSE to include equipment that "lacks a license plate issued by the California Department of Motor Vehicles," presumably reflecting the fact vehicles licensed by the state to operate on public roadways are already subject to strict state and federal emission standards, and to periodic emissions control inspections and confirmation (i.e., smog checks in conjunction with registration renewal. Some GSE currently operating at LAX, such as certain fuel trucks, food/catering trucks, cabin service trucks, lavatory trucks, and the like are built on on-road chassis and are eligible for California license plates. To the extent that certain GSE at LAX are reclassified into this category, providing that they can be successfully plated, other actions taken for the remainder of the GSE, such as retirement, replacement, or retrofitting per the discussion above, will focus on nonroad equipment and older on-road equipment that do not meet current state emission control requirements.

4.2 Feasibility Considerations

The evaluation of feasibility considerations related to extremely low emission technologies focused primarily on electric equipment and supporting infrastructure. Consideration was also given to LPG/CNG-powered equipment as an additional option to reduce GSE emissions; however, based on preliminary research, it appears that the application of this technology is generally limited to a narrow range of GSE types, such as baggage tugs and forklifts that operate on LPG and airfield buses that operate on CNG. LAWA may consider additional research, outside the scope of work for the current task order, into the LPG/CNG option and its related supporting infrastructure. The need for additional attention to, and consideration of, the use of CNG as an alternative to conventional fuel technology and in certain cases to eGSE (i.e., where no electric alternatives exist) was noted by A4A.

4.2.1 Equipment Availability

Based on meetings and interviews with GSE owners and operators at LAX, discussions with GSE specialists, analysis of the 2013 LAX GSE inventory, and review of the GSE characteristics at other airports, including Seattle-Tacoma (Sea-Tac) Airport, Dallas-Fort Worth (DFW) Airport, and San Francisco (SFO) Airport as addressed in a benchmark study completed in conjunction with this feasibility study, it was found that certain categories of GSE are readily available today in electric versions, while other GSE categories are not currently available in electric versions and are unlikely to be so in the foreseeable future. This range of eGSE availability is described below in terms of progressive tiers of eGSE, from most-available to least-available, with light-duty common-use equipment being most available, and heavy-duty and specialized equipment being the least-available or nonexistent. As noted above in Section 4.1.2, it was assumed, for analysis purposes, that the conversion of certain types of GSE described below would be complete (i.e., all of the GSE in that category would be converted to electric), although it is recognized that the individual circumstances of certain GSE operations may preclude their conversion to eGSE, such as if the normal operation of such equipment requires travelling long distances or lifting/pulling very heavy loads, and due consideration given to safety and efficiency in the operation of GSE. The tiered approach presented below relative to potential options for conversion of existing GSE at LAX to a lower emission technology reflects the fact that those types of GSE for which there are readily available or generally electric versions, could have a higher likelihood of being utilized for emission reductions than for other GSE types that are better suited for other potential options, given limited or no availability of electric equivalents. It is also recognized that GSE owners/operators may, depending on their

particular circumstances, simply opt to replace older conventional fuel GSE with new lower emission conventional fuel GSE in the interest of reducing emissions and working towards meeting the emissions targets set forth by CARB regulations, notwithstanding some level of conversion ZEV technology could be a key consideration in the various owners/operators plans for meeting those targets.

- **Tier A – Readily Available in Electric Versions:** This tier includes categories of GSE that are readily available in electric versions and are widely used as such at LAX and other airports. Such equipment includes baggage tugs, belt loaders, light-duty carts (i.e., golf carts), lavatory carts, hydrant carts, passenger stands, and sweepers.

- **Tier B – Generally Available in Electric Versions:** This tier includes categories of GSE that are generally available in electric versions and appear to be increasing in use as such at various airports including LAX. Such equipment includes narrow-body aircraft "push-back" tractors, forklifts, and medium-capacity cargo tractors. It should be noted that the aircraft tractors in this category are limited to those that push-back or tug-in aircraft only short distances from and to the gate, and do not include aircraft tractors used to move aircraft to and from more distant areas such as RON/RAD areas or maintenance areas. Similarly, the feasibility of using electric versions of medium-capacity cargo tractors would generally be limited to localized operations (i.e., operating in close proximity to the aircraft and cargo warehouse/processing facility, as opposed to loading/unloading cargo to/from the bellies of passenger planes at the CTA and hauling the loads to/from the cargo processing facilities located in the eastern and southern areas of the airport).

- **Tier C – Electric Versions as an Emerging Technology:** This tier includes categories of GSE that have recently started becoming more available in electric versions, and are anticipated to expand in presence at airports including LAX. Such equipment includes wide-body aircraft push-back tractors, cargo/lower deck loaders, and lifts. Similar to above, the aircraft push-back tractors in this category would be short-distance gate use only; no towing over distance.

- **Tier D: On-Road Chassis GSE:** This tier includes categories of GSE that are normally built on on-road chassis, such as aircraft service trucks (provisions, cabin cleaning/maintenance, catering, lavatory, water, fuel, misc.). While technically it may be possible to produce such equipment in electric versions, the likelihood and feasibility of doing so at LAX is considered to be low for several reasons. Preliminary research into such equipment as electric versions failed to find any available at this time. Also, similar to other types of commercial-use vehicles designed for on-road use, such as buses, shuttles, and various types of trucks, the availability of this type equipment as a low-emission alternative-fuel vehicle is more likely to occur as LNG/CNG models than electric, notwithstanding recent efforts by major companies such as FedEx and Staples to move towards electric vehicles. Lastly, as noted above, much of this type of equipment is suitable for use on public streets, which if so licensed/plated by the state of California, the equipment is not subject to the GSE requirements at LAX.

- **Tier E: Electric Versions/Alternative Fuels Considered Not Technologically Feasible:** This tier includes categories of GSE for which there are currently no electric versions available and, due to the operational characteristics of, and demands on, such equipment, it is unlikely that electric versions will be produced in the foreseeable future. Such GSE include aircraft tow tractors that must transport aircraft considerable distances, such as at LAX in moving aircraft from passenger gates at the CTA to RON/RAD areas or maintenance facilities in the western

portion of the airport. The amount of energy draw on electric tow tractors for such activities would typically exceed the capacity of the batteries, causing the equipment to fail while *en route,* or, if the tow was successful, would leave the batteries so hot as to preclude them from being successfully recharged within a reasonable amount of time. This is also considered the case relative to large-capacity/heavy-duty cargo tractors and bobtails, as well as large-capacity fuel trucks. Based on the heavy load and distance characteristics associated with operation of this type of GSE, this tier also considers the conversion to alternative fuels such as LPG/CNG to be infeasible. Given the lower energy content of LPG/CNG compared to diesel fuel, the operational range associated with these alternative fuels is comparatively less, requiring more frequent fueling and/or the installation of larger fuel tanks on the equipment. For this tier of equipment, the more practical and feasible option for reducing emissions would be replacing or retrofitting the equipment with diesel engines that meet federal Tier III or Tier IV emission standards.

- **Tier F: Specialty Equipment Typically Not Well-Suited to Mobile Electric Versions:** This tier includes categories of GSE where there are other, arguably better, options than conversion to electric versions. This includes portable air conditioners at passenger gates, where a better solution is the installation of a permanent preconditioned air (PCA) unit at the gate connected to grid power, and also includes portable generators and ground power units (GPUs) to serve parked aircraft, whereby a better solution is the installation of grid-powered 400 Hz power units at the gate/parking position. Both the provision of PCA at all passenger gates and the electrification (400 Hz) of passenger gates and cargo/maintenance aircraft parking positions are existing requirements for LAX, which are in the process of being implemented. In cases where there is still the need for such GSE, such as for back-up cooling or power, or in areas where the grid-based systems are not yet installed, or other special circumstances, it is generally considered more feasible to reduce emissions from these GSE by replacing or retrofitting the equipment with diesel engines that meet federal Tier III or Tier IV emission standards.

It should be noted that the categorization of GSE into the different tiers above is general in nature and not intended to be absolute and discrete. That is, there may be particular types of GSE within a category assigned to a certain tier that might be suitable for another tier depending on their specific characteristics and circumstances. For example, GSE within Tier D generally include aircraft service equipment built with on-road chassis, which, as noted above, may be more likely to be reclassified as non-GSE or converted to LPG/CNG than converted to electric. There may, however, be certain equipment within that category that are not suitable for reclassification as non-GSE and/or one of the major on-road electric commercial vehicle manufacturers, such as Smith Electric, EStar, or Navistar International, offers a chassis design well suited for certain aircraft service equipment, in which case such equipment may be more appropriately considered under Tier C relative to emerging technology. It should also be noted that, depending on individual circumstances, there will be a certain amount of GSE where the owners/operators will not change technology, but rather will simply replace older conventional fuel GSE with newer low emission conventional fuel models.

4.2.2 Supporting Infrastructure

The following describes the electrical infrastructure requirements associated with supporting the operation of eGSE at all passenger gates and cargo aircraft parking positions at LAX. The focus of the analysis being on the electrical infrastructure is intended to respond to earlier inquiries by various LAX GSE owners/operators as to whether LAX has the electrical power and infrastructure to support a

larger conversion to eGSE (i.e., GSE owners/operators unwilling or hesitant to make a larger commitment to eGSE at LAX if there's not the power and infrastructure to support it)~~based on two key considerations: first, that the conversion of GSE at LAX to eGSE is likely to be a, if not the, major factor in the ability to achieve substantial reductions in GSE emissions at LAX; and, second, the conversion of GSE to eGSE is one of the few options that involves infrastructure considerations~~. Other options described above in Section 4.1 such as retiring GSE, retrofitting GSE with newer cleaner engines, and reclassifying GSE do not have implications relative to supporting infrastructure. While increased utilization of LPG/CNG-powered GSE at LAX can play a key role in reducing GSE emissions at LAX, the extent to which the conversion/use of such GSE is considered feasible at LAX is not known at this time and, that notwithstanding, the sizing and siting of new LPG/CNG fueling facilities at LAX is not within the scope of this study.

4.2.2.1 LAX Electrical Infrastructure Related to Charger Systems for eGSE

4.2.2.1.1 Planning Assumptions by Area of Airport

The following presents the general planning assumptions used in estimating the nature, location, and number of battery chargers needed to support a full fleet of eGSE at various operational areas within LAX. It should be noted that the planning related to the location of charging stations assumes the stations to be in close proximity to the aircraft gate/parking position, where the majority of GSE activity occurs. Preliminary consideration was given to the viability of developing eGSE charging centers at locations removed from the passenger terminal areas and the main cargo aircraft activity areas. However, based on a meeting with LAWA properties department, no suitable areas for such use were found to be available in reasonable proximity to the terminal/cargo areas, and discussions with eGSE operators and experts indicated that the placement of eGSE charging centers at available properties farther away from the terminal/cargo areas would not work due to the transit time and battery charge drawn-down associated with eGSE traveling the distance to and from the charging centers.

- **Central Terminal Area (CTA) – Terminals 1 through 8**
  - Charger power needs at the CTA were estimated on a gate-by-gate basis, assuming design aircraft indicated on current LAX Gate Map, as categorized by wide-body (WB), narrow-body (NB), and regional jet (RJ). **Table 4-1** provides a breakdown of the estimated charger needs, and also notes the number and of existing chargers at various areas and whether those chargers are smart chargers. As indicated above, estimates of charger needs described in this section are based on general planning assumptions, including an assumption that the number of chargers needed at each gate/parking position reflects the amount necessary to support a full fleet of eGSE. Those estimates of future charger needs are greater than the number of chargers that currently exist or are currently planned to be installed mainly because there are presently only certain types of GSE available in electric versions. The estimates of future charger needs may, therefore, be considered conservative, but is still considered to provide a reasonable basis for assessing potential electrical infrastructure improvement needs at LAX.

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	Design Aircraft	Classification	Power (kW)	Charge Ports	# of Charge Ports (04/08/2013)	Notes
PASSENGER GATES						
Terminal 1						
1	737	NB	40	4	2	Smart Charger
2	737	NB	40	4		
3	737	NB	40	4	2	Smart Charger
4A	737	NB	40	4	2	Smart Charger
4B	737	NB	40	4	2	Smart Charger
5	737	NB	40	4		
6	737	NB	40	4		
7	737	NB	40	4	4	
8	737	NB	40	4	10	
9	737	NB	40	4	2	Smart Charger
10	737	NB	40	4		
11	757	NB	40	4	2	Smart Charger
12	767	WB	40	4		
13	737	NB	40	4	2	Smart Charger
14	737	NB	40	4		
Terminal 1 - Total			**600**	**60**	**28**	
Terminal 2						
21	A340	WB	80	10		
21B	757	NB	40	4		
22	777	WB	80	10		
23	A340	WB	80	10		
24	A340	WB	80	10		
24A	757	NB	40	4		
25	777	WB	80	10		
26	747	WB	80	10		
27	767	WB	80	10		
28	747	WB	80	10		
Terminal 2 - Total			**720**	**88**	**0**	
Terminal 3						
30	737	NB	40	4		
31A	777	WB	80	10		
31B	737	NB	40	4		
32	737	NB	40	4		
33A	737	NB	40	4		
33B	737	NB	40	4		
34	777	WB	80	10		

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	**Design Aircraft**	**Classification**	**Power (kW)**	**Charge Ports**	**# of Charge Ports (04/08/2013)**	**Notes**
35	747	WB	80	10	2	
36	737	NB	40	4		
37A	767	WB	80	10		
37B	757	NB	40	4		
38	777	WB	80	10		
Terminal 3 - Total			**680**	**78**	**2**	
Terminal 4						
40	757	NB	40	4	10	
41	747	WB	80	10		
42A	757	NB	40	4		8 wall sockets
42B	767	WB	80	10	2	
43	747	WB	80	10	3	
45	767	WB	80	10	18	
46A	767	WB	80	10	2	
46B	737	NB	40	4	2	
47A	757	NB	40	4	2	
47B	767	WB	80	10	4	
48A	757	NB	40	4	8	
48B	747	WB	80	10	8	
49A	777	WB	80	10		
Terminal 4 - Total			**840**	**100**	**59**	
Terminal 5						
50B	737	NB	40	4	16	Smart Charger
51A	757	NB	40	4		4 SCs planned
51B	767	WB	80	10		
52A	767	WB	80	10		12 SCs planned
53A	757	NB	40	4		4 SCs planned
53B	757	NB	40	4		
54A	767	WB	80	10		
54B	757	NB	40	4		16 SCs planned
55A	757	NB	40	4		4 SCs planned
56	757	NB	40	4		
57	777	WB	80	10		
58	747	WB	80	10		
59	757	NB	40	4		
Terminal 5 - Total			**720**	**82**	**16**	Note: Planned Smart Chargers based on Tenant's (Delta Airlines') anticipated eGSE fleet needs

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	Design Aircraft	Classification	Power (kW)	Charge Ports	# of Charge Ports (04/08/2013)	Notes
Terminal 6						
60	757	NB	40	4		
61	767	WB	80	10		
62	767	WB	80	10	24	Smart Charger
63	767	WB	80	10		
64	757	NB	40	4	8	Smart Charger
65	757	NB	40	4	2	Smart Charger
66	767	WB	80	10	2	Smart Charger
67A	757	NB	40	4		
67B	767	WB	80	10	0	
68A	767	WB	80	10		
68B	747	WB	80	10		
69A	777	WB	80	10		
69B	767	WB	80	10	1	
Terminal 6 - Total			**880**	**106**	**37**	
Terminal 7						
70A	757	NB	40	4	4	Smart Charger
70B	757	NB	40	4	2	Smart Charger
71A	A320	NB	40	4		
71B	767	WB	80	10	6	Smart Charger
72	777	WB	80	10	4	Smart Charger
73	767	WB	80	10		
74	747	WB	80	10		
75A	757	NB	40	4	4	Smart Charger
75B	767	WB	80	10	2	Smart Charger
76	747	WB	80	10	32	Smart Charger
77	747	WB	80	10		
Terminal 7 - Total			**720**	**86**	**54**	
Terminal 8						
80	CRJ-7	RJ	30	2		
81	A320	NB	40	4	2	Smart Charger
82	CRJ-2	RJ	30	2	5	
83	A320	NB	40	4	2	Smart Charger
84	A320	NB	40	4	1	
85	CRJ-7	RJ	30	2	2	Smart Charger
86	A320	NB	40	4	2	Smart Charger
87	A320	NB	40	4		
88	CRJ-7	RJ	30	2	1	

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	Design Aircraft	Classification	Power (kW)	Charge Ports	# of Charge Ports (04/08/2013)	Notes
Terminal 8 - Total			**320**	**28**	**15**	
American Eagle Commuter Facility						
44A	CRJ-7	RJ	30	2		
44B	CRJ-7	RJ	30	2		
44C	CRJ-7	RJ	30	2		
44D	CRJ-7	RJ	30	2		
44E	CRJ-7	RJ	30	2		
44F	CRJ-7	RJ	30	2		
44G	CRJ-7	RJ	30	2		
44H	CRJ-7	RJ	30	2		
44I	CRJ-7	RJ	30	2		
44J	CRJ-7	RJ	30	2		
American Eagle - Total			**300**	**20**	**0**	
Bradley West (Based on design plans)						
122	737	NB	40	4		
123	A380	WB	80	10		
130	A380	WB	80	10		
131	747	WB	80	10		
132	747	WB	80	10	2	Smart Charger
133	747	WB	80	10		
134	A380	WB	80	10	2	Smart Charger
148	747	WB	80	10		
150	A380	WB	80	10	2	Smart Charger
151	737	NB	40	4		
152	A380	WB	80	10	2	Smart Charger
153	747	WB	80	10		
154	A380	WB	80	10	2	Smart Charger
155	747	WB	80	10		
156	A380	WB	80	10	2	Smart Charger
157	747	WB	80	10		
159	A380	WB	80	10		
Bradley West - Total			**1280**	**158**	**12**	
West Remote Passenger Gates (Assumes half-complement of GSE fleet)						
201	767	WB	40	5		
202	A340	WB	40	5		
203	747	WB	40	5		
205	767	WB	40	5		
206	747	WB	40	5		

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	Design Aircraft	Classification	Power (kW)	Charge Ports	# of Charge Ports (04/08/2013)	Notes
207	A340	WB	40	5		
208	A340	WB	40	5		
209	A340	WB	40	5		
210	MD-11	WB	40	5		
211	767	WB	40	5		
212	747	WB	40	5		
213	A340	WB	40	5		
214	A340	WB	40	5		
215	A340	WB	40	5		
216	747	WB	40	5		
217	A340	WB	40	5		
218	A340	WB	40	5		
219	A340	WB	40	5		
West Gates - Total			**720**	**90**	**0**	
CARGO POSITIONS						
B1 Cargo Area						
1	747	WB	80	10		
2	747	WB	80	10		
3	747	WB	80	10		
B1 Cargo Area - Total			**240**	**30**	**0**	
C1 Cargo Area						
1	747	WB	80	10		
2	747	WB	80	10		
C1 Cargo Area - Total			**160**	**20**	**0**	
Imperial Area						
1	747	WB	80	10		
2	747	WB	80	10		
3	747	WB	80	10		
Imp Cargo Area - Total			**240**	**30**	**0**	
South Pads						
1	747	WB	80	10		
2	747	WB	80	10		
3	747	WB	80	10		
4	747	WB	80	10		
5	747	WB	80	10		
South Pads - Total			**400**	**50**	**0**	
Singapore Airlines						
1	747	WB	80	10		

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	Design Aircraft	Classification	Power (kW)	Charge Ports	# of Charge Ports (04/08/2013)	Notes
2	747	WB	80	10		
Singapore - Total			**160**	**20**	**0**	
Korean Air Cargo						
1	747	WB	80	10		
2	747	WB	80	10		
Korean Air Cargo- Total			**160**	**20**	**0**	
JAL Cargo						
1	747	WB	80	10		
2	747	WB	80	10		
JAL Cargo- Total			**160**	**20**	**0**	
FedEx						
1	MD11	WB	80	10		
2	MD11	WB	80	10		
3	MD11	WB	80	10		
4	MD11	WB	80	10		
5	MD11	WB	80	10		
6	MD11	WB	80	10		
7	MD11	WB	80	10		
8	MD11	WB	80	10		
9	MD11	WB	80	10		
10	MD11	WB	80	10		
11	MD11	WB	80	10	16	Smart Chargers
FedEx - Total			**880**	**110**	**16**	
DHL/ABX						
1	MD11	WB	80	10	14	For forklifts and carts- Chargers in/near DHL Bldg east of Positions 1 and 2
2	MD11	WB	80	10		
3	MD11	WB	80	10		Inside CFS Bldg southeast of Position 3
4	MD11	WB	80	10		
DHL/ABX - Total			**320**	**40**	**28**	4 of the 28 are Smart Chargers
Imperial Cargo						
1	747	WB	80	10		
2	747	WB	80	10		
3	747	WB	80	10		
4	747	WB	80	10	3	In China Airlines Bldg
5	747	WB	80	10		

Table 4-1
Charger Profile by Passenger Gate and Cargo Position

			Charger Needs		Existing Chargers	
Gate/ Position	Design Aircraft	Classification	Power (kW)	Charge Ports	# of Charge Ports (04/08/2013)	Notes
6	747	WB	80	10	15	In Air China/AeroUnion Bldg
7	747	WB	80	10		
8	747	WB	80	10		
9	747	WB	80	10	2	In Air Canada/Pacific Air Bldg
10	747	WB	80	10		
Imperial Cargo - Total			**800**	**100**	**20**	
Other						
FedEx Maintenance Area					2	
Delta Maintenance Area					1	
United Maintenance - East Area					5	
United Maintenance - West Area (former CAL)					10	Smart Charger

- Assumes it is possible to cluster eGSE at a main multi-port charging station at each WB and NB gate. Does not take into account at this level of planning potential space constraints in gate areas, particularly with regards to some eGSE needing to remain at the charging station for an extended period. Further evaluation would be done at design level as to whether each gate has space available to accommodate such clustering or whether there needs to be "balancing" between gates (i.e., one gate may be able to accommodate only a portion of the eGSE assumed to be clustered at that gate, but adjacent gate may have additional space to accommodate the balance). Would also consider at that time whether a more closely managed rotation of eGSE at the charger station would allow for a smaller clustering (i.e., charging would be closely monitored with equipment immediately removed once a desired/sufficient charge level has been reached, thereby freeing-up a position for another piece of equipment and possibly reducing the extent of equipment clustering at the charging station).

- Does not account for the "charging corral" effect within each terminal, where GSE may be parked while away from the gate, such as at personnel break/lunch areas, bagging sorting areas, etc., and eGSE can be charging while parked if chargers are present. This practice currently occurs by Southwest Airlines at the "T-point" in Terminal 1, which reduces the charging needs at individual gates in Terminal 1.

- **American Eagle Commuter Terminal**

  - Power needs are estimated on a gate-by-gate basis assuming RJs at gates.

  - Assumes a charging station(s) at each of 10 gates (Gates 44A through 44J) adjacent/near the commuter terminal.

- **Tom Bradley International Terminal**
  - No planning assumptions are made for the existing Tom Bradley International Terminal, given that Bradley West improvements will replace the existing facility.
- **Bradley West**
  - Assumes 17 new gates, all of which are WB, except Gates 122 and 151 which are NB.
  - Several of the new west gates have a single dual-port charger near gate. Initial GSE planning design for Bradley West envisioned large clustered GSE parking areas at the north and south ends of the concourses, with some provisions for chargers within each area; however, those chargers have not been installed.
- **West Remote Gates**
  - Given that the West Remote Gates are not utilized in the same manner as other contact gates at the CTA and GSE equipment is generally not stationed at each remote gate on a full-time basis, it is reasonable to assume only half of the power needs of a typical WB gate.
- **Midfield Satellite Concourse (MSC)**
  - The number and sizing of gates for the future MSC is currently being planned by LAWA, with particular attention to the proposed near-term development of the MSC North Concourse. It is anticipated that the planning for eGSE chargers at the MSC will occur in conjunction with more detailed engineering and design of the facility, and the electric power infrastructure necessary to support that charging system would be appropriately sized and designed at that time. As such, further evaluation of the MSC is not needed as part of this feasibility assessment.
- **Cargo Areas**
  - Assumes same cargo positions as those being addressed in the 400 Hz Cargo and Maintenance Area Electrification study currently underway (44 cargo aircraft parking positions).
  - Assumes all cargo positions are WB, and generally utilize same GSE fleet mix as for WB passenger aircraft.
  - The power needs assessment focuses more on the cargo buildings near the respective cargo aircraft parking positions, as compared to focusing on the power needs on a gate-by-gate basis for passenger aircraft, given that GSE at the cargo areas tend to be in clusters near the various cargo buildings than being staged around each parking position.
- **Maintenance Areas**
  - Power needs assessment for chargers to support eGSE at aircraft maintenance areas was not conducted due to the very limited and specialized nature of GSE typically associated with aircraft maintenance. The most notable GSE associated with aircraft maintenance are aircraft tugs, which tow aircraft to and from maintenance areas, and portable ground power units. In the case of the former, the availability and feasibility of electric aircraft tugs that can tow

aircraft, especially, wide-body aircraft, long distances do not presently exist. Regarding the existing use of portable ground power units(GPUs) in maintenance areas, it is anticipated that the planned provision of 400 Hz power in cargo and maintenance areas will substantially reduce, if not eliminate, the continued use of those GSE.

- **Service Trucks (Provisions, Cabin Service, Catering, Lavatory, Water, Fuel, Misc.)**
  - Power needs assessment for chargers to support electric versions of such service trucks was not conducted for the reasons described above in Sections 4.1 and 4.2. For those GSE service truck operators that elect to convert their equipment to eGSE, the power necessary to support the required chargers would need to be determined based on the specific characteristics of those operators' plans.
- **Ground Handlers/GSE Operators**
  - Power needs assessment for chargers to support eGSE operated by ground handler companies at LAX, such as Swissport, Menzies, ASIG, etc., was not conducted based on the assumption that the vast majority of the charger needs would be provided at or near the individual passenger gates and cargo parking positions. This approach is consistent with the feedback LAWA received in a meeting with ground handlers; that the provision of the charging necessary to support eGSE is best accomplished at the point of use (i.e., next to the aircraft). While additional charging capabilities may be needed by the various ground handlers, such as to keep a reserve capacity of eGSE charged if needed during peak times of the day or to charge during eGSE maintenance, it is assumed that each ground handlers would make that power assessment at their respective facilities. Also, a power assessment at each existing ground handler tenant location was not conducted based on the fact that such locations may change by tenant (i.e., there are no designated GSE areas at the airport, such as is otherwise the case relative to aircraft gates and parking positions).

4.2.2.1.2 Typical GSE Fleet Composition by Aircraft Type and Assumed Charger Requirements Near Aircraft

The following describes the assumptions used in estimating the power demands for battery charging systems to support a fleet eGSE stationed at each gate or parking position. It is important to note that there are no established standards or readily accepted industry-wide guidelines for the planning of GSE charging equipment. Such planning is largely done on an ad hoc basis, with each GSE/eGSE user (i.e., airline or ground handler service provider) formulating their own plan based largely on the existing and planned inventory of eGSE within their fleet and their operational characteristics at each airport. The assumptions provided below are based on observations at LAX, discussions with GSE operators at LAX, and experts with familiarity and experience in eGSE planning.

The GSE listed below include those assumed to remain at gate/position the majority of time and assumes all such equipment would be electric in the future. GSE such as provisions trucks (cabin service/catering), lavatory trucks, fuel trucks, and hydrant trucks are assumed to be transient in nature and would stage remotely.

- **Wide-body (WB) Aircraft (i.e., B767/equivalent and larger)**
  - **GSE at Gate**

- ♦ 1 - Aircraft Push-Back Tractor[8] (two batteries)
- ♦ 2 – Container/Deck Loaders (two batteries each – four batteries total)
- ♦ 1 – Belt Loader (one battery)
- ♦ 4 – Baggage/Cargo Tractors (one battery each – four batteries total)

- **Power/Charger Assumptions**[9]
  - ♦ 80 kW - Charger: MVS800 or equiv. 10+ ports at single location

▪ **Narrow-body (NB) Aircraft (i.e., B737 to B757 and equivalent)**

- **GSE at Gate**
  - ♦ 1 - Aircraft Push-Back Tractor (one battery)
  - ♦ 2 – Belt Loaders (one battery each – two batteries total)
  - ♦ 2 – Baggage Tractors (one battery each – two batteries total)
- **Power/Charger Assumptions**
  - ♦ 40 kW - Charger: MVS400 or equiv. 4+ ports at one location

▪ **Regional Jets (RJ) (i.e., CRJ-2 through CRJ-7 and equivalent)**

- **GSE at Gate**
  - ♦ 1 - Aircraft Push-Back Tractor (one battery)
  - ♦ 1 – Belt Loader (one battery)
  - ♦ 1 – Baggage Tractor (one battery)
- **Power/Charger Assumptions**
  - ♦ 30 kW - Charger: DVS300 (two ports) or two SVS100 (one port each)

---

[8] Push-back tractors are only for very short distances, such as between gate and taxiway alley, and do not include aircraft tugs that would tow aircraft longer distances such as to/from aircraft remain overnight/remain all day (RON/RAD) parking areas and maintenance areas.

[9] Assumes chargers are "smart/rapid chargers" with GSE being rotated and having "opportunity charging" throughout the day, with longer deep/full charges occurring when possible. PosiCharge equipment models are listed in assumptions; however, that is for illustrative purposes only and actual equipment used could be from other manufacturers.

4.2.2.1.3 Electrical Power Infrastructure Upgrade Needs

Electrical Power Infrastructure Assessment Approach

In light of the eGSE charging system power needs projections described above and reflected in Table 4-1, an evaluation of the electrical power infrastructure at LAX was completed to assess the adequacy of the existing system to serve the future power needs, identify the nature and location of distribution system improvements needed to address potential deficiencies, and estimate the costs associated with those improvements. A copy of the power infrastructure assessment report completed by PBS Engineers is provided in Appendix C and the key findings of the assessment are summarized below.

The electrical power system assessment was divided into two geographic/functional areas of the airport; one being the passenger terminals and the other being the air cargo areas. **Figure 4-1** shows the locations of the two assessment areas.

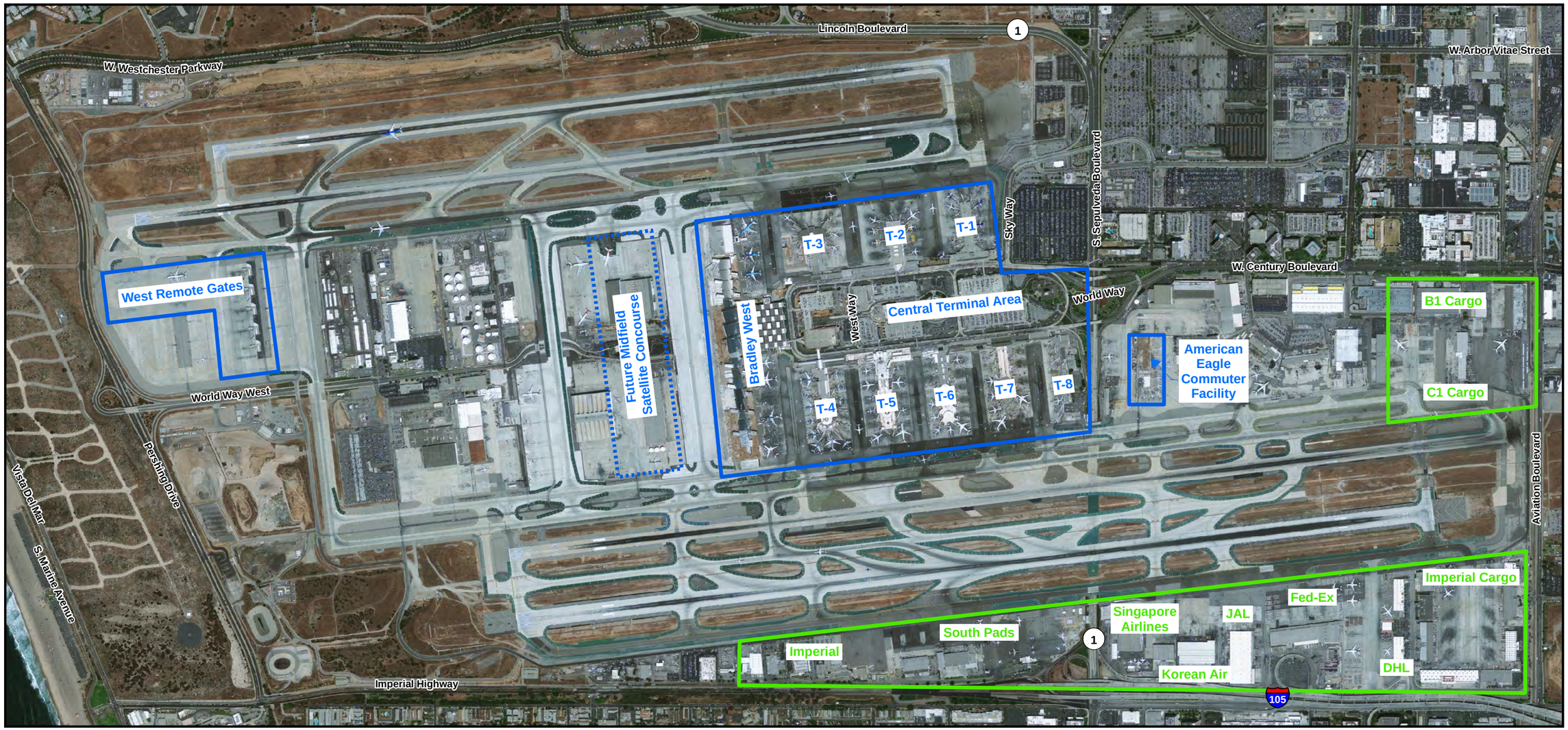
In conjunction with a review of existing electrical infrastructure plans for LAX, an extensive field survey of the condition, capacity, and structure of the existing electrical systems was conducted from February through April, 2013, and included visual, non-destructive observations, and consultation with LAWA and airline representatives via multiple interviews at the site. Also, each area was surveyed in detail to identify the location of existing battery chargers and supporting electrical distribution equipment.

After the utilities at each terminal/cargo area were assessed to understand their feasibility to support the conceptual design for an eGSE charging station in each area, load calculations based on this concept were performed to understand the potential utility needs and power distribution equipment sizing. Electric meter recordings, specifically the maximum peak demand readings in the last twelve (12) months, received from LAWA and airlines, i.e., tenants, were reviewed for confirmation and comparison purposes to ensure that all calculations are verified and justified, given that eGSE battery chargers are, or would be, served by the normal branch of the electrical distribution system.

Based on the analysis from the findings to support the electrification program, the existing main switchboards at the terminal/cargo areas were assessed relative to either being reused, replaced or upgraded. The assessment guidelines for making that determination were generally as follows:

- **Reusing Existing Switchboards**: The existing switchboards at some Terminals/Airline facilities have enough capacity to accommodate the additional battery charger loads. These switchboards have only been recently installed and since they are still in good condition, they can be reused and only new circuit breakers would need to be added.
- **Replacing Existing Switchboards**: The existing switchboards at some terminal/cargo areas have enough capacity to accommodate the additional battery charger loads; however, due to old age, poor physical conditions, or potential code compliance issues, these switchboards would need to be replaced with new switchboards of the same rating, i.e., 1-to-1 replacement.
- **Upgrading Existing Switchboards**: The existing switchboards at some terminal/cargo areas do not have adequate capacity to accommodate the additional battery charger loads in addition to the existing load. Therefore, these switchboards would need to be upsized with new switchboards of higher current ratings, i.e., higher amperage.

Confidential Draft Deliberative Material



Legend

- Passenger Terminal Area
- Future Passenger Terminal Area
- Air Cargo Area

Source: LAWA
Prepared By: CDM Smith, 2013

1,250 0 1,250
Feet

LAX Extremely Low Emission Technology GSE Feasibility Study	**Passenger Terminal Areas and Air Cargo Areas**	Figure **4-1**

This page intentionally left blank.

It is important to note that for all cargo facilities, except for those switchboards that are to remain for reuse, it was assumed all existing switchboards requiring replacement or upgrade would be replaced or upgraded in conjunction with the "400Hz Electrification Project," which is a separate project intended to provide grid-based electrical power to parked cargo aircraft in lieu of having to use on-board auxiliary power units or portable ground power units.

From the existing or new switchboards which are to be utilized for accommodating the additional battery charger loads and 400Hz electrification loads, new above-ground feeders (from the switchboards to the exterior of the buildings) and new underground feeders plus pull boxes (from the exterior of the buildings and on), would need to be installed to supply 480-Volt power up to the new disconnect switches or electrical outlets. All the electrical components from the aforementioned switchboards to these electrical termination points were considered in the assessment to be "electrical infrastructure," in order to distinguish the cost estimates for those improvements from the cost estimates associated with each battery charger station.

From the disconnect switches or electrical outlets (i.e., at the end of the electrical infrastructure) either 30KW, 40KW or 80KW charging stations would be installed as described in the planning assumptions above. The cost estimate for each charging station included the battery charger, charger stand, charger cable and cable management system, and installation.

It should be noted that the power infrastructure improvement/upgrade and charger station estimates assume the basic placement of a single multiport smart charger at each gate or cargo aircraft parking position. The estimates do not take into account the potential need for, and cost of, relocating existing utilities or the possibility that rather than a single large multiport charger being installed at each gate, several smaller chargers may instead be installed at or near certain gate areas due to space/logistical constraints. Such considerations would be addressed at more detailed levels of planning, engineering, and design.

The PBS Engineers electrical power infrastructure report contained in Appendix C provides detailed descriptions of the existing power infrastructure and chargers, if any, within the terminals/cargo areas and of the improvements needed to meet the estimated future power demands. Included with the report are figures delineating the layout of the existing infrastructure in each area and figures showing the conceptual power system design, single-line diagram, and electrical load calculation for each facility under future conditions.

Assessment Results

The assessment completed by PBS Engineers found that the existing electrical service from Los Angeles Department of Water and Power (DWP) coming in to each passenger terminal is adequate and no upgrade in service is required for incoming service; however, certain improvements/upgrades in the distribution systems within the terminals would be required. At Terminals 1, 3, 4, 6, and 7, new switchboard/panel boards would be required, along with new circuit breakers for some or all of the gates within those terminals (i.e., at gates where there is not already a circuit breaker serving an existing charger). For the West Remote Gates, it is assumed that the existing electrical service and switchboard from LAX Electrical Rooms 1 and 2 would be upgraded in conjunction with the separate 400 Hz Electrification Project, and new circuit breakers specific to the installation of battery chargers would be required at all gates. Terminals 2, 5, 8, and the American Eagle Commuter Terminal would not require a new switchboard/panel board, but they would require new circuit breakers at some or all gates. That would also be the case for the northern portion of Bradley West. In conjunction with each new circuit breaker at any of the gates noted above, a power feeder line along with a new

concrete pad and disconnect switch would also be required. The cost estimates included in Appendix C provide a detailed breakdown of the nature of electric power distribution system improvements/upgrades required at each passenger terminal as well as at the West Remote Gates.

PBS Engineers also conducted a similar type charger infrastructure assessment at the cargo aircraft parking areas, and found that new circuit breakers, feeder lines, concrete pads, and power disconnect switches would be required for all of the new chargers serving the parking positions. Each of the cargo areas would also require the existing electrical service and switchboards to be upgraded; however, relative to cost estimates, it was assumed that the service and switchboard upgrades would occur in conjunction with the 400Hz Electrification Project, which is a separate project.

The charger infrastructure assessment and associate cost estimates addressed two scenarios. One scenario assumed all new multiport smart chargers at all of the passenger gates and cargo areas per the planning assumptions described in Section 4.2.2.1.2, and the other scenario took into account those passenger gates and the one cargo area that already have some amount of smart chargers installed or planned. For the gates/area with existing smart chargers, best professional judgment was used to determine whether the nature, number, and current use characteristics of those existing chargers would meet future needs, or whether some additional increment of chargers would be needed in order to meet future needs. **Tables 4-2 and 4-3** below delineate the cost estimate for each scenario at the passenger terminals areas and at the cargo areas, respectively.

As indicated in Table 4-2, the most extensive improvements/upgrades for the passenger terminals/gates would occur at Terminal 3 and the West Remote Gates, and the least extensive would be at Terminal 8 and the American Eagle Commuter Terminal. When taking into account existing and planned charging stations, the greatest reduction in potential costs would be at Terminals 1, 5, and 7. It should be noted that the benefits of utilizing existing smart charging systems at LAX extend beyond just the cost savings shown in Table 4-2, but also include avoiding construction-related disruption at terminal and ramp areas that would occur when upgrading the electrical infrastructure for, and the installation of, new charging systems, and, moreover, taking advantage of the fact that the GSE ramp crews operating around the existing smart charging stations are already working with eGSE and understand the dynamics of maintaining charged equipment during daily activities.

Relative to the cargo areas indicated in Table 4-3, the most extensive improvements/upgrades would occur at the FedEx and Imperial Cargo areas, and the least extensive would be at the C1 Cargo and Imperial Terminal areas. The FedEx facility is the only cargo area that currently has smart chargers, which when taken into account would reduce the potential improvements/upgrade costs at that area by about 17 percent.

Table 4-2
eGSE Charger Infrastructure Improvements Cost Estimates for Passenger Terminals/Gates

	Assumes All New Equipment Without Existing Chargers			Assumes Use of Existing and Planned Smart Chargers		
Terminal	**Power Infrastructure Improvements**	**Battery Charging Station**	**Total**	**Power Infrastructure Improvements**	**Battery Charging Station**	**Total**
1	$385,016	$1,071,000	$1,456,016	$218,821	$571,200	$790,021
2	$156,242	$1,546,800	$1,703,042	$156,242	$1,546,800	$1,703,042
3	$982,536	$1,377,300	$2,359,836	$982,536	$1,377,300	$2,359,836
4	$444,865	$1,761,000	$2,205,865	$444,865	$1,761,000	$2,205,865
5	$157,813	$1,448,700	$1,606,513	$132,017	$844,800	$976,817
6	$513,890	$1,865,100	$2,378,990	$452,311	$1,546,800	$1,999,111
7	$319,865	$1,514,100	$1,833,965	$136,223	$422,400	$558,623
8	$186,928	$545,000	$713,928	$116,507	$283,800	$400,307
American Eagle Commuter Terminal	$229,394	$470,000	$699,394	$229,394	$470,000	$699,394
Bradley West	$223,361	$987,000	$1,210,361	$223,361	$987,000	$1,210,361
West Remotes	$1,120,616	$1,285,200	$2,405,816	$1,120,616	$1,285,200	$2,405,816
Midfield Satellite Concourse	N/A			N/A		
Total	**$4,720,527**	**$13,871,200**	**$18,591,727**	**$4,212,891**	**$11,096,300**	**$15,309,192**

Table 4-3
eGSE Charger Infrastructure Improvements Cost Estimates for Cargo Areas

	Assumes All New Equipment Without Existing Chargers			Assumes Use of Existing and Planned Smart Chargers		
Cargo Area	**Power Infrastructure Improvements (Including 25% Soft Costs)**	**Battery Charging Station (Charger and Installation)**	**Total**	**Power Infrastructure Improvements (Including 25% Soft Costs)**	**Battery Charging Station (Charger and Installation)**	**Total**
B1 Cargo	$262,176	$526,500	$788,676	$262,176	$526,500	$788,676
C1 Cargo	$66,834	$351,000	$417,834	$66,834	$351,000	$417,834
Imperial Terminal	$81,121	$351,000	$432,121	$81,121	$351,000	$432,121
South Pads	$274,241	$877,500	$1,151,741	$274,241	$877,500	$1,151,741
Singapore Airlines	$100,171	$351,000	$451,171	$100,171	$351,000	$451,171
Korean Air Cargo	$181,134	$351,000	$532,134	$181,134	$351,000	$532,134
JAL Cargo	$109,696	$351,000	$460,696	$109,696	$351,000	$460,696
FedEx	$621,427	$1,930,500	$2,551,927	$528,399	$1,579,500	$2,107,899
DHL/ABX	$176,005	$702,000	$869,005	$167,005	$702,000	$869,005
Imperial Cargo	$450,850	$1,755,000	$2,205,850	$450,850	$1,755,000	$2,205,850
Total	**$2,314,654**	**$7,546,500**	**$9,861,154**	**$2,221,627**	**$7,195,500**	**$9,417,127**

4.3 Financial Considerations

In conjunction with this feasibility study, the consulting firm AvAirPros completed a financial analysis to assess the fiscal considerations related to converting LAX GSE to extremely low emission technology, particularly as related to eGSE. The resultant financial analysis report is presented in Appendix D and is summarized below.

To evaluate the financial considerations of conventional fuel GSE versus electric GSE, the AvAirPros team surveyed existing GSE owner operators, GSE equipment and infrastructure manufacturers, as well as airline environmental and financial representatives. The major factors evaluated included equipment cost, equipment life, maintenance cost, part cost, battery life, battery cost, engine cost, fuel cost, electricity cost, electrical infrastructure and charging unit costs.

Table 4-4 provides a unit cost comparison of conventional fuel GSE and electric GSE, both in terms of the cost of new equipment and the cost of converting existing equipment. Based on the GSE manufacturers surveyed, electric equipment cost is generally 8 to 23 percent more than conventional fuel based equipment, with, in general, the heavier duty or more complex the unit, the greater the price differential. In surveying various manufacturers, it was noted that as the production volume of electric units increases in the future, the price differential will likely decrease.

Rather than buying new electric GSE units, some owner operators have converted conventional fuel based equipment to electric. The conversion can be technically difficult since the original equipment

engine is replaced with a new electric motor and batteries while using the original GSE chassis. Given the complexity, conversion cost can be material and vary greatly depending on the type, model, and quantity of equipment converted. GSE equipment types with lower unit costs (carts, fork lifts) are generally not economically feasible to convert. Additionally, some equipment types that are used for heavy loads and/or lifting cannot be converted to electric given the vehicle limitations for weight and balance. For equipment that is feasible for conversion, finding a vendor to perform the conversion may be challenging. This has led some airlines to perform selected conversion work in-house. Estimated conversion costs for selected GSE are included in Table 4-4.

Table 4-4
Conventional GSE vs. Electric GSE – Unit Cost Comparison

	Conventional (New)	Electric (New)	Difference (New)	Conversion of Existing Equipment
Aircraft Tractor (NB)	$132,000	$132,000	$0	$25,000
Aircraft Tractor (WB)	$370,000	$400,000	$30,000	$80,000
Baggage Tug	$33,100	$42,100	$9,000	$25,000
Belt Loader	$52,000	$57,200	$5,200	$15,000
Cargo Loader (15,000 lbs.)	$250,000	$275,000	$25,000	$50,000
Cargo Loader (60,000 lbs.)	$570,000	$620,000	$50,000	$75,000
Cargo Tractors (Medium Capacity)	$57,500	$66,500	$9,000	$40,000
Cart	$15,000	$19,500	$4,500	N/A
Forklift (3,000 - 6,000 lbs.)	$24,700	$35,500	$10,800	N/A
Forklift (10,000 lbs.)	$49,000	$70,600	$21,600	N/A
Hydrant Cart	$15,000	$19,500	$4,500	N/A
Lavatory Cart	$14,700	$19,100	$4,400	N/A
Lift (NB)	$58,200	$65,900	$7,700	$40,000
Lift (WB)	$140,000	$160,000	$20,000	$100,000
Passenger Stand	$55,000	$71,500	$16,500	$33,000
Sweeper	$60,000	$78,000	$18,000	$36,000

Source: AvAirPros, 2013.

In addition to comparing the costs of purchasing new equipment or converting existing equipment, the financial analysis provided a comparison of the annual ownership costs of conventional fuel-based GSE and electric GSE costs as annualized over the expected life of the equipment (determined in the financial analysis to be approximately 25 years). This comparison accounted for the costs of equipment purchase, annual maintenance, engine/battery replacement, fuel, and, for electric GSE, the cost of electrical infrastructure (electrical power infrastructure improvements and battery charging systems). **Table 4-5** provides an example of the type of annual cost breakdown developed for select GSE, which in this case is for an aircraft push-back tractor for a narrow-body aircraft at the passenger terminal. The assumptions and methodology used in developing the annual cost estimates for the various GSE are described in the financial analysis report and the report attachments, provided herewith as Appendix D.

Table 4-5
Conventional GSE vs. Electric GSE – Annual Cost Comparison: Aircraft Push-Back Tractor for Narrow-Body Aircraft at Passenger Terminal

	Conventional	Electric	Difference
Annual Equipment Expenditure	$5,280	$5,280	$0
Electrical Infrastructure	$0	$800	$800
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$3,200	$419
Annual Fuel Cost	$8,891	$1,424	($7,468)
Total Annual Cost	**$24,162**	**$15,105**	**($9,058)**

Source: AvAirPros, 2013.

Tables 4-6 and 4-7 provide a summary comparison of the annual costs for various types of GSE operating at the passenger terminals and operating at the cargo areas, respectively. The differences in the annual costs between the terminals area and the cargo area are based on the differences in the electrical power infrastructure improvements/upgrades estimated for the two areas, as described above in Section 4.2.2.1.3.

Table 4-6
Conventional GSE vs. Electric GSE - Annual Cost Comparison by Equipment Type (Passenger Aircraft Area)

GSE Type	Conventional GSE	Electric GSE	Cost Difference
Aircraft Push-Back Tractor (Narrow-Body)	$24,162	$15,105	($9,058)
Aircraft Push-Back Tractor (Wide-Body)	$33,682	$25,825	($7,858)
Baggage Tug	$16,572	$10,448	($6,123)
Belt Loader	$13,923	$9,526	($4,397)
Cargo Loader (Lower Deck)	$26,533	$20,943	($5,589)
Cargo Loader (Main Deck)	$39,933	$34,743	($5,189)
Cargo Tractor (Medium Capacity)	$18,533	$11,203	($7,329)
Cart	$9,882	$7,807	($2,075)
Forklift (3,000 – 6,000 lbs.)	$12,106	$10,449	($1,657)
Forklift (10,000 lbs.)	$13,726	$12,789	($937)
Fuel Hydrant Cart	$9,882	$7,807	($2,075)
Lavatory Cart	$9,867	$7,787	($2,080)
Lift (Narrow-Body)	$21,210	$10,861	($10,350)
Lift (Wide-Body)	$24,482	$14,625	($9,858)
Passenger Stand	$17,969	$10,437	($7,352)
Sweeper	$18,169	$10,697	($7,472)

Source: AvAirPros

Table 4-7
Conventional GSE vs. Electric GSE - Annual Cost Comparison by Equipment Type (Cargo Aircraft Area)

GSE Type	Conventional GSE	Electric GSE	Cost Difference
Aircraft Push-Back Tractor (Narrow-Body)	$24,162	$15,767	($8,395)
Aircraft Push-Back Tractor (Wide-Body)	$33,682	$26,487	($7,195)
Baggage Tug	$16,572	$11,111	($5,461)
Belt Loader	$13,923	$10,188	($3,735)
Cargo Loader (Lower Deck)	$26,533	$21,606	($4,927)
Cargo Loader (Main Deck)	$39,933	$35,406	($4,527)
Cargo Tractor (Medium Capacity)	$18,533	$11,866	($6,667)
Cart	$9,882	$8,470	($1,412)
Forklift (3,000 – 6,000 lbs.)	$12,106	$11,112	($995)
Forklift (10,000 lbs.)	$13,726	$13,452	($275)
Fuel Hydrant Cart	$9,882	$8,470	($1,412)
Lavatory Cart	$9,867	$8,450	($1,417)
Lift (Narrow-Body)	$21,210	$11,523	($9,687)
Lift (Wide-Body)	$24,482	$15,287	($9,195)
Passenger Stand	$17,969	$11,099	($6,870)
Sweeper	$18,169	$11,359	($6,810)

Source: AvAirPros

In general, the financial analysis found that while electric GSE has a higher initial cost, the lower operating costs cause electric GSE to have a more favorable annual life cycle cost than its conventional GSE counterpart. As stated, electric equipment cost is generally 8 percent to 23 percent higher than conventional fuel based equipment and the cost of power infrastructure and battery charging station should also be considered when buying electric. However, electric GSE can cost less in maintenance, parts and labor and electric fuel cost is generally 80 percent lower than conventional GSE fuel cost.

4.4 Future Emissions Levels Based on Compliance with CARB Fleet Rules

As described above in the introduction to Section 4, emission estimates for LAX GSE in future years were calculated assuming compliance with the CARB fleet rules. The emissions estimates were calculated using the LFAC, as described in Section 3.2.2.

Table 4-8 presents the large/medium fleet emission targets for off-road diesel equipment by horsepower. The LSI targets for forklifts is 1.1 g/hp-hr and other equipment is 2.5 g/hp-hr. The on-road diesel vehicles were set to 1.2 g/hp-hr. **Table 4-9** presents the small fleet emission targets for off-road diesel equipment by horsepower. These targets were assigned to the respective equipment, fuel type, year, and owner fleet size to determine fleet average emission index with compliance with the LSI and ORD rules.

Table 4-8
Large/Medium Fleet Off-Road Diesel Target Emission Factors by Horsepower and Year (g/bhp-hr) - NOx+HC

Engine Model Year	Horsepower Group							
	25-49	50-74	75-99	100-174	175-299	300-599	600-750	750+
2014	6.7	7.5	8.2	7.4	7.1	6.8	7.0	8.3
2015	6.4	7.1	7.7	6.9	6.7	6.3	6.4	7.8
2016	6.1	6.7	7.1	6.3	6.1	5.9	6.0	7.5
2017	5.7	6.2	6.3	5.6	5.4	5.2	5.3	6.9
2018	5.4	5.7	5.5	4.9	4.7	4.6	4.6	6.3
2019	5.1	5.3	4.7	4.3	4.0	3.9	3.9	5.7
2020	4.7	4.8	3.9	3.6	3.3	3.2	3.3	5.2
2021	4.4	4.4	3.1	2.9	2.6	2.5	2.6	4.6
2022	4.0	3.9	2.3	2.2	2.0	2.0	2.0	4.0
2023	3.8	3.4	1.6	1.5	1.7	1.7	1.7	3.9
Note: Small Fleet NOx Emission Targets/0.87								

Table 4-9:
Small Fleet Off-Road Diesel Target Emission Factors by Horsepower and Year (g/bhp-hr) - NOx+HC

Engine Model Year	Horsepower Group							
	25-49	50-74	75-99	100-174	175-299	300-599	600-750	750+
2019	6.7	7.5	8.2	7.4	7.1	6.8	7.0	8.3
2020	6.4	7.1	7.7	6.9	6.7	6.3	6.4	7.8
2021	6.1	6.7	7.1	6.3	6.1	5.9	6.0	7.5
2022	5.7	6.2	6.3	5.6	5.4	5.2	5.3	6.9
2023	5.4	5.7	5.5	4.9	4.7	4.6	4.6	6.3
Note: Small Fleet NOx Emission Targets/0.87								

The following represents the estimated fleet average emission index, based on the existing fleet composition, for future compliance years, assuming compliance with the suite of ARB fleet rules at LAX:

- The 2019 fleet average emission index is 3.0 g/hp-hr.
- The 2020 fleet average emission index is 2.7 g/hp-hr.
- The 2021 fleet average emission index is 2.4 g/hp-hr.
- The 2022 fleet average emission index is 2.0 g/hp-hr.
- The 2023 fleet average emission index is 1.8 g/hp-hr.

As shown, LAWA's GSE emissions goal of 2.65 g/bhp-hr is projected to be achieved by 2021 through compliance with the LSI and ORD rules, based on the existing fleet composition.

Section 5
Conclusions and Recommendations

5.1 Conclusions

5.1.1 Progressive Tiers of GSE Conversions – Emissions Reductions

Based on the nature, composition, and emissions of the existing GSE fleet operating at LAX, as described in Section 3, and the nature and feasibility of the potential options described in Section 4 relative to reducing GSE emissions at LAX, the increased use of eGSE in place of conventional fuel GSE at LAX could serve an important role as part of a larger mitigation strategy~~is considered to be a viable and attractive option~~ in moving towards achievement of substantial reductions in GSE emissions at LAX. It is recognized, however, that the utilization of eGSE at LAX has certain limitations, and by no means is it a single solution to meeting LAWA's goals for reducing GSE emissions at LAX. The expansion of eGSE at LAX does however, offer the opportunity for near-term reductions in GSE emissions, to the extent that there are certain categories of GSE that are already well-suited to that zero-emission technology. Other categories of GSE may never be suited to electrification, in which case the implementation of other emission reduction options is more appropriate. It is also recognized, however, that GSE owners/operators at LAX, as well as throughout the state, have already been working on, and making substantial financial and operational commitments to, various means of reducing GSE emissions in order to meet CARB fleet rule requirements and such means may or may not include increased utilization of eGSE. As summarized below, the LAX eletGSE feasibility study includes estimates of future GSE emissions levels based on specified assumptions of how certain categories of GSE would achieve emissions reductions, such as conversion to zero emission (electric) equipment, conversion to CNG/LPG, or conversion to newer clean diesel engine technology. In response to A4A comments received on the October 2013 report, additional estimates of future GSE emissions were developed that did not specify the means by which emission reductions would occur, but rather were based on an overall assumption that all of the GSE operating at LAX in the future would have emission levels consistent with the applicable CARB fleet rules emissions targets at LAX. The original emissions estimate were based on a prescriptive approach (i.e., by converting "W" equipment to "X" zero/low emission technology, the resultant composite average GSE emission rate at LAX would be "Y"). The additional emissions estimates, on the other hand, took more of a performance-based approach (i.e., the CARB fleet rules establish specific emissions levels for various types and sizes of engines, which if all of the LAX 2013 GSE fleet mix is achieving those target emissions levels at LAX, the resultant composite average GSE emission rate at LAX would be "Z"). Under the latter approach, there is the underlying assumption that the individual GSE owners/operators would implement whatever emission reduction approaches and technologies necessary to meet the state's requirements that make most sense for their particular operation at LAX. Relatedly, also in response to comments received from A4A, the development of the new emissions estimates was based on a methodology and assumptions adapted from the state's program for evaluating compliance with the CARB fleet rules.

The following outlines the potential GSE emission reductions and affected GSE fleet at LAX with the application of certain options to the various tiers of GSE described in Section 4.2 above. ~~Also noted below is the potential implementation time frame for each tier.~~ As discussed in Section 4.3 above, it is anticipated that GSE emissions at LAX will be reduced over time based on anticipated compliance with CARB fleet rules applicable to GSE, with the exact means by which such emissions reductions occur

being largely at the discretion of each GSE owner/operator depending on individual circumstances. It is likely that many, if not all, of the potential options reflected in the various tiers below will be incorporated to varying degrees in the near-term (i.e., next 3-5 years) and long-term (i.e., next 5-10+ years) plans of the GSE owners/operators along with the option to simply replace older conventional fuel GSE with newer lower emission conventional fuel GSE.

- **Tier A GSE: Readily available as eGSE and widely-used today**
  - *GSE Types*: Baggage tugs, belt loaders, carts, lavatory cart, hydrant carts, passenger stands, and sweepers.
  - *Emission Reduction Approach*: Convert fuel-based GSE to electric.
  - *Affected Inventory and Amount of LAX Aggregate GSE Emission Rate Reduction*: A total 494 pieces of equipment (18 percent of fleet). This scenario would reduce the aggregate emission rate by 1.26 gm/bhp-hr (24 percent reduction).
  - ~~*Implementation Timeframe*: Near-term (0-5 years).~~
- **Tier B GSE: Generally available and increasing in use**
  - *GSE Types*: Narrow-body aircraft push-back tractors, forklifts, and medium-capacity cargo tractors.
  - *Emission Reduction Approach*: Convert fuel-based GSE to electric.
  - *Affected Inventory and Amount of LAX Aggregate GSE Emission Rate Reduction*: A total 436 pieces of equipment (16 percent of fleet). This scenario would reduce the aggregate emission rate by 0.91 gm/bhp-hr (18 percent reduction).
  - ~~*Implementation Timeframe*: Near- to mid-term (0-8 years).~~
- **Tier C GSE: Emerging technology**
  - *GSE Types*: Wide-body aircraft push-back tractors, cargo/lower deck loaders, and lifts.
  - *Emission Reduction Approach*: Convert fuel-based GSE to electric.
  - *Affected Inventory and Amount of LAX Aggregate GSE Emission Rate Reduction*: A total 232 pieces of equipment (9 percent of fleet). This scenario would reduce the aggregate emission rate by 0.85 gm/bhp-hr (16 percent reduction).
  - ~~*Implementation Timeframe*: Mid- to long-term (5-12 years).~~
- **Tier D GSE: GSE built on on-road chassis considered unlikely for electrification**
  - *GSE Types*: Catering/cabin service trucks, fuel trucks, lavatory trucks, other, and water trucks.
  - *Emission Reduction Approach*: Convert fuel-based GSE to CNG (excluding existing CNG GSE which is 2000 model year or newer).

- *Affected Inventory and Amount of LAX Aggregate GSE Emission Rate Reduction*: A total 216 pieces of equipment (8 percent of fleet). This scenario would reduce the aggregate emission rate by 0.88 gm/bhp-hr (17 percent reduction).

- ~~*Implementation Timeframe*: Mid- to long-term (5-12 years)~~

- **Tier E GSE: eGSE not technologically feasible**

  - *GSE Types*: Aircraft towing tractors, bobtails, fuel trucks (large capacity), deicer, and large-capacity cargo tractors.

  - *Emission Reduction Approach*: Convert diesel-fueled GSE to Tier III (excluding existing diesel GSE which is already Tier III or better).

  - *Affected Inventory and Amount of LAX Aggregate GSE Emission Rate Reduction*: A total 12 pieces of equipment (<1 percent of fleet). This scenario would reduce the aggregate emission rate by 0.10 gm/bhp-hr (two percent reduction).

  - ~~*Implementation Timeframe*: Mid- to long-term (5-12 years).~~

- **Tier F GSE: Specialty equipment typically not well-suited to mobile electric versions**

  - *GSE Types*: Air conditioners, air starts, generators, and GPUs.

  - *Emission Reduction Approach*: Convert diesel-fueled GSE to Tier III (excluding existing diesel GSE which is already Tier III or better).

  - *Affected Inventory and Amount of LAX Aggregate GSE Emission Rate Reduction*: A total 55 pieces of equipment (two percent of fleet). This scenario would reduce the aggregate emission rate by 0.24 gm/bhp-hr (five percent reduction).

  - ~~*Implementation Timeframe*: Mid- to long-term (5-12 years).~~

The baseline aggregate HC+NO_x emission rate for GSE at LAX is 5.17 gm/bhp-hr based on the South Coast GSE MOU emissions calculation methodology; accounting for fuel type, horsepower, and model year of existing equipment. This aggregate emission rate is greater than the goal of 2.65 gm/bhp-hr. In evaluating potential strategies to reduce the aggregate HC+NO_x emission factor, the tiers of GSE presented above were considered in terms of a series of progressive tiers of eGSE conversion (starting with the most feasible technology, then moderately feasible technology, and working up to least feasible technology). **Table 5-1** below summarizes the GSE emissions reduction approach considered for each tier and quantifies the amount of aggregate GSE emission rate reduction specific to each tier and in terms of the cumulative aggregate LAX GSE emission rate with the sequential addition of each tier.

Table 5-1
Summary of Aggregate LAX GSE Emission Rates with Tiered Implementation of Emission Reduction Options

Condition	Electric Feasibility Description	Fuel Description	Reduction in Aggregate LAX GSE Emission Rate	Affected Inventory Population	Cumulative Aggregate LAX GSE Emission Rate
Baseline			--	2,724	5.17
Tier A	Readily Available	Electric	1.26	494	3.91
Tier B	Generally Available	Electric	0.91	436	3.00
Tier C	Emerging Technology	Electric	0.85	232	2.15
Tier D	On-road Chassis	CNG	0.88	216	1.27
Tier E	Not Feasible	Tier III Diesel	0.10	12	1.17
Tier F	Not Feasible	Tier III Diesel	0.24	55	0.94

Source: KB Environmental Sciences, 2013.

Under these assumptions and approach, implementation of Tier A would result in an aggregate LAX GSE emission rate of 3.91 gm/bhp-hr. Implementation of Tiers A and B would result in an aggregate LAX GSE emission rate of 3.00 gm/bhp-hr and implementation of Tiers A, B, and C would result in an aggregate LAX GSE emission rate of 2.15 gm/bhp-hr, which is below the goal of 2.65 gm/bhp-hr. Tiers D, E, and F would provide additional reductions in the aggregate LAX GSE emission rate.

Figure 5-1 presents the GSE fuel type distribution by GSE type for the baseline and progressive tiers. The percentage of electric equipment increases from 36.7 percent within the baseline condition, to 54.8 percent with implementation of Tier A, to 70.8 percent with implementation of Tier A and B, and to 79.3 percent with implementation of Tiers A, B, and C.

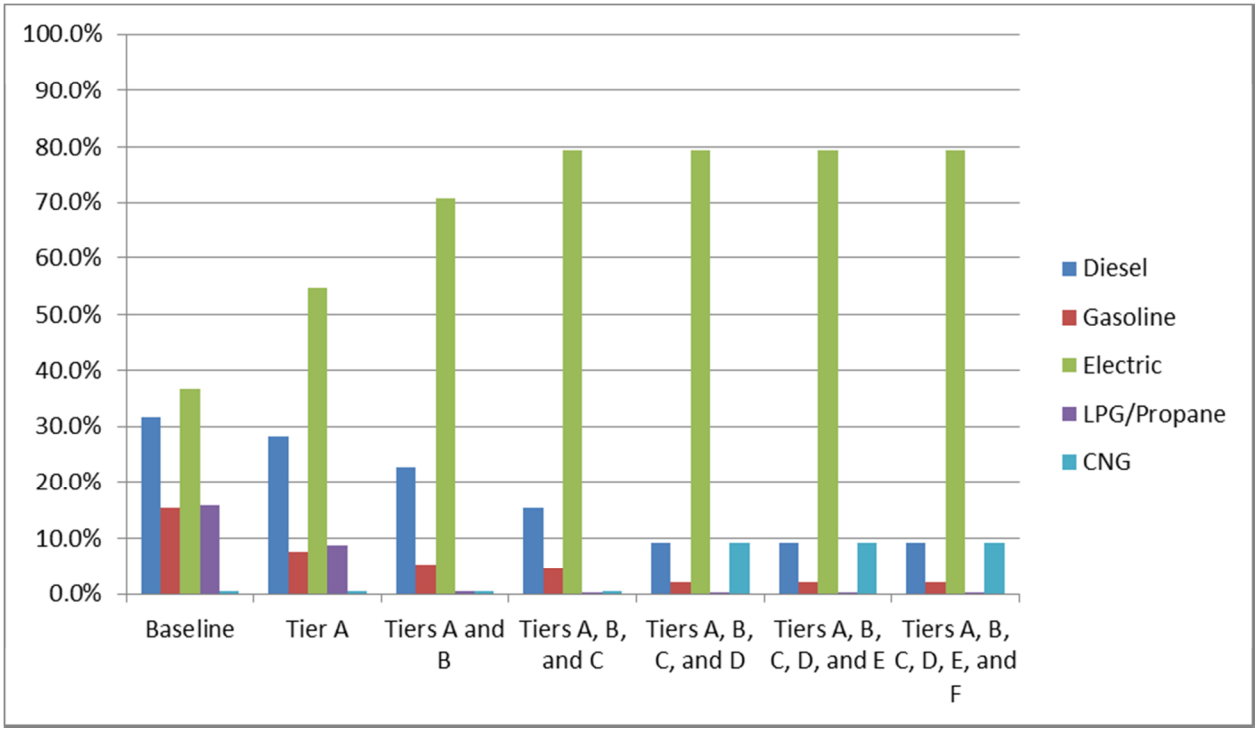


Figure 5-1 GSE Fuel Type Distribution for Baseline Conditions and With Implementation of Progressive Tiers of GSE Conversions

5.1.2 Financial Considerations Associated with the Tiered Approach

In conjunction with the financial analysis completed by AvAirPros, a GSE cost *pro forma* was completed for the conversion of conventional GSE to eGSE as proposed under Tiers A though C above. The details of the analysis are presented in AvAirPros' report, provided herewith as Appendix D, and are summarized below.

- **Tier A:** Upon implementation of the conversion of Tier A to electric, a total of 494 pieces of equipment (18 percent of the fleet) would be replaced (i.e., new electric GSE would be purchased to replace those particular GSE with the LAX inventory), representing approximately $23 million in one-time capital costs. Electric rather than conventional GSE would result in $2.8 million in annual cost savings, which includes the capital costs amortized over 25 years.

- **Tier B:** Upon implementation of the conversion of Tier B to electric, a total of 436 pieces of equipment (16 percent of the fleet) would be replaced (i.e., new electric GSE would be purchased to replace those particular GSE with the LAX inventory), representing approximately $28 million in one-time capital costs. Electric rather than conventional GSE would result in $1.8 million in annual cost savings, which includes the capital costs amortized over 25 years.

- **Tier C:** Upon implementation of the conversion of Tier C to electric, a total of 232 pieces of equipment (nine percent of the fleet) would be replaced (i.e., new electric GSE would be purchased to replace those particular GSE with the LAX inventory), representing approximately $70 million in one-time capital costs. Electric rather than conventional GSE would result in $1.5 million in annual cost savings, which includes the capital costs amortized over 25 years.

- **Tiers A, B, and C Combined:** Upon implementation of the conversion to electric of Tiers A, B, and C, a total of 1,162 pieces of equipment (43 percent of the fleet) would be replaced, representing approximately $121 million in one-time capital costs. Electric rather than conventional would result in $6.1 million in annual cost savings, which includes the capital costs amortized over 25 years.

5.1.3 Compliance with CARB Fleet Rules – Emissions Reductions

In developing GSE emissions estimates based on the assumption of compliance with CARB fleet rule requirements, as specifically applied to LAX, LAWA utilized a methodology based on CARB fleet rules that apply to GSE; specifically, the ORD Vehicle Regulation, the LSI Engine Fleet Regulation, and the Portable ATCM. These existing CARB fleet rules require operators to achieve improved emissions performance that meet specific requirements, including certain emission level targets identified for specific future years, and are anticipated to be accomplished through retirement, replacement, or retrofit of virtually all older, higher emitting equipment. The emissions estimates developed under this approach were based on the use of existing CARB tools, emission factors, and related emission inventory elements. The following represents the estimated fleet average emission index (i.e., the composite average emission factor) at LAX, based on the existing fleet composition, for future compliance years, assuming compliance with the suite of ARB fleet rules:

- The 2019 fleet average emission index is 3.0 g/hp-hr.
- The 2020 fleet average emission index is 2.7 g/hp-hr.

- The 2021 fleet average emission index is 2.4 g/hp-hr.
- The 2022 fleet average emission index is 2.0 g/hp-hr.
- The 2023 fleet average emission index is 1.8 g/hp-hr.

As shown, LAWA's GSE emissions goal of 2.65 g/bhp-hr is projected to be achieved by 2021 under this approach that is based on compliance with the CARB fleet rules, as specifically applied to LAX, based on the existing fleet composition.

5.2 Recommendations

As noted above, the conversion of existing conventional fuel-based GSE to eGSE ~~appears to be a viable and attractive option~~offers the potential for substantially reducing GSE emissions at LAX. Recommended next steps identified in the October 2013 report included the following:

1. Share the results of this study with key stakeholders at LAX including GSE owners/operators such as airlines and third-party service providers, as well as Airlines for America (A4A), for review and comment. Seek, in particular, input as to whether any other key considerations or other options for reducing GSE emissions at LAX should have been addressed. Also, request feedback regarding to what degree and under what circumstances would the stakeholders support or oppose the migration to eGSE at LAX. As reflected in this updated report, such input was received and has been responded to.

2. Support current and planned efforts at LAX for reducing GSE emissions through formalization of a GSE policy, outlining, among other things, potential incentives and requirements for GSE owner/operators at LAX to convert GSE to extremely low emissions technologies. In light of stakeholder input received on the October 2013 report, it is anticipated that the GSE policy to be developed will be more performance-based (i.e., require GSE owner/operators to achieve the emissions goal of 2.65 g/bhp-hr within certain parameters) and complimentary to the CARB fleet rules relative to giving the individual GSE owner/operators flexibility as to exactly how they will achieve that emissions level.

3. Complete more detailed planning, engineering, and design of eGSE charging systems at terminal gates and cargo aircraft parking positions, taking into account potential space limitations and logistical considerations of charging equipment at the gate/positions. As part of that assessment, determine the exact location(s) of the charging station(s) at each gate/position and identify the improvements necessary to accommodate that station(s) including, but not limited to, the possible relocation of existing utilities. This more detailed planning, engineering, and design should take into account the nature, location, and extent of existing smart chargers that already exist at LAX, to realize substantial cost savings in reducing the amount of new equipment required at LAX and to take advantage of existing eGSE operational experience that already occurs around those exiting charging stations. Since October 2013, this has partially occurred in conjunction with various terminal modernization projects such as Terminals 1, 2, and 5, and with refinements to the improvement plans for the installation of the aircraft gates along the east side of the new Bradley West terminal.

4. Further assess the use of LPG/CNG as a viable/feasible option for reducing GSE emissions, including evaluation of what fueling station additions and improvements at LAX would be required to support that technology. This next step is still under consideration.

This page intentionally left blank.

Appendix A
Electric GSE Benchmark Study Report

Memorandum

To: *Jaideep Vaswani, Los Angeles World Airports*

From: *Meredith McElmurry, Meha Patel, and Tony Skidmore; CDM Smith*

Date: *June 7, 2013*

Subject: *Electric Ground Support Equipment Benchmark Study Report*

Los Angeles World Airports (LAWA) is conducting a study to assess the operational, financial, and environmental feasibility of converting existing ground support equipment (GSE) to electric GSE (eGSE). The overall objectives of this effort are to provide LAWA with an assessment of the GSE fleet in use at Los Angeles International Airport (LAX) and the supporting electrical infrastructure, potential future GSE use scenarios and associated infrastructure needs, and recommendations for increasing the percentage of the LAX GSE fleet that is powered by alternative fuels.

As part of this effort, CDM Smith collaborated with LAWA to develop and execute a benchmarking study to compare best practices and lessons learned at selected airports which currently have or are in the process of adding eGSE equipment to their existing operations. The parameters used to select airport participants for the study were presented to and approved by LAWA, and benchmarking questionnaires created by CDM Smith were provided to each airport for completion. Questionnaires were returned to CDM Smith for compilation and analysis of the results which are outlined in this report.

Participating Airports

To ensure the relevance and applicability of the benchmark study, CDM Smith evaluated a variety of airports across the continental United States to select several for comparison to LAX. The airports were chosen based on basic characteristics similar to those of LAX such as an international airport with passenger and cargo service, similar physical size, and a temperate climate. Using these considerations, Dallas/Fort Worth International Airport (DFW), San Francisco International Airport (SFO), and Seattle-Tacoma International Airport (Sea-Tac) were selected as the three comparison airports to use for the study. Additionally, CDM Smith contacted a representative from Boston-Logan International Airport, but, as further described below, only received limited input.

Parameters

The parameters used for the benchmarking study were developed to compare LAX's operations to other applicable airports' operations. These parameters guided the structure of the questionnaire and included the following:

- Drivers behind implementation of eGSE-related programs and actions

- Programs developed to promote GSE-related use of alternative fuel, fuel efficiency, carbon emission reduction, or cleaner equipment
- Process of implementing eGSE programs and actions
- Ownership of eGSE programs and actions
- Selection of eGSE business model
- Engagement of airport and/or third party staff in eGSE programs and actions
- Successes and challenges related to eGSE implementation
- Qualitative and quantitative benefits and results of eGSE implementation
- Category/type of GSE selected for conversion to eGSE
- Methodology used to select locations for eGSE charging stations and infrastructure
- Financial considerations used to decide upon eGSE implementation
- Legal considerations used to decide upon eGSE implementation

CDM Smith distributed questionnaires to the participating airports electronically, and the airports emailed their responses back to CDM Smith for analysis.

Results

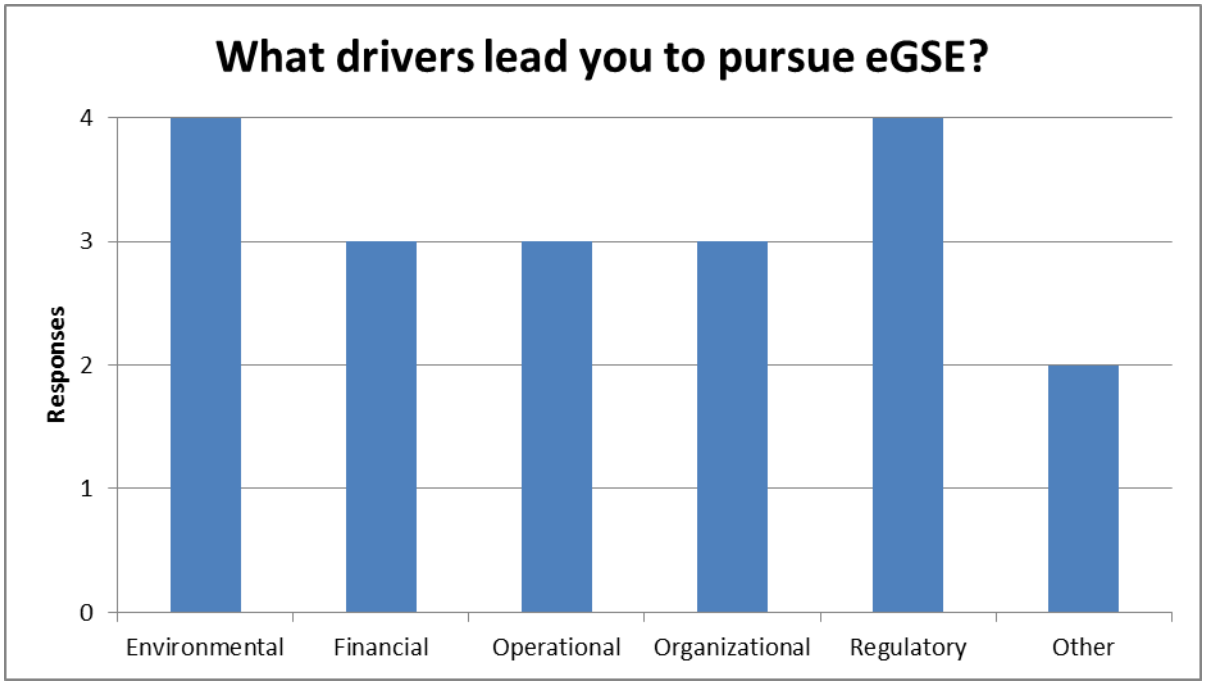
A summary of the responses to the questionnaire is provided in this section. A compilation of all survey responses is provided in *Attachment A - Compiled Responses* to eGSE Questionnaire, and copies of each of the original completed questionnaires is provided in *Attachment B - Completed eGSE Questionnaires*. The discussion below focuses primarily on DFW, Sea-Tac, and SFO as the comparison airports to LAX.

Boston Logan International Airport does not currently have a formal eGSE program in place given a lack of funding opportunities. They agreed to complete the survey despite this so their feedback is included in Attachment A.

The remaining three airports are referred to from this point forward as the “three comparison airports.”

1) Why did your airport choose eGSE?

Respondents were given the choice of six primary reasons for choosing to pursue eGSE programs and/or actions. These choices included environmental, financial, operational, organizational, regulatory, and other considerations. With the exception of the "other considerations" category, the three comparison airports cited all reasons as drivers for pursuing eGSE. LAWA cited environmental and regulatory considerations as the drivers for potential eGSE program or action implementation. The environmental and regulatory considerations referenced by all four airports were mainly focused around air quality including emissions reduction and monitoring. Additionally, the three comparison airports mentioned the significance of the role that airlines and ground service providers play in eGSE decision making. This is due to their ownership and operation of the majority of the GSE that exist at each airport.



2) What policies or programs have been developed to support eGSE initiatives?

A variety of eGSE policies and programs were created at the three comparison airports. Most of these are concentrated on air quality-related issues such as emissions reduction from vehicles and equipment used at the airports. At Sea-Tac for example, a program to fund the installation of over 500 charging points for airlines' eGSE use was established and partially financed through an ARRA Clean Cities/Department of Energy grant that the airport received. At SFO, several policies and programs were created including:

- SFO Clean Vehicle Policy in 2000 that was focused on passenger ground transportation while also encouraging clean GSE
- FAA Inherently Low Emission Vehicle Pilot Program from 2001 to 2005 that funded tenant-owned e-GSE
- FAA Voluntary Airport Low Emissions (VALE) Program from 2006 to present that funds airport-owned low-emission vehicles and equipment such as chargers for eGSE
- CARB Off-Road Diesel Regulations circa 2008 that requires a lower emissions profile averaged across a fleet

3) To whom do the eGSE policies or programs apply?

The programs at Sea-Tac apply to the airport, whereas existing programs and policies at DFW, LAX, and SFO apply to the airlines and ground service providers/vehicle owners and operators.

4) What eGSE business model does your organization use?

Respondents were provided six options for answering this question based on a combination of ownership and operation of eGSE by the airport, airlines, tenants, ground handlers, subcontracted companies, or combination thereof. All airports responded that their business models were a combination thereof.

At DFW, some equipment is owned and operated by airlines and/or tenants. There is also a small interline transfer fleet to transfer baggage between terminals. At SFO, some equipment is owned and operated by the airlines and/or tenants, while other equipment is owned by the airlines and/or tenants and operated by ground handlers or subcontractors. Still other equipment is owned and operated by ground handlers that are contracted by the airlines. At Sea-Tac, the airport owns and maintains the eGSE charging stations. The airlines and ground handlers own and operate the eGSE vehicles. None of the airports indicated that the eGSE is entirely owned and operated by the airport itself.

5) How have you involved tenants in the development and/or implementation of eGSE policies and programs?

Sea-Tac and SFO collaborated with airlines to plan eGSE-related infrastructure development and pursue funding opportunities. Majority of the eGSE activity at DFW has been led by the airport's major carriers, American and Delta.

6) What methods were most successful in eGSE deployment?

The airports cited a variety of methods as most successful. DFW indicated that it was mandatory eGSE. Sea-Tac cited the effectiveness of a demonstration project prior to the main rollout. SFO indicated that all of the methods mentioned in their response to Question 5 were helpful, but that CARB regulations and the airport's installation and management of chargers made the most financial sense.

7) What have been the greatest obstacles to eGSE deployment?

Financial and cost considerations were primary challenges to creating and implementing eGSE activities for DFW, LAX, and SFO. Specifically, concerns about the financial implications of operating and maintaining eGSE and assigning ownership for covering such costs were deterrents for these three airports as well as Boston Logan.

SFO listed the following concerns:

- Limited range which a) may require recharging during the day or b) if charging overnight may have only one charger port available for each unit, causing the unit to run out of power and stop working in the middle of a duty cycle
- Inaccessibility to chargers at some older boarding areas
- Less powerful than diesel units so most eGSE aircraft pushback tractors are not able to push wide body aircraft
- Higher initial cost and battery replacement cost

Sea-Tac noted that "more creative" solutions proposed to readily acquire and implement eGSE were too difficult to deploy and instead opted to follow a more traditional model of airport-provided infrastructure and airline-provided eGSE. DFW indicated concerns regarding leakage from eGSE equipment lead-acid batteries.

8) What benefits has your organization received from eGSE policies or programs?

DFW cited environmental and regulatory compliance benefits. SFO indicated that they have received environmental, financial, operational, organizational, regulatory, and other benefits. Sea-Tac indicated that it was too early to assess this, but they project savings of 1 million gallons of fossil fuel per year following full deployment.

9) Regarding eGSE equipment, what type of equipment was targeted and why?

CDM Smith different form of responses from the comparison airports, with one respondent providing a fuel type breakdown of their total GSE fleet but not delineating the types of GSE that are electric, another respondent providing a count of the types of GSE targeted for electrification, and the third respondent simply indicating an estimated total number of eGSE currently operating at the airport. Although the variations in response types do not allow for a direct comparison between airports, the types of responses generally suggest that light-duty equipment such as baggage tugs, belt loaders, and pushback tractors which are readily available in the market and generally used in many airports, including LAX, are considered candidates for eGSE. Provided below is a summary of the types of responses received from each airport.

DFW

Information provided by DFW is specific to American Airlines which is the airport's largest user of eGSE and provides the most accurate reflection of how much eGSE equipment is in use in total across DFW. Below is the GSE fleet summary for American Airlines as of May 2011.

Gasoline	Diesel	Electric	Propane	Total Fleet
703	228	591	31	**1,553**

LAX

Based upon the results of a GSE inventory conducted in April 2013, the GSE fleet summary is listed below in the table. Approximately 37 percent of the total GSE fleet is electric.

Gasoline	Diesel	Electric	LPG/CNG	Total Fleet
421	860	999	444	**2,724**

Sea-Tac

As depicted in the chart below, there are approximately 689 pieces of eGSE that carriers at Sea-Tac predict they will acquire (i.e., GSE that they have targeted to be eGSE in the future) as a result of Sea-Tac's current electric charging station infrastructure project. For example, Alaska Airlines in recent weeks has taken delivery of 40 baggage tugs and expects this number to grow substantially over the summer. The type of equipment selected was determined by the carriers who purchased/are purchasing it. Sea-Tac targeted used its infrastructure improvements to provide charging capability for the widest range of vehicles.

Bag Tugs	Belt Loaders	Pushback Tractors	Other	Total Fleet
334	192	71	92	**689**

SFO

While a recent inventory of eGSE equipment types and amounts has not been performed, the estimated number of eGSE equipment currently on the ground is 200. This equipment is made primarily of baggage tugs, belt loaders, and pushback tractors for smaller aircraft.

10) Regarding eGSE infrastructure and charging stations, what locations were targeted and why?
Terminal areas were the most commonly cited location. SFO referenced operational ease and cost factors as reasons for selecting locations for eGSE infrastructure and charging stations. Additionally, the comparison airports tried to select locations for charging stations to integrate with current operations and minimize disruptions whenever possible.

11) What were the primary financial considerations for determining whether to implement eGSE?
Sea-Tac and SFO cited long-term cost savings from fuel conservation and maintenance as primary factors in opting to convert to eGSE from a financial perspective. According to recent studies, Sea-Tac estimates annual fuel and maintenance savings to be just over $2 million. Based on a follow up discussion on the phone with staff from DFW, DFW also considered the amount of funding that the airport would be able and willing to contribute to eGSE investments and based their degree of involvement on that amount. All three of the comparison airports also factored in the amount of financial involvement that tenants and airlines were able to make into their final decisions to proceed with eGSE implementation.

12) What was the associated capital cost for eGSE implementation?
Sea-Tac cited a specific capital cost of approximately $18 million for infrastructure-related items, including the need for power center upgrades. DFW and SFO examined ways to reduce overall cost through grant procurement and new construction budgets. This was due to the high cost of installing new eGSE infrastructure such as electrical conduit and chargers and purchasing new equipment such as electric baggage carts.

13) What are the annual operations and maintenance costs for eGSE?
Each of the three comparison airports cited that the operations and maintenance costs are specific to the airlines, ground handlers, and vehicle owner/operators at their airports.

14) Was your airport able to procure grant funding to assist with the cost of eGSE deployment?
Each of the three comparison airports were successful in their attempts to procure grant funding for help with eGSE deployment. DFW procured an Inherently Low Emission Airport Vehicle (ILEAV) grant to fund its eGSE charging stations, and SFO also applied for and received grants in the past. Sea-Tac is a sub-recipient of a U.S. Department of Energy Clean Cities Coalition grant for approximately $3.5 million which will be applied to Phase I of the eGSE charging station project. Sea-Tac also intends to apply for FAA VALE funds for Phase II of the eGSE charging station project in 2014.

15) What were your airport's primary legal considerations regarding eGSE implementation?
Legal considerations were a factor for LAX which cited the Community Benefits Agreement (CBA) and Master Plan. They were also important to DFW which referenced a Memorandum of Agreement with the Texas Commission on Environmental Quality. Sea-Tac and SFO did not cite any noteworthy legal considerations that impacted eGSE implementation.

Conclusions

Information gleaned through this benchmarking exercise is intended to assist LAWA with its current evaluation of the benefits and risks associated with converting traditional GSE equipment to eGSE equipment. Benchmarking is a proven tool for measuring the effectiveness of internal strategies to achieve a particular goal against those of peer organizations that are or have already undertaken actions to attain a similar goal. Each of the three comparison airports selected to participate in this study have been assessing and pursuing eGSE development and implementation for years, learning business lessons along the way that are applicable to LAWA's interest in assessing eGSE further.

To ensure the comprehensiveness of this assessment, CDM Smith recommends that LAWA consider the following factors based upon results of the benchmarking study:

- Mandatory activities resulting from regulatory and compliance requirements vary according to region and tend to be of greater concern and impact in California than in most, if not all, other areas of the country. Air quality issues are of particular concern for organizations such as LAWA that are located in California and are under more rigorous standards from groups such as the California Air Resource Board (CARB). It may be worthwhile for LAWA to continue a more in-depth dialog with airports such as SFO specifically regarding the most cost and time effective ways to adhere to California-specific regulations through creative solutions like eGSE deployment.

- Given the current economic environment which includes less available funding opportunities and greater emphasis on fiscal austerity, it is critical that any financial investment associated with eGSE implementation be closely evaluated and minimized whenever possible. Each of the comparison airports included in the benchmarking study were able to pursue eGSE implementation through the procurement of grant funding and collaboration with other airport stakeholders such as tenants and ground handlers that were willing to financially invest in eGSE projects. LAWA needs to begin researching and identifying current grant opportunities and initiating dialog with other airport stakeholders to determine how much investment may be made in eGSE. This information is critical to identifying what actions may be taken regarding eGSE implementation and how to prioritize them among the various stakeholders.

- Ground handlers, carriers, and other parties that own or operate GSE are vital to a successful eGSE implementation effort. These entities need to be included in preliminary discussions about eGSE to engage them as early as possible and gain their support. Exclusion or lack of involvement of stakeholders that own and/or operate GSE equipment risks delaying and/or restricting the implementation of eGSE efforts.

cc: Dave Jensen, CDM Smith

Attachments:

Attachment A: Compiled Responses to eGSE Questionnaire
Attachment B: Completed eGSE Questionnaires

Attachment A
Compiled Responses to eGSE Questionnaire

SURVEY QUESTION		COMMENTS FROM SURVEY PARTICIPANTS				
		LAX **Jaideep Vaswani, Chief of Airport Planning I, LAWA Env Svs Division**	**DFW** **Kris Russell, Sr Environmental Analyst**	**Sea-Tac** **Russ Simonson, Sr Environmental Prog Mgr**	**SFO** **Roger Hooson, Sr Planner**	***Logan*** ***Brenda Enos, Asst Dir Cap Prog & Env Mgmt*** *Note: Only limited input received from Logan Airport because airport's eGSE program is currently on-hold pending acquisition of funding to resume and support eGSE efforts.*
1	**Why did your airport choose eGSE?**					
a)	Environmental considerations	Mitigation Measures related to air quality and electrification of existing equipment including Master Plan MM-AQ-4; Community Benefits Agreement	Ozone State Implementation Plan (SIP); MOA with Texas Commission on Environmental Quality; North Central Texas Council of Governments (NCTCOG)	Minimizing environmental impacts on our community. Assisting with our Century Agenda goal to reduce aircraft related emissions 25% over the next 25 years.	CO2 and criteria pollutant emissions from fossil fuel use	*N/A*
b)	Financial considerations	N/A	Airlines own GSE at DFW. Largest users are American (AA) and Delta (DL).	Both Airport and Airline analyses indicate there will be overall cost savings associated with operating eGSE at Sea-Tac. Air carriers will likely save both fuel and maintenance costs. Sea-Tac committed to the cost of airport-wide eGSE charging station installation in conjunction with a positive majority-in-interest vote from our carriers.	High cost of diesel and gasoline	*N/A*
c)	Operational considerations	N/A	DFW built charging stations	Sea-Tac considered and addressed the additional need of increased staff time for maintenance, O&M costs, metering of electricity, and financial charging of electricity use.	Some e-GSE (e.g. bag tugs) operate in confined underground spaces where poorly ventilated fumes from fossil fuel use are a health issue for nearby workers.	*N/A*
d)	Organizational considerations	N/A	Airline-owned equipment	Minimizing airport related air emissions. Reducing our tenant airlines' costs.	Operators want a positive community image, all things being equal.	*N/A*
e)	Regulatory considerations	MPAQ as part of Mitigation Monitoring & Reporting Program(MMRP) for Alternative D MM-AQ-1, MM-AQ-2, MM-AQ-3 and MM-AQ-4; Community Benefits Agreement; California Air Resource Board (CARB)	Non-attainment SIP, led to MOA for 90% reduction in GSE emissions. eGSE efforts began in 1999/2000 when DFW was approached by TCEQ regarding reducing emissions (primarily NOX and VOCs) since DFW is located in a non-attainment ozone SIP area. Since DFW could not impact emissions from planes, it focused on vehicle emssions. American and Delta agreed to switch to electric where possible to help with this goal.	We anticipate banking greenhouse gas emission reduction credits with our local air agency.	CARB Off-Road Diesel Regulations	*N/A*

	SURVEY QUESTION	COMMENTS FROM SURVEY PARTICIPANTS				
		LAX **Jaideep Vaswani, Chief of Airport Planning I, LAWA Env Svs Division**	**DFW** **Kris Russell, Sr Environmental Analyst**	**Sea-Tac** **Russ Simonson, Sr Environmental Prog Mgr**	**SFO** **Roger Hooson, Sr Planner**	***Logan*** ***Brenda Enos, Asst Dir Cap Prog & Env Mgmt*** *Note: Only limited input received from Logan Airport because airport's eGSE program is currently on-hold pending acquisition of funding to resume and support eGSE efforts.*
f)	Other considerations	N/A	N/A	Sea-Tac Airport and Sea-Tac Carriers have discussed the opportunity to utilize eGSE for a decade. Horizon Airlines has been using electric push-back tractors for many years. One Sea-Tac ground handler, AirServ, began purchasing electric baggage tugs 3 years ago. Over the last 2 to 3 years, Sea-Tac Airport has considered various options for facilitating a significant change to eGSE; including airport purchasing of eGSE rolling stock to be leased to the carriers for their use. However, a simpler solution was implemented by Sea-Tac to install eGSE charging stations throughout the airport. Our partner carriers, at their cost, would adopt eGSE to the maximum percentage practicable. Sea-Tac will have over 500 eGSE charging points on the ramp by the end of 2014.	Airlines and groundhandlers - not the airport itself - chose eGSE. The operators chose e-GSE, originally with encouragement and FAA funding from SFO, and more recently in response to CARB regulations and the high cost of diesel, along with SFO charger installations.	*N/A*
2	**What policies or programs have been developed to support this objective(s)?**					
		N/A	Clean Air Policy - applies to DFW's fleet; MOA - American Airlines, Delta, DFW Airport (GAV - CNG buses, alternative fuel program)	Program: to fund $18M for the installation of over 500 charging points for carrier eGSE use. Sea-Tac was a sub recipient of $3.5M of an ARRA Clean Cities/Dept. of Energy grant that is being used towards purchase of eGSE charging stations.	• SFO Clean Vehicle Policy (2000): focused on passenger ground transportation but encourages clean GSE too • FAA Inherently Low Emission Vehicle Pilot Program (2001-2005)(funded tenant-owned e-GSE) • FAA VALE Program (2006-date)(funds Airport-owned low-emission vehicles and equipment, e.g. chargers for eGSE) • CARB Off-Road Diesel Regulations (c. 2008)(requires a lower emissions profile averaged across a fleet)	*N/A*
3	**To whom do the eGSE policies or programs apply?**					
		Majority of stake holders particularly the airlines and ground service providers.	Airport and airlines	The program applies to Sea-Tac Airport. The approximate CPE impact to our carriers is $0.12.	Vehicle owners and operators	*N/A*
4	**What eGSE business model does your organization use?**					
a)	Owned and operated by airport					*N/A*
b)	Owned and operated by airlines/tenants	X	X		X	*N/A*
c)	Owned by airport, airlines, and/or tenants but operated by ground handlers or other subcontracted entity	X			X - Owned by airlines, and/or tenants but operated by ground handlers or other subcontracted entity	*N/A*
d)	Subcontracted by small airline to a larger one				X	*N/A*

	SURVEY QUESTION	COMMENTS FROM SURVEY PARTICIPANTS				
		LAX **Jaideep Vaswani, Chief of Airport Planning I, LAWA Env Svs Division**	**DFW** **Kris Russell, Sr Environmental Analyst**	**Sea-Tac** **Russ Simonson, Sr Environmental Prog Mgr**	**SFO** **Roger Hooson, Sr Planner**	***Logan*** ***Brenda Enos, Asst Dir Cap Prog & Env Mgmt*** *Note: Only limited input received from Logan Airport because airport's eGSE program is currently on-hold pending acquisition of funding to resume and support eGSE efforts.*
e)	Airline usage of Maintenance and Ground Support Agreement with a variety of other airlines					*N/A*
f)	Other - please describe		X - Small interline transfer fleet for baggage transfer to other terminals	X - Airport owned and maintained eGSE charging stations. Carrier owned and operated eGSE rolling stock. Independent ground handler owned and operated eGSE rolling stock.	X - Owned and operated by ground handlers under contract to airlines	*N/A*
5	**How have you involved tenants in the development and/or implementation of eGSE policies and programs?**					
		By 1) conducting a comprehensive e-GSE feasibility study and facilitating a GSE inventory survey to identify infrastructure and equipment needs and 2) via lease and operating agreements and mutual cooperation.	Majority of the eGSE activity at DFW has been led by the major carriers, American and Delta.	Sea-Tac Airport has worked with its carrier airlines in planning deployment and location of eGSE charging stations.	In prior years SFO held grant funding and technical equipment workshops for airfield operators, and on one occasion we applied for FAA grant funding on their behalf. We also put manufacturers in touch with operators. In recent years, when terminal boarding areas are reconstructed, SFO installs electric GSE chargers, billing operators for the electricity. Operators are responsible for acquiring vehicles.	*We did initiate discussions with one airline in order to submit a VALE Application to the FAA.*
6	**What methods were most successful in eGSE deployment?**					
			Based on our experience and observations, having a mandatory eGSE policy in place and enforcing it appears to be the most effective method of ensuring eGSE deployment	A Sea-Tac success was the decision to install 40 eGSE charge points as a demonstration project with a local regional carrier who has had eGSE experience. The demonstration project allowed the airport and one of its larger carriers to identify issues, concerns, and technical difficulties prior to a massive rollout of infrastructure.	All of the methods cited in the answer to Question 5 were successful, however in current times the combination of CARB regulations and Airport installation and management of chargers fits best within the confines of grant funding and potential revenue from electricity sales.	N/A
7	**What have been the greatest obstacles to eGSE deployment?**					
		Availability of funds and technology.	• Cost to airlines/subcontractor fleets. • DFW also has a concern with drippings from eGSE lead-acid batteries.	Significant time was spent in determining the right business approach for facilitating the acquisition of eGSE at Sea-Tac. In the end, a traditional method of airport provided infrastructure and carrier provided eGSE was our solution. More creative solutions to quickly acquire and deploy eGSE were too difficult to implement.	• Limited range (may need to recharge during the day, or have one charger port for each unit if charging overnight; the unit may run out of power and stop working in the middle of a duty cycle) • Chargers aren't always accessible at older boarding areas • Less powerful than diesel units, so most eGSE aircraft pushback tractors can't push widebody aircraft • Higher initial cost and battery replacement cost	*Funding of infrastructure upgrades.*
8	**What benefits has your organization received from these policies or programs? Please select all that apply and provide any specific comments:**					

	SURVEY QUESTION	COMMENTS FROM SURVEY PARTICIPANTS				
		LAX **Jaideep Vaswani, Chief of Airport Planning I, LAWA Env Svs Division**	**DFW** **Kris Russell, Sr Environmental Analyst**	**Sea-Tac** **Russ Simonson, Sr Environmental Prog Mgr**	**SFO** **Roger Hooson, Sr Planner**	***Logan*** ***Brenda Enos, Asst Dir Cap Prog & Env Mgmt*** *Note: Only limited input received from Logan Airport because airport's eGSE program is currently on-hold pending acquisition of funding to resume and support eGSE efforts.*
a)	Environmental considerations	Air quality and compliance with the CBA and other regulatory mandates.	SIP emissions reductions	Minimal benefits have been realized at this early stage of our program. It is our hope to have approximately 70 percent of Sea-Tac based GSE be electric in the next several years.	See response to Question 1	*N/A*
b)	Financial consideration	N/A	N/A	N/A	See response to Question 1	*N/A*
c)	Operational considerations	N/A	N/A	N/A	See response to Question 1	*N/A*
d)	Organizational considerations	N/A	N/A	When eGSE is implemented to the extent practicable, we hope our tenant airlines will save nearly 1 million gallons of fossil fuel each year.	See response to Question 1	*N/A*
e)	Regulatory considerations	N/A	MOA success/contribution to SIP	N/A	See response to Question 1	*N/A*
f)	Other considerations	N/A		N/A	See response to Question 1	*N/A*
9	**Regarding eGSE equipment, what type of equipment was targeted and why? Please include the approximate number and category/type of GSE. If fuel type and equipment age are accessible, please include those as well.**					
		Preliminary draft results of the GSE survey as of April 8, 2013: see attached chart.	See detailed airline data that was provided	Early estimates have included: Bag Tugs: 334 Belt Loaders: 192 Pushback Tractors: 71 Other: 92 Most of the equipment eGSE will replace is gasoline equipment, many pushback tractors operate with diesel.	• Baggage tugs • Belt loaders • Pushback tractors for smaller aircraft Need to contact the vehicle owners and operators for more specifics. There may be 200 or more eGSE vehicles at SFO, but a census hasn't been done recently.	*Tugs, belt loaders-10 of each.*
10	**Regarding eGSE infrastructure and charging stations, what locations were targeted and why?**					
		Locations Targeted: Terminals, Cargo and Maintenance facilities, and Remote Gates Reasons: To assess the capacity and distribution of power and to evaluate current and potential aircraft loads at each facility location identified above, to determine electrical demands for full electrification, assess the capacity of existing equipment and available power from the utility provider to meet this demand, to develop concept plans for electrical site distribution and ground power equipment installations.	Terminal aprons were targeted locations. Tried to integrate eGSE-related efforts with current operations and to minimize disruptions whenever possible.	Charging station locations are placed near the gates that the equipment operates at. With carrier input, Sea-Tac designed layout plans that maximize charging capabilities and minimizes clutter.	Terminal boarding areas when rebuilt, because state-of-the art electric conduit extensions and related infrastructure can be installed cost-effectively, according to a master plan. Tried to integrate eGSE-related efforts with current operations and to minimize disruptions whenever possible.	*Gate areas. 10 double charging stations.*
11	**What were your primary financial considerations for determining whether to implement eGSE?**					

	SURVEY QUESTION	COMMENTS FROM SURVEY PARTICIPANTS				
		LAX **Jaideep Vaswani, Chief of Airport Planning I, LAWA Env Svs Division**	**DFW** **Kris Russell, Sr Environmental Analyst**	**Sea-Tac** **Russ Simonson, Sr Environmental Prog Mgr**	**SFO** **Roger Hooson, Sr Planner**	***Logan*** ***Brenda Enos, Asst Dir Cap Prog & Env Mgmt*** *Note: Only limited input received from Logan Airport because airport's eGSE program is currently on-hold pending acquisition of funding to resume and support eGSE efforts.*
		Grant; PFCs	DFW airport financed charging stations at terminals.	We approached our tenant airlines and determined that the CPE impact of the project would more than compensate for their fuel and maintenance savings. See responses to Questions 1b and 13 for additional input.	We understand the airlines and other operators save substantially on operating costs using electricity over diesel or gasoline. There may also be minor savings in the areas of worker health, avoidance of fuel spills, etc.	*Whether we would obtain infrastructure money from FAA.*
12	**What was the associated capital cost for eGSE implementation?**					
		Unknown	ILEAV grant (pre-VALE grant) procured to fund eGSE charging stations because airport owned property but not equipment. When the international terminal was built, the airport placed stations near the building to accommodate the airlines which preferred to have consolidated charging stations. When the terminal opened in 2005/2006, DFW bought 12 electric baggage carts to transfer bags between terimals.	Infrastructure estimates are approximately $18M, including the need for power center upgrades.	Need to consult the vehicle operators for this information. Installing new electrical conduit and chargers can be costly, but when terminals are rebuilt it can be absorbed quite easily in the overall cost.	*N/A*
13	**What are the annual operations and maintenance costs for eGSE?**					
		Unknown	Airline data	These are carrier and ground handler specific costs. However, airport wide, we have estimated fuel and maintenance savings to be a little over $2M.	Need to consult the vehicle operators.	*N/A*
14	**Were you able to procure grant funding to assist with the cost of eGSE deployment?**					
		No	ILEAV (Kris can confirm date)	Yes. Sea-Tac is a sub-recipient of a US Department of Energy Clean Cities Coalition grant for approximately $3.5M which will be applied to Phase I of the eGSE charging station project. We will also apply for FAA VALE funds for Phase II of the eGSE infrastructure project in 2014.	In years past, yes. Now that CARB regulations are in force, the operators generally have to absorb the cost unless they go beyond what the regulations require.	*No*
15	**15) What were the primary legal considerations regarding eGSE implementation?**					
		CBA; Master Plan	MOA legal agreement (signed by CEO, TCEQ Executive Director)	None identified.	Not aware of any significant legal issues.	*N/A*

Attachment B
Completed eGSE Questionnaires

To: *Jaideep Vaswani, Los Angeles World Airports*

From: *Meredith McElmurry, CDM Smith*

Date: *April 12, 2013*

Subject: *Electronic Ground Support Equipment Benchmark Study*

Los Angeles World Airports (LAWA) is currently conducting a study regarding the operational, financial, and environmental feasibility of converting existing ground support equipment (GSE) to electric GSE (eGSE). This study will compare best practices and lessons learned at airports which currently have or are in the process of adding eGSE equipment to their existing operations.

You are invited to participate in this benchmarking study by responding to the following questions. Please feel free to provide any additional information that you believe will be helpful. CDM Smith is assisting LAWA with the collection and analysis of this information. In return for your time and participation, you will receive a copy of the final benchmarking report and analysis.

Please direct responses, comments or questions to Meredith McElmurry at 949.930.9886, mcelmurryma@cdmsmith.com.

1) Why did your airport choose eGSE? Please select all that apply and provide any specific comments:

    a. Environmental considerations such as Mitigation measures related to air quality and electrification of existing equipment including Master Plan MM-AQ-4. The Community Benefits Agreement (CBA) is another consideration.

    b. Financial considerations such as
    _____

    c. Operational considerations such as _
    _____

    d. Organizational considerations such as
    e. Regulatory considerations such as MPAQ as part of Mitigation Monitoring and Reporting Program (MMRP) for Alternative D MM-AQ-1, MM-AQ-2, MM-AQ-3 and MM-AQ-4, Community Benefits Agreement, California Air Resource Board (CARB).

f. Other considerations such as _____
_____

2) What policies or programs have been developed to support this objective(s)? Please describe.

None to date/not applicable.

3) To whom do the eGSE policies or programs apply?

Majority of stakeholders in particularly the airlines and the ground service providers.

4) What eGSE business model does your organization use (select all that apply): B, C
   a. Owned and operated by airport
   b. Owned and operated by airlines/tenants
   c. Owned by airport, airlines, and/or tenants but operated by ground handlers or other subcontracted entity
   d. Subcontracted by small airline to a larger one
   e. Airline usage of Maintenance and Ground Support Agreement with a variety of other airlines
   f. Other – please describe: _____
   _____

5) How have you involved tenants in the development and/or implementation of eGSE policies and programs?

By conducting and a comprehensive e-GSE feasibility study and via lease and operating agreements and mutual cooperation.

6) What methods were most successful in eGSE deployment?

7) What have been the greatest obstacles to eGSE deployment?

Availability of funds and technology.

8) What benefits has your organization received from these policies or programs? Please select all that apply and provide any specific comments:

a. Environmental such as _____Air Quality and compliance with the CBA and other regulatory mandates_____
_____

b. Financial such as _____
_____

c. Operational such as _____
_____

d. Organizational such as _____
_____

e. Regulatory such as _____
_____

f. Other such as _____
_____

9) Regarding eGSE equipment, what type of equipment was targeted and why? Please include the approximate number and category/type of GSE. If fuel type and equipment age are accessible, please include those as well.

Please refer to the results of the survey that CDM has.

10) Regarding eGSE infrastructure and charging stations, what locations were targeted and why?

Locations targeted: Terminals, cargo, maintenance facilities, and remote gates

Reasons: To assess the capacity and distribution of power and to evaluate current and potential aircraft loads at each facility location identified above, to determine electrical demands for full electrification, assess the capacity of existing equipment and available power from the utility provider to meet this demand, to develop concept plans for electrical site distribution and ground power equipment installations.

11) What were your primary financial considerations for determining whether to implement eGSE?

Grants and PFCs

12) What was the associated capital cost for eGSE implementation?

    Unknown

13) What are the annual operations and maintenance costs for eGSE?

    Unknown

14) Were you able to procure grant funding to assist with the cost of eGSE deployment?

    Nope

15) What were the primary legal considerations regarding eGSE implementation?

    CBA and Master Plan

We greatly appreciate your time to answer these questions and look forward to receiving your feedback. Please provide your responses to Meredith by **April 17, 2013**.

CDM Smith

To: *Kris Russell, Dallas/Ft. Worth International Airport*

From: *Meredith McElmurry, CDM Smith*

Date: *April 5, 2013*

Subject: *Electronic Ground Support Equipment Benchmark Study*

Los Angeles World Airports (LAWA) is currently conducting a study regarding the operational, financial, and environmental feasibility of converting existing ground support equipment (GSE) to electric GSE (eGSE). This study will compare best practices and lessons learned at airports which currently have or are in the process of adding eGSE equipment to their existing operations.

You are invited to participate in this benchmarking study by responding to the following questions. Please feel free to provide any additional information that you believe will be helpful. CDM Smith is assisting LAWA with the collection and analysis of this information. In return for your time and participation, you will receive a copy of the final benchmarking report and analysis.

Please direct responses, comments or questions to Meredith McElmurry at 949.930.9886, mcelmurryma@cdmsmith.com.

1) Why did your airport choose eGSE? Please select all that apply and provide any specific comments:

   a. Environmental considerations such as Ozone SIP, MOA (Memorandum of Agreement) with TCEQ, NCTCOG

   b. Financial considerations such as Airlines own GSE at DFW

   c. Operational considerations such as DFW built charging stations

   d. Organizational considerations such as Airline-owned equipment

   e. Regulatory considerations such as Non-attainment SIP → led to MOA for 90% reduction in GSE emissions

f. Other considerations such as _____

_____

2) What policies or programs have been developed to support this objective(s)? Please describe.

Clean Air Policy - applies to DFW Airport Board fleet

MOA = AA, Delta, DFW (GAV = CNG Busses / Alt Fuel Program)

3) To whom do the eGSE policies or programs apply?

Airport – No eGSE policy

4) What eGSE business model does your organization use (select all that apply):

a. Owned and operated by airport
b. Owned and operated by airlines/tenants
c. Owned by airport, airlines, and/or tenants but operated by ground handlers or other subcontracted entity
d. Subcontracted by small airline to a larger one
e. Airline usage of Maintenance and Ground Support Agreement with a variety of other airlines
f. Other – please describe: Small Interline transfer fleet for baggage transfer to other Terminals

5) How have you involved tenants in the development and/or implementation of eGSE policies and programs?

No current program/policy for eGSE

6) What methods were most successful in eGSE deployment?

Mandatory eGSE

7) What have been the greatest obstacles to eGSE deployment?

Cost to Airlines / Subcontractor fleets

8) What benefits has your organization received from these policies or programs? Please select all that apply and provide any specific comments:

a. Environmental such as SIP Emissions Reductions

b. Financial such as _____

c. Operational such as _____

d. Organizational such as _____

e. Regulatory such as MOA success / contribution to SIP

f. Other such as Issue = "Flooded" lead-acid leaks, staining

9) Regarding eGSE equipment, what type of equipment was targeted and why? Please include the approximate number and category/type of GSE. If fuel type and equipment age are accessible, please include those as well.

I have detailed airline data which can be provided

10) Regarding eGSE infrastructure and charging stations, what locations were targeted and why?

Terminal Aprons

11) What were your primary financial considerations for determining whether to implement eGSE?

DFW Airport financed Charging Stations at terminals

12) What was the associated capital cost for eGSE implementation?

ILEAV/VALE Funded charging stations

13) What are the annual operations and maintenance costs for eGSE?

Airline data

14) Were you able to procure grant funding to assist with the cost of eGSE deployment?

ILEAV (I can confirm date)

15) What were the primary legal considerations regarding eGSE implementation?

MOA legal agreement (signed by CEO, TCEQ Executive Director)

We greatly appreciate your time to answer these questions and look forward to receiving your feedback. Please provide your responses to Meredith by **April 17, 2013**.

To: *Roger Hooson, San Francisco International Airport*

From: *Meredith McElmurry, CDM Smith*

Date: *April 12, 2013*

Subject: *Electronic Ground Support Equipment Benchmark Study*

Los Angeles World Airports (LAWA) is currently conducting a study regarding the operational, financial, and environmental feasibility of converting existing ground support equipment (GSE) to electric GSE (eGSE). This study will compare best practices and lessons learned at airports which currently have or are in the process of adding eGSE equipment to their existing operations.

You are invited to participate in this benchmarking study by responding to the following questions. Please feel free to provide any additional information that you believe will be helpful. CDM Smith is assisting LAWA with the collection and analysis of this information. In return for your time and participation, you will receive a copy of the final benchmarking report and analysis.

Please direct responses, comments or questions to Meredith McElmurry at 949.930.9886, mcelmurryma@cdmsmith.com.

1) Why did airlines and ground handlers choose eGSE? Please select all that apply and provide any specific comments: (The operators chose e-GSE, originally with encouragement and FAA funding from SFO, and more recently in response to CARB regulations and the high cost of diesel, along with SFO charger installations).

    a. Environmental considerations such as _CO_2 and criteria pollutant emissions from fossil fuel use

    b. Financial considerations such as __High cost of diesel and gasoline

    c. Operational considerations such as __Some e-GSE (e.g. bag tugs) operate in confined underground spaces where poorly ventilated fumes from fossil fuel use are a health issue for nearby workers.

    d. Organizational considerations such as __Operators want a positive community image, all things being equal.

    e. Regulatory considerations such as __CARB Off-Road Diesel Regulations

f. Other considerations such as _____
_____

2) What policies or programs have been developed to support this objective(s)? Please describe.

- SFO Clean Vehicle Policy (2000): focused on passenger ground transportation but encourages clean GSE too
- FAA Inherently Low Emission Vehicle Pilot Program (2001-2005)(funded tenant-owned e-GSE)
- FAA VALE Program (2006-date)(funds Airport-owned low-emission vehicles and equipment, e.g. chargers for eGSE)
- CARB Off-Road Diesel Regulations (c. 2008)(requires a lower emissions profile averaged across a fleet)

3) To whom do the eGSE policies or programs apply?

Vehicle owners and operators

4) What eGSE business model does your organization use (select all that apply):

a. Owned and operated by airport
b. Owned and operated by airlines/tenants
c. Owned by airport, airlines, and/or tenants but operated by ground handlers or other subcontracted entity
d. Subcontracted by small airline to a larger one
e. Airline usage of Maintenance and Ground Support Agreement with a variety of other airlines
f. Other – please describe: __Owned and operated by ground handlers under contract to airlines

5) How have you involved tenants in the development and/or implementation of eGSE policies and programs?

In prior years SFO held grant funding and technical equipment workshops for airfield operators, and on one occasion we applied for FAA grant funding on their behalf. We also put manufacturers in touch with operators. In recent years, when terminal boarding areas are reconstructed, SFO installs electric GSE chargers, billing operators for the electricity. Operators are responsible for acquiring vehicles.

6) What methods were most successful in eGSE deployment?

All of the above methods were successful, however in current times the combination of CARB regulations and Airport installation and management of chargers fits best within the confines of grant funding and potential revenue from electricity sales.

7) What have been the greatest obstacles to eGSE deployment?

- Limited range (may need to recharge during the day, or have one charger port for each unit if charging overnight; the unit may run out of power and stop working in the middle of a duty cycle)
- Chargers aren't always accessible at older boarding areas
- Less powerful than diesel units, so most eGSE aircraft pushback tractors can't push wide body aircraft
- Higher initial cost and battery replacement cost

8) What benefits has your organization received from these policies or programs? Please select all that apply and provide any specific comments: (See #1)

a. Environmental such as _____
_____

b. Financial such as _____
_____

c. Operational such as _____
_____

d. Organizational such as _____
_____

e. Regulatory such as _____
_____

f. Other such as _____
_____

g. Regarding eGSE equipment, what type of equipment was targeted and why? Please include the approximate number and category/type of GSE. If fuel type and equipment age are accessible, please include those as well.

- Baggage tugs
- Belt loaders
- Pushback tractors for smaller aircraft

You'll need to contact the vehicle owners and operators for more specifics. There may be 200 or more eGSE vehicles at SFO, but a census hasn't been done recently.

h. Regarding eGSE infrastructure and charging stations, what locations were targeted and why?

Terminal boarding areas when rebuilt, because state-of-the art electric conduit extensions and related infrastructure can be installed cost-effectively, according to a master plan.

i. What were your primary financial considerations for determining whether to implement eGSE?

We understand the airlines and other operators save substantially on operating costs using electricity over diesel or gasoline. There may also be minor savings in the areas of worker health, avoidance of fuel spills, etc.

j. What was the associated capital cost for eGSE implementation?

Consult the vehicle operators for this information. Installing new electrical conduit and chargers can be costly, but when terminals are rebuilt it can be absorbed quite easily in the overall cost.

k. What are the annual operations and maintenance costs for eGSE?

Consult the vehicle operators.

l. Were you able to procure grant funding to assist with the cost of eGSE deployment?

In years past, yes. Now that CARB regulations are in force, the operators generally have to absorb the cost unless they go beyond what the regulations require.

m. What were the primary legal considerations regarding eGSE implementation?

I'm not aware of any significant legal issues.

We greatly appreciate your time to answer these questions and look forward to receiving your feedback. Please provide your responses to Meredith by **April 17, 2013**.

To: *Russ Simonson, Port of Seattle*

From: *Meredith McElmurry, CDM Smith*

Date: *April 5, 2013*

Subject: *Electronic Ground Support Equipment Benchmark Study*

Los Angeles World Airports (LAWA) is currently conducting a study regarding the operational, financial, and environmental feasibility of converting existing ground support equipment (GSE) to electric GSE (eGSE). This study will compare best practices and lessons learned at airports which currently have or are in the process of adding eGSE equipment to their existing operations.

You are invited to participate in this benchmarking study by responding to the following questions. Please feel free to provide any additional information that you believe will be helpful. CDM Smith is assisting LAWA with the collection and analysis of this information. In return for your time and participation, you will receive a copy of the final benchmarking report and analysis.

Please direct responses, comments or questions to Meredith McElmurry at 949.930.9886, mcelmurryma@cdmsmith.com.

Prelude: Sea-Tac Airport and Sea-Tac Carriers have discussed the opportunity to utilize eGSE for a decade. Horizon Airlines has been using electric push-back tractors for many years. One Sea-Tac ground handler, AirServ, began purchasing electric baggage tugs 3 years ago. Over the last 2 to 3 years, Sea-Tac Airport has considered various options for facilitating a significant change to eGSE; including airport purchasing of eGSE rolling stock to be leased to the carriers for their use. However, a simpler solution was implemented by Sea-Tac to install eGSE charging stations throughout the airport. Our partner carriers, at their cost, would adopt eGSE to the maximum percentage practicable. Sea-Tac will have over 500 eGSE charging points on the ramp by the end of 2014.

1) Why did your airport choose eGSE? Please select all that apply and provide any specific comments:

    a. Environmental considerations such as ____Minimizing environmental impacts on our community. Assisting with our Century Agenda goal to reduce aircraft related emissions 25% over the next 25 years.

b. Financial considerations such as __ Both Airport and Airline analyses indicate there will be overall cost savings associated with operating eGSE at Sea-Tac. Air carriers will likely save both fuel and maintenance costs. Sea-Tac committed to the cost of airport-wide eGSE charging station installation in conjunction with a positive majority-in-interest vote from our carriers.

c. Operational considerations such as _____ Sea-Tac considered and addressed the additional need of increased staff time for maintenance, O&M costs, metering of electricity, and financial charging of electricity use.

d. Organizational considerations such as ___ Minimizing airport related air emissions. Reducing our tenant airlines' costs.

e. Regulatory considerations such as __ We anticipate banking greenhouse gas emission reduction credits with our local air agency.

f. Other considerations such as _____
_____

2) What policies or programs have been developed to support this objective(s)? Please describe.

Program: to fund $18M for the installation of over 500 charging points for carrier eGSE use. Sea-Tac was a sub recipient of $3.5M of an ARRA Clean Cities/Dept. of Energy grant that is being used towards purchase of eGSE charging stations.

3) To whom do the eGSE policies or programs apply?

The program applies to Sea-Tac Airport. The approximate CPE impact to our carriers is $0.12.

4) What eGSE business model does your organization use (select all that apply):

a. Owned and operated by airport
b. Owned and operated by airlines/tenants
c. Owned by airport, airlines, and/or tenants but operated by ground handlers or other subcontracted entity
d. Subcontracted by small airline to a larger one
e. Airline usage of Maintenance and Ground Support Agreement with a variety of other airlines

f. Other – please describe: ___ Airport owned and maintained eGSE charging stations. Carrier owned and operated eGSE rolling stock. Independent ground handler owned and operated eGSE rolling stock.

5) How have you involved tenants in the development and/or implementation of eGSE policies and programs?

Sea-Tac Airport has worked with its carrier airlines in planning deployment and location of eGSE charging stations.

6) What methods were most successful in eGSE deployment?

A Sea-Tac success was the decision to install a 40 eGSE charge points as a demonstration project with a local regional carrier who has had eGSE experience. The demonstration project allowed the airport and one of its larger carriers to identify issues, concerns, and technical difficulties prior to a massive rollout of infrastructure.

7) What have been the greatest obstacles to eGSE deployment?

Significant time was spent in determining the right business approach for facilitating the acquisition of eGSE at Sea-Tac. In the end, a traditional method of airport provided infrastructure and carrier provided eGSE was our solution. More creative solutions to quickly acquire and deploy eGSE were too difficult to implement.

8) What benefits has your organization received from these policies or programs? Please select all that apply and provide any specific comments:

a. Environmental such as _____ Minimal benefits have been realized at this early stage of our program. It is our hope to have approximately 70 percent of Sea-Tac based GSE be electric in the next several years.

b. Financial such as _____
_____

c. Operational such as _____
_____

d. Organizational such as _____ When eGSE is implemented to the extent practicable, we hope our tenant airlines will save nearly 1 million gallons of fossil fuel each year.

e. Regulatory such as _____
_____

f. Other such as _____
_____

9) Regarding eGSE equipment, what type of equipment was targeted and why? Please include the approximate number and category/type of GSE. If fuel type and equipment age are accessible, please include those as well.

Early estimates have included:

Bag Tugs:	334
Belt Loaders:	192
Pushback Tractors:	71
Other:	92

Most of the equipment eGSE will replace is gasoline equipment, many pushback tractors operate with diesel.

10) Regarding eGSE infrastructure and charging stations, what locations were targeted and why?

Charging station locations are placed near the gates that the equipment operates at. With carrier input, Sea-Tac designed layout plans that maximize charging capabilities and minimizes clutter.

11) What were your primary financial considerations for determining whether to implement eGSE?

We approached our tenant airlines and determined that the CPE impact of the project would more than compensated their fuel and maintenance savings.

12) What was the associated capital cost for eGSE implementation?

Infrastructure estimates are approximately $18M, including need power center upgrades.

13) What are the annual operations and maintenance costs for eGSE?

These are carrier and ground handler specific costs. However, airport wide, we have estimated fuel and maintenance savings to be a little over $2M.

14) Were you able to procure grant funding to assist with the cost of eGSE deployment?

Yes. Sea-Tac is a sub-recipient of a US Department of Energy Clean Cities Coalition grant for approximately $3.5M which will be applied to Phase I of the eGSE charging station project. We will also apply for FAA VALE funds for Phase II of the eGSE infrastructure project in 2014.

15) What were the primary legal considerations regarding eGSE implementation?

None identified.

We greatly appreciate your time to answer these questions and look forward to receiving your feedback. Please provide your responses to Meredith by **April 17, 2013**.

To: *Brenda Enos, Massachusetts Port Authority (Massport)*

From: *Meredith McElmurry, CDM Smith*

Date: *April 5, 2013*

Subject: *Electronic Ground Support Equipment Benchmark Study*

Los Angeles World Airports (LAWA) is currently conducting a study regarding the operational, financial, and environmental feasibility of converting existing ground support equipment (GSE) to electric GSE (eGSE). This study will compare best practices and lessons learned at airports which currently have or are in the process of adding eGSE equipment to their existing operations.

You are invited to participate in this benchmarking study by responding to the following questions. Please feel free to provide any additional information that you believe will be helpful. CDM Smith is assisting LAWA with the collection and analysis of this information. In return for your time and participation, you will receive a copy of the final benchmarking report and analysis.

Please direct responses, comments or questions to Meredith McElmurry at 949.930.9886, mcelmurryma@cdmsmith.com.

1) Why did your airport choose eGSE? Please select all that apply and provide any specific comments:

    a. Environmental considerations such as _____
    _____

    b. Financial considerations such as _____
    _____

    c. Operational considerations such as _____
    _____

    d. Organizational considerations such as _____
    _____

    e. Regulatory considerations such as _____
    _____

f. Other considerations such as ____Not applicable. We do not have any eGSE.

2) What policies or programs have been developed to support this objective(s)? Please describe.

Not applicable.

3) To whom do the eGSE policies or programs apply?

Not applicable.

4) What eGSE business model does your organization use (select all that apply):

a. Owned and operated by airport
b. Owned and operated by airlines/tenants
c. Owned by airport, airlines, and/or tenants but operated by ground handlers or other subcontracted entity
d. Subcontracted by small airline to a larger one
e. Airline usage of Maintenance and Ground Support Agreement with a variety of other airlines
f. Other – please describe: _____Not applicable_____
_____

5) How have you involved tenants in the development and/or implementation of eGSE policies and programs?

We did initiate discussions with one airline in order to submit a VALE Application to the FAA.

6) What methods were most successful in eGSE deployment?

Not applicable.

7) What have been the greatest obstacles to eGSE deployment?

Funding of infrastructure upgrades.

8) What benefits has your organization received from these policies or programs? Please select all that apply and provide any specific comments:

a. Environmental such as _____
_____

b. Financial such as _____
_____

c. Operational such as _____
_____

d. Organizational such as _____
_____

e. Regulatory such as _____
_____

f. Other such as ___Not applicable_____
_____

9) Regarding eGSE equipment, what type of equipment was targeted and why? Please include the approximate number and category/type of GSE. If fuel type and equipment age are accessible, please include those as well.

Tugs, belt loaders-10 of each

10) Regarding eGSE infrastructure and charging stations, what locations were targeted and why?
Gate areas. 10 double charging stations.

11) What were your primary financial considerations for determining whether to implement eGSE?

Whether we would obtain infrastructure money from FAA.

12) What was the associated capital cost for eGSE implementation?

Not applicable.

13) What are the annual operations and maintenance costs for eGSE?

Not applicable

14) Were you able to procure grant funding to assist with the cost of eGSE deployment?

No.

15) What were the primary legal considerations regarding eGSE implementation?

Not applicable.

We greatly appreciate your time to answer these questions and look forward to receiving your feedback. Please provide your responses to Meredith by **April 17, 2013**.

Appendix B
LAX GSE Inventory

Appendix B-1
2006 LAX GSE Inventory

Draft LAX GSE Inventory Report

May 2007

Prepared for:

Los Angeles World Airports
One World Way
Los Angeles, California 90045

Prepared by:

CDM
18581 Teller Ave., Suite 200
Irvine, CA 92612

Table of Contents

Attachments

List of Tables

This page intentionally left blank.

1. INTRODUCTION

This document presents the results of an inventory of Ground Service Equipment (GSE) operating at Los Angeles International Airport (LAX) in October 2006. The *LAX GSE Inventory* was completed pursuant to the requirements of the LAX Master Plan *Mitigation Monitoring and Reporting Program* (MMRP),[1] which is based on the *LAX Master Plan Final EIS/EIR,*[2] the LAX Master Plan Program *Community Benefits Agreement (CBA),*[3] and the LAX Master Plan *Stipulated Settlement.*[4] These requirements relate to LAWA's commitment towards a complete conversion of GSE at LAX to extremely low emission technology by 2015, as reflected in the *Final EIS/EIR* and in the *Final General Conformity Determination*[5] for the LAX Master Plan.

This document provides a description of the inventory methodology, a summary of inventory results, and a detailed listing of the individual GSE included in the inventory.

2. METHODOLOGY

2.1 Background

LAWA initiated the development of the LAX GSE Inventory in April of 2005 and on June 14, 2005, initially notified potential GSE owners/operators to provide, by July 1, 2005, specific information and data (e.g., type and number of vehicles or equipment, fuel type, etc.). (See Attachment A.) The list and contact information of GSE owner/operators surveyed was developed from a compendium of sources including LAWA, internet searches, and in-the-field observations.

Of the 32 GSE owners/operators at LAX that were notified in June 2005, only nine responded, including four airlines and five other GSE service providers.

In light of this limited response, combined with inquiries LAWA received from airlines regarding the GSE survey effort, it was determined that the request should be re-submitted with specific modifications and other clarification made to the survey methodology and the request form. These changes were accomplished through the formation of a LAX GSE Inventory Task Force, as described below.

2.2 GSE Inventory Task Force

In January 2006, a LAX GSE Inventory Task Force was formed for the purposes of improving the survey methodology and data request form and achieve a more complete response from the GSE owners/operators. The Task Force members included representatives from the following entities:

- LAWA
  - Airfield Operations Division
  - Long-Range Planning Division
  - Mitigation Compliance Division
  - Environmental Consultants to LAWA
- Airlines
  - Air Transport Association
  - United Airlines

---

1 LAX Master Plan MPAQ Mitigation Measure MM-AQ-4, (*Operational-Related Mitigation Measures*), Measure 2 - *Prepare Detailed Inventory of all GSE at LAX*.

2 Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Final Environmental Impact Report (December 2004) and Final Environmental Impact Statement (May 2005).

3 Cooperation Agreement - Los Angeles International Airport Master Plan Program (February 2005).

4 Stipulated Settlement (December 2005).

5 LAX Master Plan Final EIS - Final Clean Air Act General Conformity Determination (January 2005).

Over a three-month period, the Task Force met four times to evaluate and formulate the GSE survey purpose, structure, and approach. The following summarizes the key outcomes of these efforts:

- **Use of Inventory Data:** Important clarifications regarding the intended use of the inventory data were made to the survey request form to focus on the information considered most useful and reasonably obtainable.[6] Further clarification regarding the intended use of inventory data was also evaluated by the Task Force relative to detailed GSE information being considered by airlines as confidential/proprietary business-related information.
- **Basis for Inventory Time Period:** The number and types of GSE at LAX is constantly in a state of flux due to ongoing changes in airline business practices, variations in airport operational levels, changes in aircraft fleet mix characteristics of individual airlines, and other such considerations. Therefore, it was resolved that the common basis for the GSE Inventory would be January 2006. It was further resolved that due to the absence of historical data, the retrospective development of a 1997 GSE inventory called for the CBA was impossible to achieve.
- **Coordination with LAWA Department of Operations Regarding Registration of Ground Equipment at LAX:** LAWA is developing a program whereby all GSE and other ground equipment operating at LAX must be registered with LAWA and have a current registration tag affixed/displayed. It was agreed that information from GSE owners/operators requested as part of the registration program could include GSE-related information, which would be of use in developing and maintaining a GSE inventory at LAX. Additionally, the tagging of equipment as part of that program could be very useful in conducting a physical survey and inventory confirmation of GSE at LAX, particularly in terms of being able to distinguish on the airfield those pieces of equipment that have been inventoried and included in the GSE database for LAX from those pieces of equipment that have not. It was further agreed that, inasmuch as the California Air Resources Board (CARB) has, or will, set forth a registration and tagging program for identifying non-road equipment that meets certain CARB requirements for emissions control, the respective LAWA and CARB registration and tagging programs should be coordinated to the extent practical.
- **Synonym List:** One key area of discussion within the Task Force was the need to develop for standardized list of GSE types with a "synonym list" to account for the fact that certain types of GSE can be referred to by several different names. The development of such a list was considered to be particularly beneficial relative to concerns expressed by GSE owner/operators in the June 2005 GSE survey on how to categorize certain pieces of equipment. The Task Force developed a list of 25 categories of GSE, which included the common name of each equipment type, a description of the typical use and function of the equipment type, and a photograph of the equipment. The list also included general instructions and guidance as to how to categorize equipment for the purposes of the LAX GSE Inventory. A copy of the list is provided herewith as Attachment B.

2.3 Development of Survey Form/Spreadsheet

The survey form and instructions were developed with consistency and simplicity in mind. Because it was important to obtain the same kind of information from the individual respondents, a unified set of data was requested by way of using a custom Microsoft Excel spreadsheet developed by the Task Force. The spreadsheet included a number of "built-in" features to make data entry easy for the respondent and to help to secure valid entries. For example, when entering the type of GSE into the spreadsheet, a drop-down list of 25 categories of GSE appears, at which the spreadsheet user would simply click on the

[6] For example, data regarding the average load for each piece of GSE, as requested in the June 2005 survey, may be helpful in future calculations of air pollutant emissions from GSE operations at LAX; however, the level of effort associated with the survey participants providing complete and accurate information on the average load for each piece of equipment could be substantial. This could detract from the willingness and/or ability of GSE owners/operators to provide complete and accurate information and may discourage participation in the survey. As an alternative to asking survey participants to provide such information, the Task Force agree that use of default factors developed as part of the Southern California GSE Memorandum of Understanding would be sufficient for use in future air quality calculations; therefore, the need for such information was deleted in the revised survey form.

relevant category. Such drop-down lists were included for several types of data entry. The spreadsheet also included instructions and useful tips for data entry, which the spreadsheet user could access by simply clicking on a column heading.

The spreadsheet included three worksheets for data entry, including one for contact information, one for GSE information, and one for small equipment information (explained below), as well as an attached worksheet that provided the description of GSE categories noted above (i.e., Attachment B. A copy of the three data entry worksheets is provided herewith as Attachment C).

While the focus of the GSE Inventory is on equipment with internal combustion engines (ICE) of 25 horsepower or greater, or comparable electric/alternative-powered equipment, the task force felt that it could be beneficial and timely to also request information regarding small equipment, such as portable generators, pumps/compressors, landscaping equipment, and the like, of less than 25 horsepower. The nature of information requested in the spreadsheet for small equipment was much less extensive than for GSE, with the intent being to simply compile basic statistics on the nature and number of small equipment at LAX rather than any detailed information such as manufacturer, year, horsepower, etc. If, based on the survey results, it was found that a substantial amount of small equipment is used at LAX, consideration would be given to seeking additional information regarding such equipment in any subsequent surveys.

2.4 Updating of Distribution List

As discussed above, the initial GSE owner/operator contact list was developed from a compendium of information provided by LAWA combined with in-the-field observations and other means. This listing was continually updated based upon feedback from the respondents, un-opened or undeliverable surveys, ongoing communications between LAWA and GSE owner/operators, and input from Air Transport Association (ATA). The updated distribution list includes the parties identified below in Table 1.

2.5 Distribution of Survey

On May 12, 2006, each party identified on the distribution list was sent an electronic copy of the Microsoft Excel spreadsheet, described above, along with a cover letter from LAWA. The cover letter explained the background of the GSE inventory, described the data and information needs, specified the due dates for the survey information, and provided contact information. The cover letter also noted that two informal workshops would be held at LAX to answer any questions regarding the survey and offer assistance in completing the spreadsheet if desired. A copy of the cover letter is provided herewith as Attachment D.

2.6 Survey Response

Over the three months that followed distribution of the survey, responses were received from the majority of the parties that were sent a survey request. This includes airlines that are members of the ATA, which provided their survey information to ATA and ATA consolidated all the information into a single submittal by ATA to LAWA. By March 2007, all but five parties had either provided GSE information directly to LAWA or to LAWA through the ATA, or responded back to LAWA indicating that they do not operate GSE at LAX. Table 1 lists the parties that were sent a survey request and the status of each party's response. Although responses were not received from five of the parties on the survey distribution list, it was felt that the size and nature of operations associated with those businesses would not have a substantial influence on the overall GSE makeup at LAX.

Table 1

May 2006 Survey - Distribution List and Response Status

GSE Owner/Operator	Response to Survey Request
Aero California	Indicated that company does not operate any GSE at LAX.
Aero Mexico	Completed survey submitted to LAWA.
Air Canada	Completed survey submitted to LAWA.
Air New Zealand	Completed survey submitted to LAWA.
Air Trans Airways	Indicated that company has no GSE, but rather is provided through Midwest Express Airlines (Information provided by ATA-see below).
ATA Airlines	Completed survey submitted to LAWA.
Airborne Express	Now part of DHL. Completed survey received from DHL
Aircraft Services International Group	Limited information provided in survey submitted to LAWA (i.e., primarily just the number and type of GSE).
Airport Terminal Services	Indicated that company no longer operates GSE at LAX.
Alaska Airlines	ATA member - GSE information provided to LAWA though ATA.
American Airlines	ATA member - GSE information provided to LAWA though ATA.
America West/US Airways	ATA member - GSE information provided to LAWA though ATA.
Continental Airlines	ATA member - GSE information provided to LAWA though ATA.
Delta Airlines	ATA member - GSE information provided to LAWA though ATA.
DHL Express	Completed survey submitted to LAWA.
Evergreen Aviation	Completed survey submitted to LAWA.
Federal Express	ATA member - GSE information provided to LAWA though ATA.
Globe Ground/SERVISAIR	Completed survey submitted to LAWA.
Hallmark Aviation	Indicated that company does not operate any GSE at LAX.
Hawaiian Airlines	Indicated that company does not operate any GSE at LAX.
Hilltop Aviation	Initial verbal response indicated that company only has 3-4 passenger vehicles at LAX; however, follow-up requests by LAWA for clarification/confirmation of that response were not answered.
IBC Aviation	No response received. Company may no longer be in business and/or operating at LAX. Phone number was disconnected.
Japan Airlines	Completed survey submitted to LAWA.
Korean Air	Completed survey submitted to LAWA.
LSG Skychefs	No response received. Voice-mail and e-mail messages unanswered.
Menzies Aviation	Completed survey submitted to LAWA.
Mercury Air Center	No information received. Although company contact person indicated that he would follow-up internally to get information to LAWA, no information ever received.
Midwest Express Airlines	ATA member - GSE information provided to LAWA though ATA.
Northwest Airlines	ATA member - GSE information provided to LAWA though ATA.
Sky West	ATA member - GSE information provided to LAWA though ATA.
Southwest Airlines	ATA member - GSE information provided to LAWA though ATA.
Swiss International Airlines	Completed survey submitted to LAWA.
Swissport	Completed survey submitted to LAWA.
United Airlines	ATA member - GSE information provided to LAWA though ATA.
United Parcel Service (UPS)	ATA member - GSE information provided to LAWA though ATA.
U.S. Coast Guard	Completed survey submitted to LAWA.
U.S. Postal Services	Completed survey submitted to LAWA.

3. SURVEY RESULTS

The survey results provide generally complete data relative to the overall nature, number, and fuel type of GSE operating at LAX; however, some notable data gaps exist relative to fueling method, power (brake horsepower), and GSE usage (i.e., hour meter/odometer information). Table 2 delineates the number of responses received for each of the key data fields included in the survey form.

Table 2

Number of Responses Received for Each Data Field

Data Field	Number of Responses	Percent of Total[1]
GSE Category	3,040	99.7
Manufacturer	2,892	94.9
Model Year	2,792	91.6
Fuel Type	3,026	99.3
Fueling Method	2,470	81.1
Power (BHP)	2,206	72.4
Hour Meter/Odometer Information		
Installed	2,243	73.6
Hours/Miles	1,640	53.8
Date Read	1,557	51.1
On-Road Equivalent	2,707	88.8

[1] Based on a total of 3,047 records entered into database.

As indicated above, the 2006 GSE Inventory survey results provide a good indication of the overall nature, number, and fuel type of GSE operating at LAX. Table 3 summarizes those results. The complete consolidated database of GSE information received from all of the survey responses is provided herewith as Attachment E.

No notable information was obtained from the survey relative to small equipment (i.e., equipment less than 25 horsepower), other than the identification of eight pieces of equipment, four of which were electric powered, two of which had small gasoline engines, and two of which were portable light stands with small diesel engines.

Table 3

Summary of Nature, Number, and Fuel Type of GSE at LAX

	Equipment Type		Fuel Type									
			Diesel		Gasoline		Electric		LPG/CNG		Not Specified	
GSE Category	Count	% of Total	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category
Air Conditioner	9	0.3%	8	88.9%		0.0%	1	11.1%		0.0%		0.0%
Air Start	32	1.1%	32	100.0%		0.0%		0.0%		0.0%		0.0%
Aircraft Tractor	176	5.8%	157	89.2%	3	1.7%	14	8.0%	2	1.1%		0.0%
Baggage Tractor	600	19.7%	55	9.2%	79	13.2%	293	48.8%	173	28.8%		0.0%
Belt Loaders	280	9.2%	42	15.0%	94	33.6%	103	36.8%	34	12.1%	7	2.5%
Bobtails	32	1.1%	4	12.5%	26	81.3%		0.0%	2	6.3%		0.0%
Cargo Loader	164	5.4%	156	95.1%	8	4.9%		0.0%		0.0%		0.0%
Cargo Tractor	229	7.5%	21	9.2%	109	47.6%	4	1.7%	95	41.5%		0.0%
Cart	162	5.3%	6	3.7%	2	1.2%	152	93.8%	2	1.2%		0.0%
Catering Truck	62	2.0%	41	66.1%	17	27.4%		0.0%	4	6.5%		0.0%
Deicer	1	0.0%		0.0%	1	100.0%		0.0%		0.0%		0.0%
Fork Lift	251	8.2%	24	9.6%	15	6.0%	54	21.5%	153	61.0%	5	2.0%
Fuel Truck	36	1.2%	28	77.8%	6	16.7%		0.0%	2	5.6%		0.0%
Generator	17	0.6%	11	64.7%	6	35.3%		0.0%		0.0%		0.0%
Ground Power Unit	125	4.1%	96	76.8%	16	12.8%	12	9.6%	1	0.8%		0.0%
Hydrant Truck	26	0.9%	15	57.7%	11	42.3%		0.0%		0.0%		0.0%
Lavatory Truck	45	1.5%	9	20.0%	35	77.8%		0.0%		0.0%	1	2.2%
Lift	138	4.5%	32	23.2%	46	33.3%	38	27.5%	22	15.9%		0.0%
Other	102	3.3%	52	51.0%	34	33.3%	15	14.7%	1	1.0%		0.0%
Other ORE	303	9.9%	9	3.0%	272	89.8%	7	2.3%	15	5.0%		0.0%
Passenger Stand	51	1.7%	4	7.8%	27	52.9%	19	37.3%	1	2.0%		0.0%
Service Truck	180	5.9%	30	16.7%	140	77.8%	8	4.4%	2	1.1%		0.0%
Sweeper	10	0.3%	1	10.0%	4	40.0%	2	20.0%	1	10.0%	2	20.0%
Water Truck	9	0.3%	1	11.1%	7	77.8%		0.0%		0.0%	1	11.1%
Not Specified	7	0.2%		0.0%	1	14.3%		0.0%		0.0%	6	85.7%
Total Number And % Of Total	**3,047**	**100.0%**	**834**	**27.4%**	**959**	**31.5%**	**722**	**23.7%**	**510**	**16.7%**	**22**	**0.7%**

4. NEXT STEPS

The survey results of the 2006 GSE Inventory provide a very good overview of the existing GSE characteristics at LAX. While the nature, number, and fuel type of GSE at LAX is well documented by the survey results, additional information is needed regarding size (i.e., horsepower) and usage (i.e., hour-meter/odometer readings over time). As indicated above, LAWA is in the process of establishing a registration/tagging program for all ground equipment at LAX and will be coordinating that effort with CARB's non-road equipment reporting and labeling program requirements, including those associated with the currently proposed regulation of in-use off-road diesel vehicles. The state's reporting requirements include most of the types of information reflected in the LAX GSE survey, such as manufacturer, model year, horsepower, and requires that such information be provided to the state on an annual basis. These state requirements are well suited for inclusion in LAWA's ground equipment registration information requirements; however, LAWA will also require usage information for each piece of equipment.

This page intentionally left blank.

Attachment A

2005 LAX GSE Inventory Survey - Request Letter

MEMORANDUM

Date: June 14, 2005

To: LAX GSE Owners and Operators

From: Patricia Tubert, Deputy Executive Director for Quality and Compliance

Subject: Ground Support Equipment (GSE) Inventory at LAX

Introduction

As a condition of the recently approved LAX Master Plan, Los Angeles World Airports (LAWA) is required to conduct an inventory of ground support equipment (GSE) at the airport. The aim of this study is to obtain a comprehensive and up-to-date accounting of tenant-owned (or operated) GSE. The results will be used in support of the ongoing GSE-conversion program under the South Coast GSE Memorandum of Understanding (MOU), the Master Plan environmental mitigation commitments and various information needs of the LAWA Department of Operations and the LAX Ground Handlers Task Force - including the future license and tagging program for GSE.

On behalf of the entire LAWA staff, I wish to thank-you in advance for your participation in this important undertaking.

Data & Information Needs

For the purposes of this inventory, GSE are defined to include motorized vehicles and equipment that are either "street legal" or designated as "off-road" but are intended for use on the "airside" of the airport. The following is a listing of the types of GSE subject to this inventory:

---------- GSE Types ----------

- Air conditioners
- Air starts
- Baggage tractors
- Belt loaders
- Cargo loaders
- Cargo tractors
- Container / pallet loaders
- Deicers
- Employee work vehicles (cars, trucks and vans)
- Fork lifts
- Galley and other cabin service trucks
- Ground power units
- Lavatory and portable water vehicles
- Passenger / employee transfer vehicles (vans and buses)
- Passenger stands
- Push-back and tow tractors
- Refuelers and hydrant trucks
- Others (as appropriate)

Information and data that will be collected in connection with this inventory will include the following:

---------- GSE Data & Information ----------

- Owner/operator contact information
- Vehicle/equipment type
- Total number of each type
- Fuel type
- Engine horse power
- Average load factor
- Manufacturer
- Model year
- Infrastructure requirements
- Fueling method and location
- Annual usage (hours or miles)

Approach & Schedule

The data and information collection components of the GSE inventory will be conducted in two stages, as described below:

- Stage 1 – Paper Survey: GSE owners/operators provide paper and/or electronic inventory vehicles and equipment to LAWA. June 14 - July 1, 2005

- Stage 2 – Physical Survey: LAWA conducts in-the-field survey of GSE to augment and cross-check paper survey. July 11 - August 11, 2005

Contact Information

Questions and comments regarding this inventory should be directed to either of the following:

Dennis Quilliam
LAWA Master Plan Division
310.646.7614
dquilliam@lawa.org

Alan Murphy
LAWA Office of Quality & Compliance
310.977.0270
amurphy@lawa.org

Data/Information Submittal

The data and information should be submitted to the following on (or before) July 1, 2005. Electronic format (excel) is preferable.

Alan Murphy
1 World Way
Room 224
Los Angeles, CA 90045
310 646 9974
amurphy@lawa.org

End of memorandum

Attachment B

2006 LAX GSE Inventory Survey - Synonym List

“Ground Support Equipment,” “Ground Service Equipment,” or “GSE” means any vehicle or portable equipment if:

- The unit is powered by an electric motor, internal combustion engine (ICE), or alternative-power source;
- The equipment is used to support airfield operations, and can generally be classified using the categories defined below.
- For conventional gasoline, CNG/LPG, and diesel units, only units twenty-five (25) horsepower or greater (ICE equivalent) are included in the GSE inventory (electric and alternative-powered units included in one of the categories below are still considered GSE); *and*
- The GSE is operated on the airfield, aircraft or GSE maintenance areas, or aircraft or GSE storage areas, and *not* exclusively for airline passenger transport (*i.e.*, ground access vehicles are *not* considered GSE).

The following table lists, for each GSE type, a brief description, reference model, picture, and/or distinction from other similar categories. The reference models and descriptions are provided as a guide, and are not intended to be exhaustive or restrictive. GSE units that fall within a category based on design, engine selection, and duty cycle should be categorized as such (i.e., rather than as “Other”) wherever possible.

#	GSE Category	Description	Reference Model/ Picture
1	Air Conditioner	PORTABLE; either on skids, carts, or on the back of truck beds, that provide conditioned air to aircraft	 ACE 802: www.fsm-vienna.at

#	GSE Category	Description	Reference Model/ Picture
			 ACE 804: www.fsm-vienna.at
2	Air Start	PORTABLE; that provide high air flow to start aircraft jet engines; can be IC engines or turbine engines (must be specified in survey if turbine); bottle-starts (compressed air) are not included in survey	 ACE 300/400: www.fsm-vienna.at
3	Aircraft Tractor	Includes wide-body, narrow-body, push-back, and long-haul or maintenance tractors used to move aircraft (aka paymover); conventional and towbarless; (mounted GPU engines should be reported as a separate unit under “Ground Power Unit”)	 S&S/TUG GT-35: www.ssss.com
			 S&S/TUG MC: www.ssss.com
			 Douglas TBL-180: www.douglas-tugmaster.co.uk

#	GSE Category	Description	Reference Model/ Picture
			 Douglas TBL-400: www.douglas-tugmaster.co.uk
			 S&S/TUG GT-50G: www.ssss.com
			 S&S/TUG T-750: www.ssss.com
4	Baggage Tractor	Hitched to a series of carts to transport luggage between the aircraft and the terminal; distinguished from cargo tractor by drawbar (3,000 lbs. vs. 5,000 lbs. for cargo tractor), tow capacity (30,000 lbs. vs. 50,000 lbs.) and duty cycle (intermittent vs. 6-12 hrs. non-stop) (see also “Cargo Tractor” description)	 S&S/TUG MA-50: www.ssss.com

#	GSE Category	Description	Reference Model/ Picture
5	Belt Loader	Used to load baggage into aircraft	 S&S TUG 660: www.ssss.com
6	Bobtail	ORE	 Eagle Bobtail F350: www.eagleindustrialtruck.com
7	(Cabin Service Truck)	ORE; classify as "Catering Truck" (same duty cycle, emissions)	 Hi-Way/TUG 660 chassis: www.tescohilift.com
			 Hi-Way F650 chassis: www.tescohilift.com

#	GSE Category	Description	Reference Model/ Picture
8	Cargo Loader	Loads cargo in aircraft via a platform that is loaded then launched up to the deck level	 FMC Commander 15: www.fsm-vienna.at
			 FMC Commander 30: www.airport-technology.com
9	Cargo Tractor	Hauls heavy cargo loads in carts; distinguished from baggage tractors by drawbar (4,000-12,000 lbs. vs. 3,000-3,500 lbs. for baggage tractors), tow capacity (50,000-60,000 lbs. vs. 30,000 lbs.) and duty cycle (6-12 hrs. non-stop vs. intermittent); also, cargo tractors frequently use a side hitch (see also description of "Baggage Tractor")	 S&S/TUG MT: www.ssss.com
10	Cart	Include only self-propelled carts (e.g., personnel carts, some lavatory carts and hydrant carts) in the inventory; do *not* include baggage carts, cargo carts, hydrant carts, etc., that are towed.	 Taylor Dunn: www.taylor-dunn.com

#	GSE Category	Description	Reference Model/ Picture
11	Catering Truck	ORE; include cabin service trucks of all types in this category	 Hi-Way/TUG 660 chassis: www.tescohilift.com
			 Hi-Way F650 chassis: www.tescohilift.com
12	Deicer	Used to spray deicing fluid on aircraft; list both engines in the inventory	 FMC LMD, Dual engines: www.airport-technology.com
			 FMC Tempest II, single engine: www.fsm-vienna.at

#	GSE Category	Description	Reference Model/ Picture
13	Fork Lift	All fork lifts are included in this category, including aircraft engine fork lifts	 Toyota 5,000 lb: www.loadstarmhe.com
14	Fuel Truck	ORE	 F750, DART: www.dukestransportation.com
			 DART 10,000 gal: www.dukestransportation.com
15	Generator	PORTABLE; includes welders, light stands, etc.; only include portable generators in the inventory; stationary emergency backup generators, shop generators, and handheld generators smaller than the threshold cutoff should not be listed	 MD-3: www.victorygse.com

#	GSE Category	Description	Reference Model/ Picture
16	Ground Power Unit	PORTABLE; provides electrical power to aircraft located in remote areas, when the APU is not operational, or when the gate does not supply power	 TLD GPU-4000: www.tld-gse.com
			 TLD ACE: www.tld-gse.com
			 TLD GPU-4090: www.tld-gse.com
17	Hydrant Truck	ORE; do not include non-motorized hydrant carts	Ford F250/F350 chassis

#	GSE Category	Description	Reference Model/ Picture
18	Lavatory Truck	ORE; you all know what this one is	 TLD ACE-1410: www.tld-gse.com
			 Wollard TLS-770/F350 chassis: www.gseservices-llc.com
19	Lift		 ML15-20: www.tescohilift.com
20	Passenger Stand	ORE; indicate in the survey if the unit is ORE or not	 Wollard CMPS170/228: www.nmc-wollard.com

#	GSE Category	Description	Reference Model/ Picture
21	Service Truck	ORE; this category is broad, but does *not* include passenger cars, vans, or buses (those units should be classified as “Other ORE”)	 Ford F250/F350: www.contentedits.com
22	Sweeper	Street and shop sweepers	 Tennant: www.tennantco.com
23	Water Truck	ORE	 Wollard TWS-402, F250/F350 chassis: www.nmc-wollard.com
24	Other	Anything that absolutely does not fit into a category listed above; do *not* include ORE in this category (see “Other ORE”)	Only categorize it as “Other” if it does not fit into another category.
25	Other ORE	ORE; any ORE that absolutely does not fit into a category listed above (e.g., cars, buses, vans)	Only categorize it as “Other” if it does not fit into another category. Examples include: Ford E350 vans, passenger cars, Blue Bird buses, etc.

Attachment C

2006 LAX GSE Inventory Survey - Data Entry Worksheets

Owner/Operator:	Airline 1
Contact:	Operator
Address:	LAX
	Mailstop
	Los Angeles, CA ZIP
Phone:	(310) 555-1212
E-mail:	mymail@lax.com

Survey current as of:	1/1/2006

Notes or Comments:	

Operator Equipment ID	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-road Equivalent	Notes and Comments
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed (Y/N)	Hours/Miles	Date Read		
EXAMPLE 1	**Bobtail**	**Ford**	**1971**	**diesel**	**On-Airport Stationary**	**140**	**Yes - Works**	**86,124.3**	**01/07/2006**	**Yes - Other**	
EXAMPLE 2	**Cargo Loader**	**TUG**	**1986**	**diesel**	**On-Airport Mobile Fueler**	**210**	**Yes - Doesn't Work**			**No**	

LAX
Los Angeles World Airports

Equipment Group	Fuel Type	Number of Units	Notes and Comments
generators/lights/welders	gasoline	17	EXAMPLE 1
utility carts	LPG	11	EXAMPLE 2

Attachment D

2006 LAX GSE Inventory Survey - Request Letter

Ground Service Equipment (GSE) Owners and Operators at LAX

Re: LAX GSE Inventory – Follow-up

Dear Sir or Madam:

The purpose of this letter is to request your continued cooperation, input and support for the ongoing GSE Inventory at LAX. On June 14, 2005, Los Angeles World Airports (LAWA) sent you the initial request for information in connection with this important initiative. As a follow-up to that initial effort, additional information is needed to refine and more fully develop the GSE data in order to satisfy existing requirements and agreements applicable to all GSE operations at LAX. **As described in greater detail below, certain information being requested herein must be submitted to LAWA by June 15, 2006 and other information should be submitted by July 1, 2006.** On behalf of LAWA, I thank you in advance for your cooperation and timely response to this request.

Our goal is to obtain as complete an inventory of GSE as possible. To this end, after we have an opportunity to review the results of the paper inventory, we expect to have an on-site survey of your GSE to verify the inventory and gain a better understanding of operational factors in the field. The on-site survey is anticipated to be conducted in the summertime.

Background Information

Under existing local, state, and federal requirements applicable to LAX, as well as agreements made with nearby communities and stakeholders, LAWA is to conduct an inventory of GSE at the airport as part of a comprehensive air quality mitigation program. These include the Mitigation, Monitoring & Reporting Program for the LAX Master Plan and the Community Benefits Agreement. The aim of the inventory is to obtain a comprehensive and up-to-date accounting of tenant-owned or operated GSE. In addition to being used for the air quality mitigation program, the results will help meet the various information needs of the LAX Airport Operations Division and the LAX Ground Handlers Task Force, including the future GSE Registration and Tagging Program at LAX. Based on the results of the GSE survey request distributed by LAWA last year, the need for a follow-up survey was identified. LAWA has redesigned the survey, based in

part on input from the Air Transport Association and selected airline representatives to facilitate timely completion and to request only those data readily available to the respondents and critical to the LAWA inventory effort. Airlines, ATA, and LAWA continue to discuss confidentiality issues and how they may be resolved to ensure LAWA receives the information it needs while potentially sensitive business information is protected as appropriate.

Data & Information Needs

The data and information being requested in the follow-up survey are divided into two general categories: (1) GSE - 25 Horsepower and Greater; and, (2) Small Equipment - Less than 25 Horsepower.

GSE - 25 Horsepower and Greater: For the purposes of this inventory, GSE are defined to include motorized vehicles and equipment, with engines of 25 hp or greater, that are either designated as "off-road" or "street legal" and are intended for use on the "airside" of airport operations. Also included in this category are all electric-powered GSE of any horsepower rating. Enclosed is a listing of various categories of GSE typically associated with airside operations. This listing provides a guide for you to use in reporting the GSE that you own or operate at LAX.

The information requested for each piece of GSE with an engine of 25 hp or greater (along with all electric-powered GSE) basically includes:

- Respondent contact information
- GSE category
- Fuel type
- Engine horse power
- Manufacturer
- Model year
- Equipment Identification Number
- Fueling method
- Odometer/Hour Meter Reading

LAWA has developed an electronic spreadsheet, in Microsoft Excel, that must be used to submit the requested information. An electronic copy of the spreadsheet is provided on the enclosed CD. The spreadsheet has been customized to facilitate your entry of the information, including the ability to use "drop-down" menus for entering certain information. ***If you have any difficulty accessing, downloading or opening the file, please notify immediately either of the contact people below.***

Please note that if you already submitted such information in response to last year's request, we would appreciate an update and resubmittal of the information using the new spreadsheet.

Small Equipment - Less than 25 Horsepower: In addition to the detailed inventory of individual pieces of GSE described above, LAWA is also including in the inventory, at a more general level, equipment with internal combustion engines of less than 25 horsepower (excluding the electric-powered GSE addressed in the other section of the survey). Such equipment includes portable generators, power-washers, landscaping equipment, small compressors, etc. that you own or operate at LAX. For inventory purposes, only an estimate of the total number of pieces of equipment by equipment type, fuel type, and average annual

usage needs to be indicated. It is not necessary to provide detailed information such as manufacturer, model year, identification number, etc. such as in the case of the GSE of 25 hp or greater. Also, it is not necessary to include equipment used by outside contractors that you retain (i.e., landscape maintenance service, steam-cleaning services, etc.) as part of your survey response. Those contractors will be surveyed separately.

Contact Information

Questions and comments regarding this inventory can be directed to either of the following:

Dennis Quilliam
LAWA, Long Range Planning Division
(310) 646-7614, Ext. 1017
dquilliam@lawa.org

or

Mike Kenney
KB Environmental Sciences Inc.
(727) 578-5152
mkenney@KBEnv.com

LAWA will be offering two informal workshops to discuss the types of GSE information being requested, describe how entries to the electronic spreadsheet should be made, and answer any questions related thereto. The informal workshops will occur on:

Wednesday, May 24, 2006
2:00 - 3:00 p.m. (Pacific)
LAX Airport Operations Conference Room (3rd Floor)
7333 World Way West
(LAX Badge Office Building)

and

Thursday – June1, 2006
10:00 – 11:00 a.m. (Pacific)
LAX Airport Operations Conference Room (3rd Floor)
7333 World Way West
(LAX Badge Office Building)

Data/Information Submittal
The data and information should be submitted, in electronic form by e-mail, to:

Dennis Quilliam
dquilliam@lawa.org

The deadline for submittal of information for GSE with engines 25 horsepower (hp) or greater is Thursday, June 15, 2006, and for small equipment with engines less than 25 hp the deadline is Friday, July 1, 2006. If you do not own or operate GSE at LAX, please indicate so in your reply back to LAWA prior to June 15, 2006.

Again, thank you in advance for your participation in this effort.

Sincerely,

Patricia V. Tubert

Patricia Tubert
Deputy Executive Director

PT:JR:TS:cl

Enclosure

Attachment E

2006 LAX GSE Inventory Survey - Consolidated Results

LAX GSE Inventory

as of

29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
334145	Air Conditioner	AIRAPLANE	1997	DIESEL	On-Airport Stationary	260	Yes - Works	1,070.0	05/15/06	No
346458	Air Conditioner	DEUTZ	1995	DIESEL	On-Airport Stationary	194	Yes - Works	672.0	02/02/02	No
S/N: 9581	Air Conditioner	Ellis and Watts.	1982	electric	On-Airport Stationary	12	No			No
282317	Air Conditioner	STEWART & STEVENSON	1995	DIESEL	On-Airport Stationary	277	Yes - Works	1,835.0	05/15/06	No
348110	Air Conditioner	TRILECTRON	1998	DIESEL	On-Airport Mobile Fueler					No
502124	Air Conditioner	TRILECTRON	1998	DIESEL	On-Airport Mobile Fueler					No
534443	Air Conditioner	TRILECTRON	1998	DIESEL	On-Airport Mobile Fueler					No
271334	Air Conditioner	TRILECTRON	2000	DIESEL	On-Airport Mobile Fueler	97	Yes - Works	3,202.0	05/15/06	No
353171	Air Conditioner	TRILECTRON	2000	DIESEL	On-Airport Mobile Fueler	97	Yes - Works	3,909.0	05/15/06	No
460726	Air Start - ICE	DETROIT	2000	DIESEL	On-Airport Stationary		Yes - Works	343.0	02/09/02	No
281596	Air Start - ICE	DEUTZ	1997	DIESEL	On-Airport Stationary		Yes - Works	519.0	02/05/02	No
330036	Air Start - ICE	DEUTZ	2005	DIESEL	On-Airport Stationary	470	Yes - Works			No
334768	Air Start - ICE	S & S TUG	1997	DIESEL	On-Airport Mobile Fueler	400	Yes - Works	346.0	06/02/06	No
553504	Air Start - ICE	S AND S	1999	DIESEL		330				No
366275	Air Start - ICE	S AND S	2000	DIESEL		330				No
553847	Air Start - ICE	S AND S	2000	DIESEL		330				No
AS 6690	Air Start - ICE	S&S	1999	diesel	On-Airport Mobile Fueler	710	Yes - Works	549.0	05/22/2006	No
305361	Air Start - ICE	S&S TUG	1997	DIESEL		352				No
221326	Air Start - ICE	STANG		DIESEL	On-Airport Mobile Fueler					No
516537	Air Start - ICE	STEWART & STEVENSON	1977	DIESEL	On-Airport Stationary	364	Yes - Works	63.0	05/15/06	No
240597	Air Start - ICE	STEWART & STEVENSON	1977	DIESEL	On-Airport Stationary	364	Yes - Works	5,314.0	05/15/06	No
307965	Air Start - ICE	STEWART & STEVENSON	1985	DIESEL	On-Airport Stationary	430	Yes - Works	108.0	05/15/06	No
233597	Air Start - ICE	TRILECTRON	1998	DIESEL	On-Airport Mobile Fueler	357	Yes - Works			No
435190	Air Start - ICE	TRILECTRON	2000	DIESEL	On-Airport Mobile Fueler	357	Yes - Works			No
486724	Air Start - ICE	TRLCT	1997	DIESEL	On-Airport Mobile Fueler	450	Yes - Works			No
535227	Air Start - ICE	TRLCT	1997	DIESEL	On-Airport Mobile Fueler	450	Yes - Works			No
542885	Air Start - ICE	TRLCT	1997	DIESEL	On-Airport Mobile Fueler	450	Yes - Works			No
436534	Air Start - ICE	TRLCT	1999	DIESEL	On-Airport Mobile Fueler	585	Yes - Works			No
8733	Air Start - ICE			Diesel	On-Airport Mobile Fueler		Yes - Works	791.0	11/01/2006	No
8725	Air Start - ICE			Diesel	On-Airport Mobile Fueler		Yes - Works	1,345.0	11/01/2006	No
217840	Air Start - Turbine	AIRESEARCH	1961	DIESEL		352				No
365988	Air Start - Turbine	AIRESEARCH	1962	DIESEL		352				No
564375	Air Start - Turbine	AIRESEARCH	1976	DIESEL		352				No
378546	Air Start - Turbine	MAK	1996	DIESEL	On-Airport Stationary	396	Yes - Works	217.0	05/15/06	No
12129	Air Start - Turbine	S&S	1997	diesel	On-Airport Mobile Fueler		Yes - Works			
12135	Air Start - Turbine	S&S	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
284095	Air Start - Turbine	SS TUG	1999	DIESEL	On-Airport Mobile Fueler	585	Yes - Works	343.0	05/15/06	No
358617	Air Start - Turbine	SS TUG	2000	DIESEL	On-Airport Mobile Fueler	500	Yes - Works	67.0	05/15/06	No
271341	Air Start - Turbine	SS TUG	2000	DIESEL	On-Airport Mobile Fueler	500	Yes - Works	77.0	05/15/06	No
ASU553	Air Start - Turbine	Stewart Stevenson	1996	Diesel	On-Airport Mobile Fueler	425	Yes - Works	3,245.6		No
AS1	Air Start Unit	S&S TMSS-280	1990	Diesel	On-Airport Mobile Fueler					No
465255	Aircraft Tractor	CATERPILLA	1990	DIESEL	On-Airport Stationary	300	Yes - Works	1,973.0	02/16/06	No
341376	Aircraft Tractor	CUMMINS	1965	DIESEL	On-Airport Stationary		Yes - Works	5,268.0	06/08/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
250404	Aircraft Tractor	CUMMINS	1981	DIESEL	On-Airport Stationary		Yes - Works	3,099.0	05/12/06	No
481677	Aircraft Tractor	CUMMINS	1998	DIESEL	On-Airport Stationary	165	Yes - Works	1,644.0	01/22/02	No
326116	Aircraft Tractor	CUMMINS	1998	DIESEL	On-Airport Stationary	165	Yes - Works	4,199.0	04/11/06	No
313929	Aircraft Tractor	CUMMINS	1999	DIESEL	On-Airport Stationary	123	Yes - Works	3,491.0	06/01/06	No
26-546	Aircraft Tractor	CUMMINS	2004	diesel	On-Airport Stationary	300	Yes - Works	1,049.0	05/19/2006	
515949	Aircraft Tractor	DETROIT	1964	DIESEL	On-Airport Stationary		Yes - Works	2,455.0	04/25/06	No
512771	Aircraft Tractor	DETROIT	1966	DIESEL	On-Airport Stationary		Yes - Works	3,381.0	06/05/06	No
314657	Aircraft Tractor	DETROIT	1977	DIESEL	On-Airport Stationary		Yes - Works	8,749.0	12/02/01	No
447720	Aircraft Tractor	DETROIT	1979	DIESEL	On-Airport Stationary	200	Yes - Works	8,187.0	05/30/06	No
302659	Aircraft Tractor	DETROIT	1980	DIESEL	On-Airport Stationary		Yes - Works	1,586.0	05/29/06	No
474880	Aircraft Tractor	DETROIT	1987	DIESEL	On-Airport Stationary		Yes - Works	4,811.0	02/12/02	No
542815	Aircraft Tractor	DETROIT	1987	DIESEL	On-Airport Stationary		Yes - Works	435.0	05/06/06	No
224469	Aircraft Tractor	DETROIT		DIESEL	On-Airport Stationary		Yes - Works	107.0	06/11/06	No
255794	Aircraft Tractor	DEUTZ	1996	DIESEL	On-Airport Stationary	261	Yes - Works	2,149.0	03/25/06	No
537271	Aircraft Tractor	DOUGLAS	1997	DIESEL		155				No
252140	Aircraft Tractor	DOUGLAS	1999	DIESEL		155				No
353584	Aircraft Tractor	DOUGLAS	1999	DIESEL		155				No
356202	Aircraft Tractor	DOUGLAS	1999	DIESEL		155				No
479983	Aircraft Tractor	DOUGLAS	1999	DIESEL		155				No
500318	Aircraft Tractor	DOUGLAS	1999	DIESEL		155				No
ATC009	Aircraft Tractor	Ecotech	2004	Diesel	On-Airport Mobile Fueler	350	Yes - Works	9,311.0		No
10172	Aircraft Tractor	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
10182	Aircraft Tractor	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
10178	Aircraft Tractor	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
10179	Aircraft Tractor	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
HT 5180	Aircraft Tractor	FMC	2000	diesel	On-Airport Mobile Fueler	185	Yes - Works	1,096.0	05/22/2006	No
HT 5200	Aircraft Tractor	FMC	2000	diesel	On-Airport Mobile Fueler	185	Yes - Works	1,289.0	05/22/2006	No
T16	Aircraft Tractor	FMC B1200	2001	Diesel	On-Airport Mobile Fueler					No
263760	Aircraft Tractor	FMCXX	1997	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
342489	Aircraft Tractor	FMCXX	1997	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
363293	Aircraft Tractor	FMCXX	1999	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
339360	Aircraft Tractor	FMCXX	2002	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
26-519	Aircraft Tractor	GM	1971	diesel	On-Airport Stationary	300	Yes - Works	222.0	05/19/2006	
26-526	Aircraft Tractor	GM	1971	diesel	On-Airport Stationary	300	Yes - Works	9,383.0	05/19/2006	
26-535	Aircraft Tractor	GM	1985	diesel	On-Airport Stationary	300	Yes - Works	4,858.0	05/19/2006	
330204	Aircraft Tractor	HOUGH	1969	DIESEL		260				No
550557	Aircraft Tractor	HOUGH	1971	DIESEL	On-Airport Mobile Fueler	343	Yes - Works	6,788.0	05/15/06	No
ATC905 T500	Aircraft Tractor	Hough	1972	Diesel	On-Airport Mobile Fueler	550	Yes - Works	2,508.5		No
ATC901 T500	Aircraft Tractor	Hough	1972	Diesel	On-Airport Mobile Fueler	550	Yes - Works	3,652.7		No
309575	Aircraft Tractor	HOUGH	1972	DIESEL	On-Airport Mobile Fueler	205	Yes - Works			No
334803	Aircraft Tractor	HOUGH	1972	DIESEL	On-Airport Mobile Fueler	205	Yes - Works			No
237734	Aircraft Tractor	HOUGH	1972	DIESEL		343				No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
365337	Aircraft Tractor	HOUGH	1972	DIESEL		343				No
482069	Aircraft Tractor	HOUGH	1972	DIESEL		343				No
386981	Aircraft Tractor	HOUGH	1973	DIESEL	On-Airport Mobile Fueler	225	Yes - Works	152.0	05/15/06	No
468566	Aircraft Tractor	HOUGH	1973	DIESEL		343				No
515333	Aircraft Tractor	HOUGH	1988	DIESEL	On-Airport Mobile Fueler	170	Yes - Works	3,420.0	05/15/06	No
397348	Aircraft Tractor	HOUGH	1968	GASOLINE	On-Airport Stationary	200	Yes - Works	4,487.0	05/15/06	No
256543	Aircraft Tractor	HOUGH	1969	DIESEL	On-Airport Stationary	200	Yes - Works	6,845.0	05/15/06	No
279741	Aircraft Tractor	HOUGH	1970	DIESEL	On-Airport Stationary	200	Yes - Works	1,324.0	05/15/06	No
534667	Aircraft Tractor	HOUGH	1970	DIESEL	On-Airport Stationary	200	Yes - Works	2,420.0	05/15/06	No
532686	Aircraft Tractor	HOUGH	1970	DIESEL	On-Airport Stationary	200	Yes - Works	3,070.0	05/15/06	No
470190	Aircraft Tractor	HOUGH	1977	DIESEL	On-Airport Stationary	200	Yes - Works	1,886.0	05/15/06	No
420721	Aircraft Tractor	HOUGH	1979	DIESEL	On-Airport Stationary	200	Yes - Works	602.0	05/15/06	No
T1	Aircraft Tractor	Hough T-500	1975	Diesel	On-Airport Mobile Fueler					No
T12	Aircraft Tractor	Hough T-500	1976	Diesel	On-Airport Mobile Fueler					No
T2	Aircraft Tractor	Hough T-500	1977	Diesel	On-Airport Mobile Fueler					No
T3	Aircraft Tractor	Hough T-500	1977	Diesel	On-Airport Mobile Fueler					No
T14	Aircraft Tractor	Hough T-500	1979	Diesel	On-Airport Mobile Fueler					No
T17	Aircraft Tractor	Hough T-500	1979	Diesel	On-Airport Mobile Fueler					No
T4	Aircraft Tractor	Hough T-500	1989	Diesel	On-Airport Mobile Fueler					No
T20	Aircraft Tractor	Hough T-650	1988	Diesel	On-Airport Mobile Fueler					No
303758	Aircraft Tractor	INGERSOLL	1984	DIESEL	On-Airport Mobile Fueler					No
556759	Aircraft Tractor	INGERSOLL	1985	DIESEL	On-Airport Mobile Fueler					No
522074	Aircraft Tractor	JETLINE	1995	DIESEL	On-Airport Mobile Fueler					No
508564	Aircraft Tractor	JETLINE	1998	DIESEL	On-Airport Mobile Fueler					No
319620	Aircraft Tractor	JETLINE	2000	DIESEL	On-Airport Mobile Fueler					No
217203	Aircraft Tractor	JETLINE		DIESEL	On-Airport Mobile Fueler					No
501858	Aircraft Tractor	PAYMOVER	1989	DIESEL	On-Airport Stationary	200	Yes - Works	865.0	05/15/06	No
243299	Aircraft Tractor	PAYMOVER	1989	DIESEL	On-Airport Stationary	200	Yes - Works	4,245.0	05/15/06	No
303814	Aircraft Tractor	PAYMOVER	1989	DIESEL	On-Airport Stationary	200	Yes - Works	7,214.0	05/15/06	No
473410	Aircraft Tractor	PAYMOVER	2000	DIESEL	On-Airport Stationary	200	Yes - Works	2,661.0	05/15/06	No
S/N: 95-0639V	Aircraft Tractor	Pettibone	1995	LPG	On-Airport Mobile Fueler	112	Yes - Works	1,024.0	06/07/2006	No
S/N: 95-0640	Aircraft Tractor	Pettibone	1995	LPG	On-Airport Mobile Fueler	112	Yes - Works	1,152.0	06/07/2006	No
317723	Aircraft Tractor	S & S TUG	1986	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	883.0	06/02/06	No
553042	Aircraft Tractor	S & S TUG	1990	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	173.0	06/02/06	No
390628	Aircraft Tractor	S & S TUG	1990	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	496.0	06/02/06	No
528710	Aircraft Tractor	S & S TUG	1990	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	584.0	06/02/06	No
375340	Aircraft Tractor	S & S TUG	1991	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	2,123.0	06/02/06	No
272356	Aircraft Tractor	S & S TUG	1992	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	240.0	06/02/06	No
283115	Aircraft Tractor	S & S TUG	1992	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	484.0	06/02/06	No
385994	Aircraft Tractor	S & S TUG	1992	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	1,228.0	06/02/06	No
434623	Aircraft Tractor	S & S TUG	1993	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	981.0	06/02/06	No
478471	Aircraft Tractor	S & S TUG	1994	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	881.0	06/02/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
386288	Aircraft Tractor	S & S TUG	1995	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	1,222.0	06/02/06	No
431410	Aircraft Tractor	S & S TUG	1995	DIESEL	On-Airport Mobile Fueler	136	Yes - Works	1,465.0	06/02/06	No
347928	Aircraft Tractor	S AND S	1982	DIESEL		256				No
424851	Aircraft Tractor	S AND S	1984	DIESEL		256				No
336084	Aircraft Tractor	S AND S	1999	DIESEL		168				No
451059	Aircraft Tractor	S AND S	1999	DIESEL		168				No
455203	Aircraft Tractor	S AND S	1999	DIESEL		168				No
285943	Aircraft Tractor	S AND S	2000	DIESEL		168				No
498603	Aircraft Tractor	S AND S	2000	DIESEL		168				No
557039	Aircraft Tractor	S AND S	2000	DIESEL		168				No
10155	Aircraft Tractor	S&S	1997	diesel	On-Airport Mobile Fueler		Yes - Works			
10153	Aircraft Tractor	S&S	1997	diesel	On-Airport Mobile Fueler		Yes - Works			
10171	Aircraft Tractor	S&S	1998	diesel	On-Airport Mobile Fueler		Yes - Works			
10194	Aircraft Tractor	S&S	2000	diesel	On-Airport Mobile Fueler		Yes - Works			
10252	Aircraft Tractor	S&S	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
T21	Aircraft Tractor	S&S GT110	2001	Diesel	On-Airport Mobile Fueler					No
T7	Aircraft Tractor	S&S GT32	1983	Diesel	On-Airport Mobile Fueler					No
T5	Aircraft Tractor	S&S GT32	1984	Diesel	On-Airport Mobile Fueler					No
T6	Aircraft Tractor	S&S GT32	1984	Diesel	On-Airport Mobile Fueler					No
T10	Aircraft Tractor	S&S GT32	1984	Diesel	On-Airport Mobile Fueler					No
T19	Aircraft Tractor	S&S GT32	1984	Diesel	On-Airport Mobile Fueler					No
T9	Aircraft Tractor	S&S GT35	2000	Diesel	On-Airport Mobile Fueler					No
T11	Aircraft Tractor	S&S GT35	2000	Diesel	On-Airport Mobile Fueler					No
T15	Aircraft Tractor	S&S GT35	2001	Diesel	On-Airport Mobile Fueler					No
T22	Aircraft Tractor	S&S T-100	1994	Diesel	On-Airport Mobile Fueler					No
T13	Aircraft Tractor	S&S T-750	1996	Diesel	On-Airport Mobile Fueler					No
514136	Aircraft Tractor	S/S	1978	DIESEL	On-Airport Mobile Fueler	136	Yes - Works			No
541247	Aircraft Tractor	S/S	1984	DIESEL	On-Airport Mobile Fueler	136	Yes - Works			No
504980	Aircraft Tractor	S/S	1986	DIESEL	On-Airport Mobile Fueler	136	Yes - Works			No
325843	Aircraft Tractor	S/S	1987	DIESEL	On-Airport Mobile Fueler	205	Yes - Works			No
483294	Aircraft Tractor	SMRND	1980	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
302540	Aircraft Tractor	SRAND	1990	DIESEL	On-Airport Stationary	200	Yes - Works	4,702.0	05/15/06	No
309869	Aircraft Tractor	SS TUG	1979	DIESEL	On-Airport Mobile Fueler	131	Yes - Works	389.0	05/15/06	No
226842	Aircraft Tractor	SS TUG	1986	DIESEL	On-Airport Mobile Fueler	225	Yes - Works	4,843.0	05/15/06	No
542381	Aircraft Tractor	SS TUG	1999	DIESEL	On-Airport Mobile Fueler	190	Yes - Works	3,669.0	05/15/06	No
382011	Aircraft Tractor	SS TUG	2000	DIESEL	On-Airport Mobile Fueler	255	Yes - Works	2,187.0	05/15/06	No
415436	Aircraft Tractor	SS TUG	2003	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	1,165.0	05/15/06	No
446579	Aircraft Tractor	STEWART & STEVENSON	1986	DIESEL	On-Airport Mobile Fueler					No
533575	Aircraft Tractor	STEWART & STEVENSON	1982	DIESEL	On-Airport Stationary	200	Yes - Works	1,543.0	05/15/06	No
315525	Aircraft Tractor	STEWART & STEVENSON	1983	ELECTRIC	On-Airport Stationary	200	Yes - Works	2,599.0	05/15/06	No
322959	Aircraft Tractor	STEWART & STEVENSON	1983	ELECTRIC	On-Airport Stationary	200	Yes - Works	7,939.0	05/15/06	No
531244	Aircraft Tractor	STEWART & STEVENSON	1983	ELECTRIC	On-Airport Stationary	200	Yes - Works	9,695.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
280539	Aircraft Tractor	STEWART & STEVENSON	1984	ELECTRIC	On-Airport Stationary	200	Yes - Works	2,940.0	05/15/06	No
374318	Aircraft Tractor	STEWART & STEVENSON	1984	ELECTRIC	On-Airport Stationary	200	Yes - Works	7,995.0	05/15/06	No
313390	Aircraft Tractor	STEWART & STEVENSON	1986	ELECTRIC	On-Airport Stationary	200	Yes - Works	1,122.0	05/15/06	No
565278	Aircraft Tractor	STEWART & STEVENSON	1986	ELECTRIC	On-Airport Stationary	200	Yes - Works	4,529.0	05/15/06	No
298424	Aircraft Tractor	STEWART & STEVENSON	1987	ELECTRIC	On-Airport Stationary	200	Yes - Works	1,331.0	05/15/06	No
489503	Aircraft Tractor	STEWART & STEVENSON	1988	ELECTRIC	On-Airport Stationary	200	Yes - Works	1,681.0	05/15/06	No
538223	Aircraft Tractor	STEWART & STEVENSON	1988	DIESEL	On-Airport Stationary	200	Yes - Works	1,785.0	05/15/06	No
220661	Aircraft Tractor	STEWART & STEVENSON	1989	ELECTRIC	On-Airport Stationary	200	Yes - Works	4,472.0	05/15/06	No
398538	Aircraft Tractor	STEWART & STEVENSON	1990	ELECTRIC	On-Airport Stationary	200	Yes - Works	3,892.0	05/15/06	No
350357	Aircraft Tractor	STEWART & STEVENSON	1991	DIESEL	On-Airport Stationary	200	Yes - Works	430.0	05/15/06	No
527205	Aircraft Tractor	STEWART & STEVENSON	1994	DIESEL	On-Airport Stationary	200	Yes - Works	0.0	05/15/06	No
433223	Aircraft Tractor	STEWART & STEVENSON	1996	ELECTRIC	On-Airport Stationary	200	Yes - Works	77.0	05/15/06	No
226296	Aircraft Tractor	STEWART & STEVENSON	1996	DIESEL	On-Airport Stationary	200	Yes - Works	8,733.0	05/15/06	No
274631	Aircraft Tractor	STEWART & STEVENSON	1997	DIESEL	On-Airport Stationary	200	Yes - Works	7,385.0	05/15/06	No
241052	Aircraft Tractor	STEWART & STEVENSON	1998	ELECTRIC	On-Airport Stationary	200	Yes - Works	521.0	05/15/06	No
ATC908 GT110	Aircraft Tractor	Stewart Stevenson	1996	Diesel	On-Airport Mobile Fueler	450	Yes - Works	2,023.0		No
ATC909 GT110	Aircraft Tractor	Stewart Stevenson	2000	Diesel	On-Airport Mobile Fueler	450	Yes - Works	6,286.9		No
ATC 913 GT35A	Aircraft Tractor	Stewart Stevenson	2005	Diesel	On-Airport Mobile Fueler	250	Yes - Works	1,709.9		No
ATC910 GT110 LT	Aircraft Tractor	Stewart Stevenson	2005	Diesel	On-Airport Mobile Fueler	450	Yes - Works	2,860.7		No
ATC912 GT110 LT	Aircraft Tractor	Stewart Stevenson	2005	Diesel	On-Airport Mobile Fueler	450	Yes - Works	3,580.0		No
ATC 914 GT35A	Aircraft Tractor	Stewart Stevenson	2005	Diesel	On-Airport Mobile Fueler	250	Yes - Doesn't Work			No
425670	Aircraft Tractor	STEWART&STEVENSON		DIESEL	On-Airport Mobile Fueler	162				No
438774	Aircraft Tractor	STEWART&STEVENSON		DIESEL	On-Airport Mobile Fueler	162				No
423857	Aircraft Tractor	STEWART&STEVENSON		DIESEL	On-Airport Mobile Fueler					No
432103	Aircraft Tractor	STWST	1980	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
482258	Aircraft Tractor	STWST	1980	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
453054	Aircraft Tractor	STWST	1989	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
516824	Aircraft Tractor	STWST	1996	ELECTRIC	On-Airport Stationary	265	Yes - Works			No
10201	Aircraft Tractor	TLD	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
ATL001 TPX500	Aircraft Tractor	TLD	2006	Diesel	On-Airport Mobile Fueler	650	Yes - Works	1,116.6		No
T23	Aircraft Tractor	TLDTPX 500	2004	Diesel	On-Airport Mobile Fueler					No
495355	Aircraft Tractor	TLDXX	2004	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
446642	Aircraft Tractor	TLDXX	2005	DIESEL	On-Airport Mobile Fueler	265	Yes - Works			No
479346	Aircraft Tractor	TRACMA	1999	DIESEL		280				No
260897	Aircraft Tractor	TRACMA	2000	DIESEL		280				No
445641	Aircraft Tractor	TUG	1994	DIESEL		86	Yes - Works			No
VIN-387-402U	Aircraft Tractor	TUG	N/A	GASOLINE	On-Airport Mobile Fueler		Yes - Works	-	N/A	Yes - Other
T8	Aircraft Tractor	United SM200		Gasoline	On-Airport Mobile Fueler					No
8712	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	697.0	11/01/2006	No
10174	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	1,959.0	11/01/2006	No
10175	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	2,564.0	11/01/2006	No
10283	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	2,741.0	11/01/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
3492	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	2,877.0	11/01/2006	No
10282	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	2,969.0	11/01/2006	No
8688	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	3,651.0	11/01/2006	No
8788	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	3,874.0	11/01/2006	No
8783	Aircraft Tractor			Diesel	On-Airport Mobile Fueler		Yes - Works	6,298.0	11/01/2006	No
499737	Aircraft Tractor			DIESEL						No
334782	Baggage Tractor	CHARLATTE	1996	ELECTRIC		95				No
352282	Baggage Tractor	CHARLATTE	1996	ELECTRIC		95				No
248983	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
277676	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
303051	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
368900	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
370489	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
388738	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
408121	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
415639	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
508655	Baggage Tractor	CHARLATTE	1997	ELECTRIC		95				No
218400	Baggage Tractor	CHARLATTE	1998	ELECTRIC		95				No
303072	Baggage Tractor	CHARLATTE	1998	ELECTRIC		95				No
338807	Baggage Tractor	CHARLATTE	1998	ELECTRIC		95				No
370636	Baggage Tractor	CHARLATTE	1998	ELECTRIC		95				No
420959	Baggage Tractor	CHARLATTE	1998	ELECTRIC		95				No
453600	Baggage Tractor	CHARLATTE	1998	ELECTRIC		95				No
224630	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
226667	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
264075	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
271523	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
274484	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
274603	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
274617	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
276675	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
280364	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
289380	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
309001	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
309302	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
315812	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
323617	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
324800	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
329616	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
337743	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
338345	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
340221	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
342181	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
346626	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
348320	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
350350	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
352534	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
362026	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
362901	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
367675	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
372645	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
393099	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
398727	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
412083	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
414596	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
414904	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
434651	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
435827	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
440846	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
442211	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
443919	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
454741	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
456127	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
460852	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
472339	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
472563	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
473963	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
485933	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
487501	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
490777	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
491512	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
496958	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
498197	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
503048	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
508823	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
514703	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
522725	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
525917	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
530747	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
534296	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
545804	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
547162	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
553294	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
561428	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
564410	Baggage Tractor	CHARLATTE	1999	ELECTRIC		95				No
534744	Baggage Tractor	CHARLATTE	2000	ELECTRIC		92				No
333746	Baggage Tractor	CHARLATTE	2000	ELECTRIC		95				No
348033	Baggage Tractor	CHARLATTE	2000	ELECTRIC		95				No
462161	Baggage Tractor	CHARLATTE	2000	ELECTRIC		95				No
332584	Baggage Tractor	CHARLATTE	2001	ELECTRIC		95				No
239302	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
250579	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
261163	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
320103	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
343861	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
351708	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
351799	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
374759	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
375004	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
377083	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
394261	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
397278	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
416906	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
419069	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
429863	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
457506	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
463022	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
471051	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
481481	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
485457	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
554995	Baggage Tractor	CHARLATTE	2002	ELECTRIC		95				No
471758	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	14.0	05/15/06	No
535514	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	97.0	05/15/06	No
405412	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	123.0	05/15/06	No
292495	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	246.0	05/15/06	No
551166	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	322.0	05/15/06	No
359114	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	369.0	05/15/06	No
293727	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	385.0	05/15/06	No
266182	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	644.0	05/15/06	No
436324	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	696.0	05/15/06	No
227696	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	792.0	05/15/06	No
231483	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,058.0	05/15/06	No
374514	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,135.0	05/15/06	No
254030	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,284.0	05/15/06	No
476322	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,311.0	05/15/06	No
304948	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,986.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
445242	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,132.0	05/15/06	No
548835	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,970.0	05/15/06	No
254590	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,230.0	05/15/06	No
354592	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,237.0	05/15/06	No
361963	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,367.0	05/15/06	No
229586	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,638.0	05/15/06	No
221452	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,642.0	05/15/06	No
421554	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,652.0	05/15/06	No
451143	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,702.0	05/15/06	No
396858	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,769.0	05/15/06	No
317800	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,790.0	05/15/06	No
559041	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,880.0	05/15/06	No
282863	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,929.0	05/15/06	No
555009	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,185.0	05/15/06	No
307160	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,237.0	05/15/06	No
467824	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,483.0	05/15/06	No
516635	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,497.0	05/15/06	No
390642	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,684.0	05/15/06	No
505183	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,838.0	05/15/06	No
292089	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,394.0	05/15/06	No
477911	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,565.0	05/15/06	No
265755	Baggage Tractor	CHARLATTE	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	37,907.0	05/15/06	No
412587	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,833.0	05/15/06	No
281351	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,991.0	05/15/06	No
414526	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,353.0	05/15/06	No
230433	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,371.0	05/15/06	No
437535	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,458.0	05/15/06	No
467852	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,664.0	05/15/06	No
441700	Baggage Tractor	CHARLATTE	1996	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,813.0	05/15/06	No
543242	Baggage Tractor	CHARLATTE	1997	ELECTRIC	On-Airport Stationary	85	Yes - Works	86.0	05/15/06	No
220815	Baggage Tractor	CHARLATTE	1997	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,440.0	05/15/06	No
320971	Baggage Tractor	CHARLATTE	1997	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,440.0	05/15/06	No
351680	Baggage Tractor	CHARLATTE	1997	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,749.0	05/15/06	No
348411	Baggage Tractor	CLARK	1978	LPG	On-Airport Mobile Fueler	95	Yes - Works	1,797.0	05/15/06	No
223566	Baggage Tractor	CLARK	1983	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	712.0	06/02/06	No
342916	Baggage Tractor	CLARK	1961	GASOLINE	On-Airport Stationary	93	Yes - Works	166.0	05/15/06	No
240667	Baggage Tractor	CLARK	1970	LPG	On-Airport Stationary	93	Yes - Works	3,745.0	05/15/06	No
334642	Baggage Tractor	CLARK	1976	GASOLINE	On-Airport Stationary	93	Yes - Works	2,978.0	05/15/06	No
389620	Baggage Tractor	CLARK	1979	GASOLINE	On-Airport Stationary	93	Yes - Works	1,543.0	05/15/06	No
493941	Baggage Tractor	CLARK	1979	GASOLINE	On-Airport Stationary	93	Yes - Works	7,240.0	05/15/06	No
277837	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
319732	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
354991	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
391272	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
417424	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
456414	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
457415	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
466865	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
472444	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
505547	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
528584	Baggage Tractor	COA	2000	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
321867	Baggage Tractor	COA	2001	ELECTRIC	On-Airport Mobile Fueler	92	Yes - Works			No
370300	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	5,311.0	04/28/06	No
394065	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	111.0	05/24/06	No
414162	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	461.0	06/01/06	No
550571	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	312.0	06/08/06	No
289772	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	1,479.0	06/08/06	No
462084	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	9,957.0	06/09/06	No
362306	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	257.0	06/11/06	No
480284	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	449.0	06/11/06	No
465353	Baggage Tractor	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	940.0	06/11/06	No
305676	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	499.0	04/30/06	No
311717	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	9,743.0	05/09/06	No
459753	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	460.0	05/19/06	No
387933	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	5,138.0	05/23/06	No
244601	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	68.0	05/30/06	No
440566	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	133.0	05/30/06	No
402367	Baggage Tractor	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	9,467.0	06/06/06	No
241773	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	3,190.0	02/04/01	No
529221	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	684.0	11/22/01	No
235788	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	2,721.0	11/24/01	No
471128	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	8,374.0	04/28/06	No
485121	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	5,661.0	06/01/06	No
538783	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	8,107.0	06/04/06	No
312144	Baggage Tractor	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	2,517.0	06/09/06	No
415429	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	240.0	11/28/01	No
386995	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	2.0	01/15/02	No
404866	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	21.0	01/15/02	No
217665	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	29.0	01/15/02	No
296009	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	462.0	02/01/02	No
563962	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	618.0	02/07/02	No
384398	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	572.0	02/15/02	No
261569	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	6,060.0	03/24/06	No
558306	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	6,154.0	03/24/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
345513	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	115.0	04/11/06	No
265699	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	590.0	05/16/06	No
390229	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	5,870.0	05/24/06	No
460796	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	9,845.0	06/06/06	No
345268	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	5,678.0	06/07/06	No
408268	Baggage Tractor	DEUTZ	2001	DIESEL	On-Airport Stationary	60	Yes - Works	4,682.0	06/11/06	No
285677	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	4.0	05/15/06	No
367178	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	410.0	05/15/06	No
475195	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,609.0	05/15/06	No
356587	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,968.0	05/15/06	No
507409	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,033.0	05/15/06	No
404964	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,096.0	05/15/06	No
284242	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,897.0	05/15/06	No
427546	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,182.0	05/15/06	No
241752	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,604.0	05/15/06	No
505106	Baggage Tractor	ELGIN ELECTRIC	1992	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,015.0	05/15/06	No
248381	Baggage Tractor	ELGIN ELECTRIC	1993	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,612.0	05/15/06	No
224595	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	71.0	05/15/06	No
425775	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	138.0	05/15/06	No
527142	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	399.0	05/15/06	No
547414	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	567.0	05/15/06	No
445284	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	577.0	05/15/06	No
280329	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,176.0	05/15/06	No
468580	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,728.0	05/15/06	No
326781	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,692.0	05/15/06	No
515410	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,870.0	05/15/06	No
378700	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,953.0	05/15/06	No
224924	Baggage Tractor	ELGIN ELECTRIC	1994	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,185.0	05/15/06	No
259154	Baggage Tractor	EQUI-TECH		GASOLINE	On-Airport Mobile Fueler	95				No
316120	Baggage Tractor	FORD	1978	GAS	On-Airport Stationary	118	Yes - Works	1,898.0	02/13/02	No
239603	Baggage Tractor	FORD	1987	GAS	On-Airport Stationary	118	Yes - Works	3,097.0	06/08/06	No
265412	Baggage Tractor	FORD	1991	GAS	On-Airport Stationary	118	Yes - Works	2,518.0	04/01/06	No
397670	Baggage Tractor	FORD	1991	GAS	On-Airport Stationary	118	Yes - Works	8,316.0	06/01/06	No
259637	Baggage Tractor	HARLAN	1984	GASOLINE	On-Airport Mobile Fueler					No
262878	Baggage Tractor	HARLAN	1984	GASOLINE	On-Airport Mobile Fueler					No
288407	Baggage Tractor	HARLAN	1984	GASOLINE	On-Airport Mobile Fueler					No
278740	Baggage Tractor	HARLAN	1983	DIESEL	On-Airport Stationary	93	Yes - Works	3,993.0	05/15/06	No
493472	Baggage Tractor	HARLAN	1983	DIESEL	On-Airport Stationary	93	Yes - Works	8,967.0	05/15/06	No
395675	Baggage Tractor	JETLINE	1992	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	13,505.0	06/02/06	No
495068	Baggage Tractor	JETLINE	1992	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	18,711.0	06/02/06	No
344036	Baggage Tractor	JETLINE	1993	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	579.0	06/02/06	No
296667	Baggage Tractor	JETLINE	1993	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,763.0	06/02/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
471352	Baggage Tractor	JETLINE	1993	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	7,074.0	06/02/06	No
312746	Baggage Tractor	JETLINE	1993	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	10,045.0	06/02/06	No
491897	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	379.0	06/02/06	No
419979	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,972.0	06/02/06	No
322812	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,077.0	06/02/06	No
420266	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,177.0	06/02/06	No
539329	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	6,955.0	06/02/06	No
315679	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	8,563.0	06/02/06	No
537656	Baggage Tractor	JETLINE	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	20,105.0	06/02/06	No
346885	Baggage Tractor	JETLINE	1995	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	6,522.0	06/02/06	No
245378	Baggage Tractor	JETLINE	1995	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	13,457.0	06/02/06	No
443541	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	1,226.0	06/02/06	No
444409	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	1,339.0	06/02/06	No
551544	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	5,456.0	06/02/06	No
292313	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	7,887.0	06/02/06	No
460481	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	7,943.0	06/02/06	No
366779	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	8,176.0	06/02/06	No
507780	Baggage Tractor	JETLINE	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	15,220.0	06/02/06	No
222075	Baggage Tractor	JETLINE		GASOLINE	On-Airport Mobile Fueler	95				No
258475	Baggage Tractor	JETLINE		GASOLINE	On-Airport Mobile Fueler	95				No
284767	Baggage Tractor	JETLINE		GASOLINE	On-Airport Mobile Fueler	95				No
525539	Baggage Tractor	JETLINE		GASOLINE	On-Airport Mobile Fueler	95				No
550858	Baggage Tractor	JETLINE		GASOLINE	On-Airport Mobile Fueler	95				No
430241	Baggage Tractor	KALAMAZOO	1974	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,485.0	05/15/06	No
265762	Baggage Tractor	NAVISTAR	2000	DIESEL	On-Airport Stationary	93	Yes - Works	6,451.0	05/15/06	Yes - Other
218589	Baggage Tractor	NORTH	1995	GASOLINE	On-Airport Mobile Fueler					No
328006	Baggage Tractor	NORTHWESTERN	1995	DIESEL	On-Airport Stationary	93	Yes - Works	11,842.0	05/15/06	No
386323	Baggage Tractor	NORTHWESTERN	1996	DIESEL	On-Airport Stationary	93	Yes - Works	6,910.0	05/15/06	No
304815	Baggage Tractor	NORTHWESTERN	1996	DIESEL	On-Airport Stationary	93	Yes - Works	9,086.0	05/15/06	No
512967	Baggage Tractor	NORTHWESTERN	1996	DIESEL	On-Airport Stationary	93	Yes - Works	9,155.0	05/15/06	No
456421	Baggage Tractor	NORTHWESTERN	1996	DIESEL	On-Airport Stationary	93	Yes - Works	15,406.0	05/15/06	No
254205	Baggage Tractor	NORTHWESTERN	1996	DIESEL	On-Airport Stationary	93	Yes - Works	17,156.0	05/15/06	No
16516	Baggage Tractor	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16531	Baggage Tractor	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16532	Baggage Tractor	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16533	Baggage Tractor	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16534	Baggage Tractor	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16535	Baggage Tractor	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
257124	Baggage Tractor	SS TUG	1987	LPG	On-Airport Mobile Fueler	95	Yes - Works	3,199.0	05/15/06	No
416647	Baggage Tractor	SS TUG	1987	LPG	On-Airport Mobile Fueler	95	Yes - Works		05/16/06	No
410179	Baggage Tractor	SS TUG	1993	LPG	On-Airport Mobile Fueler	95	Yes - Works	280.0	05/15/06	No
531755	Baggage Tractor	SS TUG	1993	LPG	On-Airport Mobile Fueler	95	Yes - Works	886.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
377531	Baggage Tractor	SS TUG	1993	LPG	On-Airport Mobile Fueler	95	Yes - Works	8,916.0	05/15/06	No
478205	Baggage Tractor	SS TUG	1993	LPG	On-Airport Mobile Fueler	95	Yes - Works	1,147.0		No
374857	Baggage Tractor	SS TUG	1996	LPG	On-Airport Stationary	95	Yes - Works	3,534.0	05/15/06	No
317170	Baggage Tractor	SS TUG	1997	LPG	On-Airport Stationary	95	Yes - Works	5,212.0	05/15/06	No
266637	Baggage Tractor	SS TUG	1998	LPG	On-Airport Mobile Fueler	95	Yes - Works	234.0	05/15/06	No
225498	Baggage Tractor	SS TUG	1998	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,425.0	05/15/06	No
447517	Baggage Tractor	SS TUG	1998	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,585.0	05/15/06	No
327691	Baggage Tractor	SS TUG	1998	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,625.0	05/15/06	No
451262	Baggage Tractor	SS TUG	1998	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,734.0	05/15/06	No
412916	Baggage Tractor	SS TUG	1999	LPG	On-Airport Mobile Fueler	95	Yes - Works	2,838.0	05/15/06	No
387170	Baggage Tractor	SS TUG	1999	LPG	On-Airport Mobile Fueler	95	Yes - Works	4,637.0	05/15/06	No
231371	Baggage Tractor	SS TUG	1999	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,086.0	05/15/06	No
332108	Baggage Tractor	SS TUG	1999	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,189.0	05/15/06	No
389123	Baggage Tractor	SS TUG	1999	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,314.0	05/15/06	No
388164	Baggage Tractor	SS TUG	1999	LPG	On-Airport Mobile Fueler	95	Yes - Works	5,690.0	05/15/06	No
297143	Baggage Tractor	SS TUG	2001	ELECTRIC		29	Yes - Works	2,939.0	05/15/06	No
476511	Baggage Tractor	SS TUG	2001	ELECTRIC		29	Yes - Works	3,214.0	05/15/06	No
510510	Baggage Tractor	SS TUG	2003	ELECTRIC		29	Yes - Works	3,861.0	05/15/06	No
271313	Baggage Tractor	TAYLOR DUNN	2000	ELECTRIC		92				No
264201	Baggage Tractor	TAYLOR DUNN	2000	ELECTRIC		95				No
382823	Baggage Tractor	TAYLOR DUNN	2000	ELECTRIC		95				No
TG 1550	Baggage Tractor	TIGER MFG	1999	LPG	On-Airport Mobile Fueler	124	Yes - Works	4,637.0	05/22/2006	No
TG 1450	Baggage Tractor	TIGER MFG	1999	LPG	On-Airport Mobile Fueler	124	Yes - Works	8,447.0	05/22/2006	No
56 RT 127	Baggage Tractor	Tiger TIG 50	2000	Gasoline	On-Airport Mobile Fueler					No
57 RT 128	Baggage Tractor	Tiger TIG 50	2000	Gasoline	On-Airport Mobile Fueler					No
6 RT 115	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
12 RT 116	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
18 RT 117	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
19 RT 118	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
20 RT 119	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
22 RT 120	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
24 RT 121	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
25 RT 122	Baggage Tractor	Tiger TIG 50	2000	Propane	On-Airport Mobile Fueler					No
366842	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,748.0	05/15/06	No
240128	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,905.0	05/15/06	No
373730	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,199.0	05/15/06	No
370132	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,954.0	05/15/06	No
550018	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,064.0	05/15/06	No
375214	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,363.0	05/15/06	No
374451	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,387.0	05/15/06	No
459158	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,418.0	05/15/06	No
362698	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,563.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
319130	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,627.0	05/15/06	No
360759	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,704.0	05/15/06	No
255234	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,254.0	05/15/06	No
334586	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,475.0	05/15/06	No
409087	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,652.0	05/15/06	No
516481	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,802.0	05/15/06	No
495348	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,953.0	05/15/06	No
401023	Baggage Tractor	TOYOTA	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,982.0	05/15/06	No
370664	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,331.0	05/15/06	No
306271	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,513.0	05/15/06	No
490903	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,609.0	05/15/06	No
230888	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,614.0	05/15/06	No
434714	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,639.0	05/15/06	No
435386	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	6,994.0	05/15/06	No
325948	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,276.0	05/15/06	No
246827	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,882.0	05/15/06	No
371658	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,948.0	05/15/06	No
346297	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,454.0	05/15/06	No
515746	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,462.0	05/15/06	No
224091	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,592.0	05/15/06	No
517832	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,675.0	05/15/06	No
339073	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,706.0	05/15/06	No
436009	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,706.0	05/15/06	No
431837	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,847.0	05/15/06	No
565397	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,877.0	05/15/06	No
433349	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	8,879.0	05/15/06	No
560693	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,025.0	05/15/06	No
253827	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,029.0	05/15/06	No
242263	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,039.0	05/15/06	No
412265	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,123.0	05/15/06	No
253414	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,525.0	05/15/06	No
238763	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,536.0	05/15/06	No
217763	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,547.0	05/15/06	No
312984	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,556.0	05/15/06	No
432187	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,577.0	05/15/06	No
473088	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,626.0	05/15/06	No
333816	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,650.0	05/15/06	No
518049	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,716.0	05/15/06	No
323085	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,720.0	05/15/06	No
484617	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,730.0	05/15/06	No
366814	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,755.0	05/15/06	No
240009	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,768.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
238154	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,769.0	05/15/06	No
260050	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,817.0	05/15/06	No
352170	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,831.0	05/15/06	No
551957	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,845.0	05/15/06	No
489706	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,892.0	05/15/06	No
287098	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,898.0	05/15/06	No
250586	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,923.0	05/15/06	No
534100	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,938.0	05/15/06	No
312249	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,958.0	05/15/06	No
353332	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	9,966.0	05/15/06	No
294728	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	10,102.0	05/15/06	No
329812	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	10,230.0	05/15/06	No
435057	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	10,289.0	05/15/06	No
494102	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	10,339.0	05/15/06	No
441287	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	10,452.0	05/15/06	No
441084	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	10,551.0	05/15/06	No
305228	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	11,060.0	05/15/06	No
323589	Baggage Tractor	TOYOTA	2002	ELECTRIC	On-Airport Stationary	85	Yes - Works	11,123.0	05/15/06	No
TG 0270	Baggage Tractor	TUG	1984	LPG	On-Airport Mobile Fueler	124	Yes - Works	1,701.0	05/22/2006	No
TG 0250	Baggage Tractor	TUG	1985	LPG	On-Airport Mobile Fueler	127	Yes - Works	9,161.0	05/22/2006	No
TG 0260	Baggage Tractor	TUG	1985	LPG	On-Airport Mobile Fueler	124	Yes - Works	22,264.0	05/22/2006	No
TG 1220	Baggage Tractor	TUG	1986	LPG	On-Airport Mobile Fueler	124	Yes - Works	7,542.0	05/22/2006	No
BTU344 LPG	Baggage Tractor	TUG	1987	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
TUG	Baggage Tractor	TUG	1988	gasoline	On-Airport Mobile Fueler		Yes - Works	14,888.0	06/13/2006	No
264621	Baggage Tractor	TUG	1988	GASOLINE	On-Airport Mobile Fueler					No
285271	Baggage Tractor	TUG	1988	GASOLINE	On-Airport Mobile Fueler					No
349468	Baggage Tractor	TUG	1988	GASOLINE	On-Airport Mobile Fueler					No
266882	Baggage Tractor	TUG	1989	GASOLINE	On-Airport Mobile Fueler					No
TG 1210	Baggage Tractor	TUG	1991	LPG	On-Airport Mobile Fueler	124	Yes - Works	7,226.0	05/22/2006	No
381080	Baggage Tractor	TUG	1992	GASOLINE	On-Airport Mobile Fueler					No
16251	Baggage Tractor	TUG	1992	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16256	Baggage Tractor	TUG	1992	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16258	Baggage Tractor	TUG	1992	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16259	Baggage Tractor	TUG	1993	LPG	On-Airport Mobile Fueler	170	Yes - Works			
17281	Baggage Tractor	TUG	1993	LPG	On-Airport Mobile Fueler	170	Yes - Works			
222432	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
254583	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
390614	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
427728	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
448588	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
475482	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
517727	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
547939	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
554211	Baggage Tractor	TUG	1994	GASOLINE	On-Airport Mobile Fueler					No
254912	Baggage Tractor	TUG	1995	GASOLINE		95	Yes - Works			No
241675	Baggage Tractor	TUG	1995	ELECTRIC		92				No
242753	Baggage Tractor	TUG	1995	ELECTRIC		92				No
425950	Baggage Tractor	TUG	1995	ELECTRIC		92				No
495775	Baggage Tractor	TUG	1995	ELECTRIC		92				No
539000	Baggage Tractor	TUG	1995	ELECTRIC		92				No
283038	Baggage Tractor	TUG	1995	GASOLINE	On-Airport Mobile Fueler					No
BTU353 GAS	Baggage Tractor	TUG	1995	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU376 GAS	Baggage Tractor	TUG	1995	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU395 GAS	Baggage Tractor	TUG	1995	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU354 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU375 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU378 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU382 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU387 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU388 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU393 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU394 LPG	Baggage Tractor	TUG	1995	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
335293	Baggage Tractor	TUG	1996	GASOLINE		95	Yes - Works			No
BTU396 GAS	Baggage Tractor	TUG	1996	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU397 GAS	Baggage Tractor	TUG	1996	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
17324	Baggage Tractor	TUG	1996	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16325	Baggage Tractor	TUG	1996	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16344	Baggage Tractor	TUG	1996	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16347	Baggage Tractor	TUG	1997	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16348	Baggage Tractor	TUG	1997	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16349	Baggage Tractor	TUG	1997	LPG	On-Airport Mobile Fueler	170	Yes - Works			
542059	Baggage Tractor	TUG	1998	GASOLINE	On-Airport Mobile Fueler					No
16424	Baggage Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16425	Baggage Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16426	Baggage Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16427	Baggage Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16433	Baggage Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16435	Baggage Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
BTU398 LPG	Baggage Tractor	TUG	2000	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU399 LPG	Baggage Tractor	TUG	2000	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU400 LPG	Baggage Tractor	TUG	2000	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU401 LPG	Baggage Tractor	TUG	2000	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
TG 1740	Baggage Tractor	TUG	2001	LPG	On-Airport Mobile Fueler	124	Yes - Works	7,889.0	05/22/2006	No
TG 1760	Baggage Tractor	TUG	2001	LPG	On-Airport Mobile Fueler	124	Yes - Works	8,373.0	05/22/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
TG 1750	Baggage Tractor	TUG	2001	LPG	On-Airport Mobile Fueler	124	Yes - Works	1.0	05/31/2006	No
461636	Baggage Tractor	TUG	2001	GASOLINE			Yes - Works			No
BTU389 LPG	Baggage Tractor	TUG	2004	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU402 GAS	Baggage Tractor	TUG	2005	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU403 GAS	Baggage Tractor	TUG	2005	Gasoline	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU404 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU405 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU406 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU407 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU408 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU409 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
BTU410 LPG	Baggage Tractor	TUG	2005	LPG	On-Airport Mobile Fueler	160	Yes - Doesn't Work			Yes - Other
7	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	14.0	11/01/2006	No
6	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	16.0	11/01/2006	no
3	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	18.0	11/01/2006	no
1	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	22.0	11/01/2006	no
8	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	23.0	11/01/2006	no
4	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	25.0	11/01/2006	no
5	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	31.0	11/01/2006	no
2	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	33.0	11/01/2006	no
8700	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	440.0	11/01/2006	no
8757	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	534.0	11/01/2006	no
8755	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	689.0	11/01/2006	no
8701	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	989.0	11/01/2006	no
8702	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	1,024.0	11/01/2006	no
13189	Baggage Tractor	tug		Diesel	On-Airport Mobile Fueler		Yes - Works	1,029.0	11/01/2006	no
8791	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	1,341.0	11/01/2006	no
13190	Baggage Tractor	tug		Diesel	On-Airport Mobile Fueler		Yes - Works	1,445.0	11/01/2006	no
13193	Baggage Tractor	tug		Diesel	On-Airport Mobile Fueler		Yes - Works	1,541.0	11/01/2006	no
13813	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	1,626.0	11/01/2006	no
8708	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	1,780.0	11/01/2006	no
8479	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	1,803.0	11/01/2006	no
8693	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	1,854.0	11/01/2006	no
13192	Baggage Tractor	tug		Diesel	On-Airport Mobile Fueler		Yes - Works	1,908.0	11/01/2006	no
8486	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,095.0	11/01/2006	no
8789	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,147.0	11/01/2006	no
3885	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,218.0	11/01/2006	no
8758	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,381.0	11/01/2006	no
8477	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,591.0	11/01/2006	no
8760	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,865.0	11/01/2006	no
8756	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,982.0	11/01/2006	no
8759	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	2,983.0	11/01/2006	no

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
8774	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	3,654.0	11/01/2006	no
8682	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	3,842.0	11/01/2006	no
8724	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	3,946.0	11/01/2006	no
8683	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	4,375.0	11/01/2006	no
13814	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	4,634.0	11/01/2006	no
8690	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	5,267.0	11/01/2006	no
8681	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	5,517.0	11/01/2006	no
8783	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	5,700.0	11/01/2006	no
14391	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	5,750.0	11/01/2006	no
8684	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	6,587.0	11/01/2006	no
8772	Baggage Tractor	tug		LPG	On-Airport Mobile Fueler		Yes - Works	9,726.0	11/01/2006	no
241850	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
325024	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
407610	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
429800	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
462392	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
493759	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
520072	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
537887	Baggage Tractor	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
484624	Baggage Tractor	TUG	1987	GASOLINE	On-Airport Stationary	93	Yes - Works	4,683.0	05/15/06	No
272279	Baggage Tractor	TUG	1989	LPG	On-Airport Stationary	93	Yes - Works	285.0	05/15/06	No
454258	Baggage Tractor	TUG	1989	DIESEL	On-Airport Stationary	93	Yes - Works	3,900.0	05/15/06	No
409570	Baggage Tractor	TUG	1989	DIESEL	On-Airport Stationary	93	Yes - Works	9,783.0	05/15/06	No
332934	Baggage Tractor	TUG	1990	LPG	On-Airport Stationary	93	Yes - Works	1,427.0	05/15/06	No
351596	Baggage Tractor	TUG	1990	LPG	On-Airport Stationary	93	Yes - Works	1,987.0	05/15/06	No
316582	Baggage Tractor	TUG	1990	LPG	On-Airport Stationary	93	Yes - Works	5,971.0	05/15/06	No
221578	Baggage Tractor	TUG	1993	LPG	On-Airport Stationary	93	Yes - Works	7,127.0	05/15/06	No
287000	Baggage Tractor	TUG	1993	LPG	On-Airport Stationary	93	Yes - Works	8,104.0	05/15/06	No
1 RT 01	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
2 RT 02	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
3 RT 03	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
4 RT 04	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
5 RT 05	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
7 RT 07	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
8 RT 09	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
9 RT 11	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
10 RT 12	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
11 RT 13	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
13 RT 15	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
14 RT 16	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
15 RT 17	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
16 RT 18	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
21 RT 45	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
23 RT 51	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
26 RT 55	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
27 RT 57	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
28 RT 58	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
29 RT 59	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
30 RT 123	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
31 RT 61	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
32 RT 62	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
33 RT 63	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
34 RT 64	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
35 RT 65	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
36 RT 66	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
37 RT 67	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
38 RT 68	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
49 RT 109	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
50 RT 112	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
51 RT 111	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
52 RT 10	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
64 RT 114	Baggage Tractor	Tug Inc MA	1995	Propane	On-Airport Mobile Fueler					No
39 RT 101	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
40 RT 102	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
41 RT 103	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
42 RT 104	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
43 RT 105	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
44 RT 106	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
47 RT 108	Baggage Tractor	Tug Inc MA	1996	Propane	On-Airport Mobile Fueler					No
17 RT 126	Baggage Tractor	Tug Inc MA	1997	Propane	On-Airport Mobile Fueler					No
48 RT 110	Baggage Tractor	Tug Inc MA	1997	Propane	On-Airport Mobile Fueler					No
53 RT 124	Baggage Tractor	Tug Inc MA	1997	Propane	On-Airport Mobile Fueler					No
54 RT 125	Baggage Tractor	Tug Inc MA	1997	Propane	On-Airport Mobile Fueler					No
55 RT 126	Baggage Tractor	Tug Inc MA	1997	Propane	On-Airport Mobile Fueler					No
388374	Baggage Tractor	WOLLARD	1999	DIESEL	On-Airport Stationary	85	Yes - Works	2,045.0	05/15/06	No
316092	Baggage Tractor	WOLLARD	1999	DIESEL	On-Airport Stationary	85	Yes - Works	7,198.0	05/15/06	No
545188	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	14,780.0	12/28/00	No
369145	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	773.0	11/18/01	No
520891	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	801.0	02/12/02	No
354879	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	720.0	04/19/06	No
324002	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	183.0	05/15/06	No
336602	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	3,234.0	05/18/06	No
384860	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	676.0	06/04/06	No
345793	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	975.0	06/08/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
310870	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	2,649.0	06/08/06	No
247632	Baggage Tractor		1995	ELEC	On-Airport Stationary		Yes - Works	1,986.0	06/11/06	No
401058	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	2,594.0	09/18/01	No
458094	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	4.0	01/30/02	No
318059	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	1,302.0	01/30/06	No
308749	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	3,101.0	04/19/06	No
552496	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	6,321.0	04/24/06	No
450114	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	95.0	05/26/06	No
303856	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	2,785.0	06/11/06	No
411796	Baggage Tractor		1996	ELEC	On-Airport Stationary		Yes - Works	3,624.0	06/11/06	No
359863	Baggage Tractor		1997	ELEC	On-Airport Stationary		Yes - Works	4,846.0	02/03/02	No
285509	Baggage Tractor		1997	ELEC	On-Airport Stationary		Yes - Works	3,395.0	02/13/02	No
457716	Baggage Tractor		1997	ELEC	On-Airport Stationary		Yes - Works	133.0	05/07/06	No
375564	Baggage Tractor		1997	ELEC	On-Airport Stationary		Yes - Works	5,271.0	06/08/06	No
445795	Baggage Tractor		2005	ELEC	On-Airport Stationary		Yes - Works	1,118.0	10/01/05	No
246141	Baggage Tractor		2005	ELEC	On-Airport Stationary		Yes - Works	1.0	05/18/06	No
424158	Baggage Tractor		2005	ELEC	On-Airport Stationary		Yes - Works	1.0	05/18/06	No
476385	Baggage Tractor		2005	ELEC	On-Airport Stationary		Yes - Works	1.0	05/18/06	No
261849	Belt Loader	CHARLATTE	1996	ELECTRIC		95				No
535241	Belt Loader	CHARLATTE	1996	ELECTRIC		95				No
250523	Belt Loader	CHARLATTE	1998	ELECTRIC		95				No
366016	Belt Loader	CHARLATTE	1998	ELECTRIC		95				No
388318	Belt Loader	CHARLATTE	1998	ELECTRIC		95				No
416920	Belt Loader	CHARLATTE	1998	ELECTRIC		95				No
494578	Belt Loader	CHARLATTE	1998	ELECTRIC		95				No
221200	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
231784	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
234850	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
244923	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
250999	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
273448	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
324478	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
327194	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
338443	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
343021	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
384657	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
396193	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
420602	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
424179	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
448301	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
459550	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
498568	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
504567	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
540603	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
546308	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
548464	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
549353	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
550053	Belt Loader	CHARLATTE	1999	ELECTRIC		95				No
245343	Belt Loader	CHARLATTE	2000	ELECTRIC		95				No
357546	Belt Loader	CHARLATTE	2000	ELECTRIC		95				No
447300	Belt Loader	CHARLATTE	2000	ELECTRIC		95				No
529053	Belt Loader	CHARLATTE	2000	ELECTRIC		95				No
BELTLOADER #2	Belt Loader	COCHRAN WESTERN	1979	gasoline	On-Airport Mobile Fueler		Yes - Works			No
532007	Belt Loader	DEUTZ	1997	DIESEL	On-Airport Stationary	60	Yes - Works	2,365.0	05/31/06	No
561505	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	4,795.0	01/13/02	No
494893	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	4,029.0	01/22/02	No
377307	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	4,300.0	01/29/02	No
227311	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	7,835.0	03/29/06	No
407799	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	6,870.0	05/20/06	No
386750	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	1,478.0	05/31/06	No
220164	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	1,518.0	06/06/06	No
541086	Belt Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	60	Yes - Works	2,151.0	06/08/06	No
321797	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	1,603.0	10/30/01	No
401632	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	5,243.0	02/28/06	No
505372	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	7,900.0	03/24/06	No
353605	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	7,983.0	04/01/06	No
381066	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	7,570.0	05/17/06	No
417452	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	9,637.0	05/24/06	No
319074	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	708.0	06/02/06	No
555471	Belt Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	8,229.0	06/12/06	No
546378	Belt Loader	FORD	1979	GAS	On-Airport Stationary		Yes - Works	3,357.0	01/29/02	No
33-016	Belt Loader	FORD	1983	LPG	On-Airport Stationary	120	Yes - Works	2,393.0	05/19/2006	
33-018	Belt Loader	FORD	1983	LPG	On-Airport Stationary	120	Yes - Works		05/19/2006	
33-073	Belt Loader	FORD	1990	LPG	On-Airport Stationary	120	Yes - Works	76.0	05/19/2006	
33-051	Belt Loader	FORD	1990	LPG	On-Airport Stationary	120	Yes - Works	100.0	05/19/2006	
256011	Belt Loader	LANTIS	1984	GASOLINE	On-Airport Mobile Fueler					No
532931	Belt Loader	LANTIS	1984	GASOLINE	On-Airport Mobile Fueler					No
BL 1040	Belt Loader	LANTIS		gasoline	On-Airport Mobile Fueler	124	Yes - Works	2,853.0	05/22/2006	No
356538	Belt Loader	NMC-WOLLARD	2000	DIESEL	On-Airport Mobile Fueler	41	Yes - Works			No
374654	Belt Loader	NMC-WOLLARD	2000	DIESEL	On-Airport Mobile Fueler	41	Yes - Works			No
484323	Belt Loader	NMC-WOLLARD	2000	DIESEL	On-Airport Mobile Fueler	41	Yes - Works			No
439404	Belt Loader	ONAN	1987	DIESEL	On-Airport Stationary		Yes - Works	929.0	02/05/02	No
526309	Belt Loader	ONAN	1988	DIESEL	On-Airport Stationary	45	Yes - Works	1,488.0	01/15/02	No
BTL2	Belt Loader	S & S TUG	2003	gasoline	On-Airport Mobile Fueler	95	Yes - Works	872.0	06/13/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
15249	Belt Loader	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16263	Belt Loader	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15282	Belt Loader	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15283	Belt Loader	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15284	Belt Loader	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15285	Belt Loader	S&S	2001	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15413	Belt Loader	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15414	Belt Loader	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15415	Belt Loader	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
290339	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	61.0	05/15/06	No
307055	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	1,013.0	05/15/06	No
562023	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,050.0	05/15/06	No
335097	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,456.0	05/15/06	No
434007	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,626.0	05/15/06	No
399147	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,710.0	05/15/06	No
263074	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,834.0	05/15/06	No
437262	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,851.0	05/15/06	No
436716	Belt Loader	SS TUG	2001	ELECTRIC		25	Yes - Works	6,856.0	05/15/06	No
BTL1	Belt Loader	TLD	1990	diesel	On-Airport Mobile Fueler	95	Yes - Doesn't Work			No
466151	Belt Loader	TUG	1990	GASOLINE	On-Airport Mobile Fueler					No
BELTLOADER #1	Belt Loader	TUG	1992	gasoline	On-Airport Mobile Fueler		Yes - Works	930.8	06/11/2006	No
413644	Belt Loader	TUG	1992	GASOLINE		95				No
560994	Belt Loader	TUG	1992	GASOLINE		95				No
440398	Belt Loader	TUG	1993	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,402.0	06/02/06	No
477022	Belt Loader	TUG	1993	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	6,336.0	06/02/06	No
331898	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	578.0	06/02/06	No
247282	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	1,760.0	06/02/06	No
254254	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	2,193.0	06/02/06	No
318577	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,891.0	06/02/06	No
463568	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,645.0	06/02/06	No
268793	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,662.0	06/02/06	No
456561	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,988.0	06/02/06	No
359030	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	5,119.0	06/02/06	No
295904	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	5,370.0	06/02/06	No
326865	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	5,440.0	06/02/06	No
495250	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	5,969.0	06/02/06	No
399483	Belt Loader	TUG	1994	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	9,142.0	06/02/06	No
272230	Belt Loader	TUG	1994	GASOLINE		95	Yes - Works			No
15185	Belt Loader	TUG	1994	LPG	On-Airport Mobile Fueler	170	Yes - Works			
302568	Belt Loader	TUG	1995	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	2,610.0	06/02/06	No
453698	Belt Loader	TUG	1995	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,399.0	06/02/06	No
541751	Belt Loader	TUG	1995	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,832.0	06/02/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
329546	Belt Loader	TUG	1995	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	9,424.0	06/02/06	No
CBL151	Belt Loader	TUG	1995	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL255	Belt Loader	TUG	1995	Gasoline	On-Airport Mobile Fueler	140	No			No
541149	Belt Loader	TUG	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	2,094.0	06/02/06	No
223559	Belt Loader	TUG	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	2,933.0	06/02/06	No
550480	Belt Loader	TUG	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	3,297.0	06/02/06	No
538440	Belt Loader	TUG	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,618.0	06/02/06	No
305823	Belt Loader	TUG	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	4,936.0	06/02/06	No
235956	Belt Loader	TUG	1996	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	5,737.0	06/02/06	No
383446	Belt Loader	TUG	1996	GASOLINE		95	Yes - Works			No
15194	Belt Loader	TUG	1996	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15204	Belt Loader	TUG	1996	LPG	On-Airport Mobile Fueler	170	Yes - Works			
BL 1630	Belt Loader	TUG	1997	gasoline	On-Airport Mobile Fueler	124	Yes - Works	7,469.0	05/22/2006	No
246316	Belt Loader	TUG	1997	GASOLINE	On-Airport Mobile Fueler					No
307790	Belt Loader	TUG	1997	GASOLINE	On-Airport Mobile Fueler					No
417354	Belt Loader	TUG	1997	GASOLINE	On-Airport Mobile Fueler					No
448686	Belt Loader	TUG	1997	GASOLINE	On-Airport Mobile Fueler					No
460180	Belt Loader	TUG	1997	GASOLINE	On-Airport Mobile Fueler					No
544138	Belt Loader	TUG	1997	GASOLINE	On-Airport Mobile Fueler					No
15207	Belt Loader	TUG	1997	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15208	Belt Loader	TUG	1997	LPG	On-Airport Mobile Fueler	170	Yes - Works			
230636	Belt Loader	TUG	1998	GASOLINE		95	Yes - Works			No
15231	Belt Loader	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15234	Belt Loader	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15235	Belt Loader	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15236	Belt Loader	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15237	Belt Loader	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15238	Belt Loader	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
458486	Belt Loader	TUG	1999	GASOLINE		95	Yes - Works			No
15240	Belt Loader	TUG	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15241	Belt Loader	TUG	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
CBL152	Belt Loader	TUG	2000	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL153	Belt Loader	TUG	2000	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL154	Belt Loader	TUG	2000	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL155	Belt Loader	TUG	2000	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL156	Belt Loader	TUG	2000	Gasoline	On-Airport Mobile Fueler	140	No			No
15262	Belt Loader	TUG	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
CBL 149	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL 150	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL 157	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL 160	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL 161	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
CBL147	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No
CBL148	Belt Loader	TUG	2005	Gasoline	On-Airport Mobile Fueler	140	No			No
15416	Belt Loader	TUG	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15417	Belt Loader	TUG	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
236404	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
264397	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
310282	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
312732	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
379533	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
402493	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
465584	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
485156	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
504686	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
527016	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
530376	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
531349	Belt Loader	TUG		GASOLINE	On-Airport Mobile Fueler	95				No
265195	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	17.0	05/15/06	No
360836	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	85.0	05/15/06	No
508256	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	365.0	05/15/06	No
400113	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	449.0	05/15/06	No
231315	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	496.0	05/15/06	No
448133	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	496.0	05/15/06	No
400421	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	662.0	05/15/06	No
437815	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,033.0	05/15/06	No
244818	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,088.0	05/15/06	No
430234	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,551.0	05/15/06	No
466494	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,980.0	05/15/06	No
432194	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,584.0	05/15/06	No
415660	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,567.0	05/15/06	No
526631	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,044.0	05/15/06	No
378686	Belt Loader	TUG	1995	ELECTRIC	On-Airport Stationary	85	Yes - Works	7,647.0	05/15/06	No
306229	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	2.0	05/15/06	No
475734	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	249.0	05/15/06	No
504672	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,302.0	05/15/06	No
275527	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,087.0	05/15/06	No
343105	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,495.0	05/15/06	No
375102	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,890.0	05/15/06	No
523936	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,892.0	05/15/06	No
445571	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,364.0	05/15/06	No
544285	Belt Loader	TUG	1999	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,187.0	05/15/06	No
298151	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	30.0	05/15/06	No
407561	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	417.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
524475	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	652.0	05/15/06	No
341439	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	752.0	05/15/06	No
560630	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	843.0	05/15/06	No
478212	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,034.0	05/15/06	No
532728	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,057.0	05/15/06	No
289842	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,240.0	05/15/06	No
235655	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,263.0	05/15/06	No
321349	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,553.0	05/15/06	No
380184	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	1,996.0	05/15/06	No
500913	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,057.0	05/15/06	No
297745	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,229.0	05/15/06	No
412097	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,261.0	05/15/06	No
300825	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,576.0	05/15/06	No
538587	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,657.0	05/15/06	No
295323	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,662.0	05/15/06	No
305312	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,695.0	05/15/06	No
433601	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,717.0	05/15/06	No
539161	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,761.0	05/15/06	No
419167	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	2,923.0	05/15/06	No
547400	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,215.0	05/15/06	No
388108	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,522.0	05/15/06	No
227458	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	3,579.0	05/15/06	No
421981	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	4,253.0	05/15/06	No
296415	Belt Loader	TUG	2000	ELECTRIC	On-Airport Stationary	85	Yes - Works	5,220.0	05/15/06	No
BL18	Belt Loader	Tug 660	1993		On-Airport Mobile Fueler					
BL13	Belt Loader	Tug 660	1994	Gasoline	On-Airport Mobile Fueler					
BL15	Belt Loader	Tug 660	1994		On-Airport Mobile Fueler					
BL22	Belt Loader	Tug 660	1994		On-Airport Mobile Fueler					
BL16	Belt Loader	Tug 660	1997	Gasoline	On-Airport Mobile Fueler					
BL17	Belt Loader	Tug 660	1997		On-Airport Mobile Fueler					
BL21	Belt Loader	Tug 660	1997		On-Airport Mobile Fueler					
BL12	Belt Loader	Tug 660	1999	Gasoline	On-Airport Mobile Fueler					
BL34	Belt Loader	Tug 660	2000	Diesel	On-Airport Mobile Fueler					
BL35	Belt Loader	Tug 660	2000	Diesel	On-Airport Mobile Fueler					
BL36	Belt Loader	Tug 660	2000		On-Airport Mobile Fueler					
BL2	Belt Loader	Tug 661	1989	Gasoline	On-Airport Mobile Fueler					
226695	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
243551	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
290276	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
312480	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
350245	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
383089	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
400372	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
450037	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
461223	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
550088	Belt Loader	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
BL23	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL24	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL26	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL28	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL31	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL32	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL33	Belt Loader	WASP A01771D-3305	1998	Gasoline	On-Airport Mobile Fueler					
BL42	Belt Loader	WASP A01771D-3305	1999	Diesel	On-Airport Mobile Fueler					
BL43	Belt Loader	WASP A01771D-3305	1999	Diesel	On-Airport Mobile Fueler					
BL25	Belt Loader	WASP A01771D-3305	1999	Gasoline	On-Airport Mobile Fueler					
BL27	Belt Loader	WASP A01771D-3305	1999	Gasoline	On-Airport Mobile Fueler					
BL29	Belt Loader	WASP A01771D-3305	1999	Gasoline	On-Airport Mobile Fueler					
BL30	Belt Loader	WASP A01771D-3305	1999	Gasoline	On-Airport Mobile Fueler					
BL44	Belt Loader	WASP A01771D-3305	2005	Gasoline	On-Airport Mobile Fueler					
BL45	Belt Loader	WASP A01771D-3305	2005	Gasoline	On-Airport Mobile Fueler					
BL46	Belt Loader	WASP A01771D-3305	2005	Gasoline	On-Airport Mobile Fueler					
BL47	Belt Loader	WASP A01771D-3305	2005	Gasoline	On-Airport Mobile Fueler					
431179	Belt Loader	WOLLARD	1986	DIESEL	On-Airport Mobile Fueler	41	Yes - Works			No
491078	Belt Loader	WOLLARD	1986	DIESEL	On-Airport Mobile Fueler	41	Yes - Works			No
483112	Belt Loader	WOLLARD	1988	DIESEL	On-Airport Mobile Fueler	41	Yes - Works			No
BL 1230	Belt Loader	WOLLARD	1990	LPG	On-Airport Stationary	124	Yes - Works	3,174.0	05/22/2006	No
323127	Belt Loader		2006		On-Airport Stationary		Yes - Works	21.0	06/08/06	No
8	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	7.0	11/01/2006	No
7	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	11.0	11/01/2006	No
1	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	14.0	11/01/2006	No
4	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	15.0	11/01/2006	No
5	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	18.0	11/01/2006	No
3	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	24.0	11/01/2006	No
2	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	30.0	11/01/2006	No
6	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	31.0	11/01/2006	No
8780	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	660.0	11/01/2006	No
8770	Belt Loader			LPG	On-Airport Mobile Fueler		Yes - Works	1,458.0	11/01/2006	No
8482	Belt Loader			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,959.0	11/01/2006	No
8480	Belt Loader			Gasoline	On-Airport Mobile Fueler		Yes - Works	2,877.0	11/01/2006	No
8727	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	3,974.0	11/01/2006	No
8786	Belt Loader			Gasoline	On-Airport Mobile Fueler		Yes - Works	4,038.0	11/01/2006	No
3489	Belt Loader			LPG	On-Airport Mobile Fueler		Yes - Works	4,092.0	11/01/2006	No
8715	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	4,748.0	11/01/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
8763	Belt Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	5,065.0	11/01/2006	No
12127	Belt Loader			LPG	On-Airport Mobile Fueler		Yes - Works	7,654.0	11/01/2006	No
8785	Belt Loader			Gasoline	On-Airport Mobile Fueler		Yes - Works	7,901.0	11/01/2006	No
27772	Belt Loader			LPG	On-Airport Mobile Fueler		Yes - Works	8,004.0	11/01/2006	No
BOB2	Bobtail	EAGLE	1983	gasoline	On-Airport Mobile Fueler	235	Yes - Works	#######	06/13/2006	Yes - Other
BOB4	Bobtail	EAGLE	1989	gasoline	On-Airport Mobile Fueler	235	Yes - Works	79,999.0	06/13/2006	Yes - Other
387086	Bobtail	EAGLE	1990	GASOLINE	On-Airport Mobile Fueler					Yes - Other
BOB5	Bobtail	EAGLE	2002	gasoline	On-Airport Mobile Fueler	235	Yes - Works	23,841.0	06/13/2006	Yes - Other
26-051	Bobtail	FORD	1971	gasoline	On-Airport Stationary	140	Yes - Works	0.1	05/19/2006	
461986	Bobtail	FORD	1975	GASOLINE		210				Yes - Other
262955	Bobtail	FORD	1981	GASOLINE		210				Yes - Other
26-227	Bobtail	FORD	1981	diesel	On-Airport Stationary	160	Yes - Works	2,268.0	05/19/2006	
CTT279	Bobtail	FORD	1983	Gasoline	On-Airport Mobile Fueler	120	Yes - Works	2,300.7		No
26-315	Bobtail	FORD	1985	gasoline	On-Airport Stationary	140	Yes - Works	9,261.0	05/19/2006	
407575	Bobtail	FORD	1986	GASOLINE		175				Yes - Other
CTT278	Bobtail	FORD	1990	Gasoline	On-Airport Mobile Fueler	450	Yes - Works	5,801.0		No
26-316	Bobtail	FORD	1992	diesel	On-Airport Stationary	160	Yes - Works	5,098.0	05/19/2006	
CTT280	Bobtail	FORD	1994	Gasoline	On-Airport Mobile Fueler	120	Yes - Works	68.1		No
CTT285	Bobtail	FORD	1995	Gasoline	On-Airport Mobile Fueler	120	Yes - Works	6,895.5		No
CTT284	Bobtail	FORD	1995	Gasoline	On-Airport Mobile Fueler	120	Yes - Works	7,294.1		No
CTT281	Bobtail	FORD	1997	Gasoline	On-Airport Mobile Fueler	120	Yes - Works	4,807.4		No
228928	Bobtail	FORD	1997	GASOLINE		175				Yes - Other
546238	Bobtail	FORD	1997	GASOLINE		175				Yes - Other
375907	Bobtail	FORD		LPG	On-Airport Mobile Fueler	95				No
539791	Bobtail	FORD		LPG	On-Airport Mobile Fueler	95				No
17171	Bobtail	NMC	1998	gasoline	On-Airport Mobile Fueler		Yes - Works			
17172	Bobtail	NMC	1999	gasoline	On-Airport Mobile Fueler		Yes - Works			
17176	Bobtail	NMC	1999	gasoline	On-Airport Mobile Fueler		Yes - Works			
17184	Bobtail	NMC	2000	gasoline	On-Airport Mobile Fueler		Yes - Works			
17185	Bobtail	NMC	2000	gasoline	On-Airport Mobile Fueler		Yes - Works			
17187	Bobtail	NMC	2001	gasoline	On-Airport Mobile Fueler		Yes - Works			
17205	Bobtail	TUG	2004	gasoline	On-Airport Mobile Fueler		Yes - Works			
2306	Bobtail			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,427.0	11/01/2006	No
10490	Bobtail			Diesel	On-Airport Mobile Fueler		Yes - Works	3,475.0	11/01/2006	Yes - Other
8707	Bobtail			Gasoline	On-Airport Mobile Fueler		Yes - Works	5,124.0	11/01/2006	Yes - Other
8718	Bobtail			Diesel	On-Airport Mobile Fueler		Yes - Works	8,534.0	11/01/2006	Yes - Other
294000	Cargo Loader	AMMFG	1980	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
32-146	Cargo Loader	CUMMINS	2000	diesel	On-Airport Mobile Fueler	200	Yes - Works	310.0	05/19/2006	
377573	Cargo Loader	DEUTZ	1996	DIESEL	On-Airport Stationary	67	Yes - Works	5,345.0	02/13/02	No
283829	Cargo Loader	DEUTZ	1996	DIESEL	On-Airport Stationary	67	Yes - Works	9,825.0	04/18/06	No
32-145	Cargo Loader	DEUTZ	1996	diesel	On-Airport Mobile Fueler	170	Yes - Works	1,539.0	05/19/2006	
379848	Cargo Loader	DEUTZ	1997	DIESEL	On-Airport Stationary	67	Yes - Works	9,016.0	01/23/02	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
394828	Cargo Loader	DEUTZ	1997	DIESEL	On-Airport Stationary	67	Yes - Works	9,836.0	01/24/02	No
494592	Cargo Loader	DEUTZ	1997	DIESEL	On-Airport Stationary	67	Yes - Works	10,745.0	01/31/02	No
295428	Cargo Loader	DEUTZ	1997	DIESEL	On-Airport Stationary	67	Yes - Works	6,923.0	02/03/06	No
298263	Cargo Loader	DEUTZ	1997	DIESEL	On-Airport Stationary	67	Yes - Works	12,911.0	04/30/06	No
263067	Cargo Loader	DEUTZ	1998	DIESEL	On-Airport Stationary	67	Yes - Works	6,191.0	11/03/01	No
32-160	Cargo Loader	DEUTZ	1998	diesel	On-Airport Mobile Fueler	250	Yes - Works	209.0	05/19/2006	
404803	Cargo Loader	DEUTZ	1999	DIESEL	On-Airport Stationary	87	Yes - Works	9,790.0	03/24/06	No
504392	Cargo Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	67	Yes - Works	1,722.0	01/15/02	No
396284	Cargo Loader	DEUTZ	2000	DIESEL	On-Airport Stationary	67	Yes - Works	2,045.0	01/22/02	No
394359	Cargo Loader	DEUTZ	2002	DIESEL	On-Airport Stationary	87	Yes - Works	3,398.0	04/01/06	No
LDL	Cargo Loader	FMC	1979	diesel	On-Airport Mobile Fueler		Yes - Works	5,219.4	06/11/2006	No
132618	Cargo Loader	FMC	1979	diesel	On-Airport Mobile Fueler		Yes - Works			
MDL1	Cargo Loader	FMC	1981	diesel	On-Airport Mobile Fueler	125	Yes - Works	10,216.0	06/13/2006	No
13108	Cargo Loader	FMC	1986	diesel	On-Airport Mobile Fueler		Yes - Works			
MDL2	Cargo Loader	FMC	1989	diesel	On-Airport Mobile Fueler	130	Yes - Works	6,070.0	06/13/2006	No
LDL	Cargo Loader	FMC	1990	diesel	On-Airport Mobile Fueler		Yes - Works	6,855.0	06/11/2006	No
13131	Cargo Loader	FMC	1990	diesel	On-Airport Mobile Fueler		Yes - Works			
301560	Cargo Loader	FMC	1993	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	1,174.0	05/15/06	No
344904	Cargo Loader	FMC	1993	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	3,351.0	05/15/06	No
LDL656 CDR	Cargo Loader	FMC	1995	Diesel	On-Airport Mobile Fueler	200	Yes - Works	765.0		No
LDL655 CDR	Cargo Loader	FMC	1995	Diesel	On-Airport Mobile Fueler	200	Yes - Works	2,450.2		No
13157	Cargo Loader	FMC	1995	diesel	On-Airport Mobile Fueler		Yes - Works			
13166	Cargo Loader	FMC	1995	diesel	On-Airport Mobile Fueler		Yes - Works			
LDL1	Cargo Loader	FMC	1996	diesel	On-Airport Mobile Fueler	87	Yes - Works	10,223.0	06/13/2006	No
LDL650 CDR	Cargo Loader	FMC	1996	Diesel	On-Airport Mobile Fueler	200	Yes - Works	1,850.0		No
LDL654 CDR	Cargo Loader	FMC	1996	Diesel	On-Airport Mobile Fueler	200	Yes - Works	13,092.2		No
13174	Cargo Loader	FMC	1996	diesel	On-Airport Mobile Fueler		Yes - Works			
314664	Cargo Loader	FMC	1997	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	4,449.0	05/15/06	No
LDL633 CDR	Cargo Loader	FMC	1997	Diesel	On-Airport Mobile Fueler	200	Yes - Works	8,216.0		No
13175	Cargo Loader	FMC	1997	diesel	On-Airport Mobile Fueler		Yes - Works			
13192	Cargo Loader	FMC	1998	diesel	On-Airport Mobile Fueler		Yes - Works			
13193	Cargo Loader	FMC	1998	diesel	On-Airport Mobile Fueler		Yes - Works			
370349	Cargo Loader	FMC	1999	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	4,004.0	05/15/06	No
CL 2540	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler	165	Yes - Works	4,547.0	05/22/2006	No
MDL	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler	192	Yes - Works	3,776.2	06/11/2006	No
13194	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
13195	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
13196	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
13197	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
13201	Cargo Loader	FMC	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
262192	Cargo Loader	FMC	2000	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	3,456.0	05/15/06	No
CL 2670	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler	165	Yes - Works	3,323.0	05/22/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
CL 2680	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler	165	Yes - Works	4,241.0	05/22/2006	No
13222	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler		Yes - Works			
13223	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler		Yes - Works			
13226	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler		Yes - Works			
13209	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler		Yes - Works			
13210	Cargo Loader	FMC	2000	diesel	On-Airport Mobile Fueler		Yes - Works			
13228	Cargo Loader	FMC	2001	diesel	On-Airport Mobile Fueler		Yes - Works			
13232	Cargo Loader	FMC	2001	diesel	On-Airport Mobile Fueler		Yes - Works			
MDL800	Cargo Loader	FMC	2005	Diesel	On-Airport Mobile Fueler	250	Yes - Works	2,595.0		No
13301	Cargo Loader	FMC	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
13301-A	Cargo Loader	FMC	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
MDL801	Cargo Loader	FMC	2006	Diesel	On-Airport Mobile Fueler	250	Yes - Works	1,338.0		No
502565	Cargo Loader	FMC	1991	DIESEL	On-Airport Stationary	102	Yes - Works	951.0	05/15/06	No
259700	Cargo Loader	FMC	1991	DIESEL	On-Airport Stationary	102	Yes - Works	3,137.0	05/15/06	No
265685	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	5,269.0	05/15/06	No
465654	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	5,389.0	05/15/06	No
304969	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	5,460.0	05/15/06	No
530222	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	5,930.0	05/15/06	No
439586	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	7,861.0	05/15/06	No
293741	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	8,448.0	05/15/06	No
331527	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	8,626.0	05/15/06	No
533596	Cargo Loader	FMC	1996	DIESEL	On-Airport Stationary	102	Yes - Works	9,371.0	05/15/06	No
235410	Cargo Loader	FMC	1997	DIESEL	On-Airport Stationary	102	Yes - Works	3,012.0	05/15/06	No
367801	Cargo Loader	FMC	1997	DIESEL	On-Airport Stationary	102	Yes - Works	6,433.0	05/15/06	No
409395	Cargo Loader	FMC	1997	DIESEL	On-Airport Stationary	102	Yes - Works	7,191.0	05/15/06	No
381255	Cargo Loader	FMC	1997	DIESEL	On-Airport Stationary	102	Yes - Works	8,571.0	05/15/06	No
524923	Cargo Loader	FMC	1997	DIESEL	On-Airport Stationary	102	Yes - Works	9,226.0	05/15/06	No
377041	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	5,761.0	05/15/06	No
257768	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	7,338.0	05/15/06	No
442631	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	7,472.0	05/15/06	No
377202	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	7,667.0	05/15/06	No
563829	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	7,672.0	05/15/06	No
491624	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	8,156.0	05/15/06	No
472934	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	8,257.0	05/15/06	No
513842	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	8,450.0	05/15/06	No
402409	Cargo Loader	FMC	1998	DIESEL	On-Airport Stationary	102	Yes - Works	8,791.0	05/15/06	No
226611	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
234290	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
245623	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
261611	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
411215	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
516677	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
522571	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
557116	Cargo Loader	FMCXX	1989	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
379155	Cargo Loader	FMCXX	1995	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
482062	Cargo Loader	FMCXX	1995	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
558089	Cargo Loader	FMCXX	1995	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
326508	Cargo Loader	FMCXX	1996	DIESEL	On-Airport Mobile Fueler	133	Yes - Works			No
359317	Cargo Loader	FMCXX	1997	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
222579	Cargo Loader	FMCXX	1997	DIESEL	On-Airport Mobile Fueler	133	Yes - Works			No
482713	Cargo Loader	FMCXX	1997	DIESEL	On-Airport Mobile Fueler	133	Yes - Works			No
497210	Cargo Loader	FMCXX	1997	DIESEL	On-Airport Mobile Fueler	133	Yes - Works			No
542857	Cargo Loader	FMCXX	1998	DIESEL	On-Airport Mobile Fueler	165	Yes - Works			No
553511	Cargo Loader	FMCXX	1998	DIESEL	On-Airport Mobile Fueler	165	Yes - Works			No
258125	Cargo Loader	FMCXX	2001	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
326879	Cargo Loader	FMCXX	2001	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
551327	Cargo Loader	FMCXX	2001	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
380618	Cargo Loader	FMCXX	2001	DIESEL	On-Airport Mobile Fueler	165	Yes - Works			No
32-100	Cargo Loader	GM	1975	diesel	On-Airport Mobile Fueler	200	Yes - Works	4,687.0	05/19/2006	
32-147	Cargo Loader	GM	1979	diesel	On-Airport Mobile Fueler	200	Yes - Works	5,254.0	05/19/2006	
32-045	Cargo Loader	GM	1980	diesel	On-Airport Mobile Fueler	160	Yes - Works	1,796.0	05/19/2006	
32-021	Cargo Loader	GM	1980	diesel	On-Airport Mobile Fueler	160	Yes - Works		05/19/2006	
366506	Cargo Loader	LANTIS	1984	DIESEL		95				No
531937	Cargo Loader	LANTIS	1984	DIESEL		95				No
373779	Cargo Loader	LANTIS	1984	DIESEL		120				No
245735	Cargo Loader	LANTIS	1988	DIESEL		86				No
338135	Cargo Loader	LANTIS	1988	DIESEL		86				No
345681	Cargo Loader	LANTIS	1988	DIESEL		86				No
394492	Cargo Loader	LANTIS	1988	DIESEL		86				No
452732	Cargo Loader	LANTIS	1988	DIESEL		86				No
546917	Cargo Loader	LANTIS	1988	DIESEL		86				No
383516	Cargo Loader	LANTIS	1989	DIESEL		86				No
266665	Cargo Loader	LANTIS	1990	DIESEL		120				No
528360	Cargo Loader	LANTIS	1990	DIESEL	On-Airport Mobile Fueler					No
237440	Cargo Loader	LANTIS	1991	DIESEL		86				No
336616	Cargo Loader	LANTIS	1991	DIESEL		86				No
260253	Cargo Loader	LANTIS	1992	DIESEL		86				No
284788	Cargo Loader	LANTIS	1992	DIESEL		86				No
270543	Cargo Loader	LANTIS	1994	DIESEL	On-Airport Mobile Fueler					No
274911	Cargo Loader	LANTIS	1994	DIESEL	On-Airport Mobile Fueler					No
337988	Cargo Loader	LANTIS	1994	DIESEL	On-Airport Mobile Fueler					No
382130	Cargo Loader	LANTIS	1994	DIESEL	On-Airport Mobile Fueler					No
415723	Cargo Loader	LANTIS	1994	DIESEL	On-Airport Mobile Fueler					No
LDL653 Lantis	Cargo Loader	Lantis	1995	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	2,157.2		No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
LDL642 Lantis	Cargo Loader	Lantis	1995	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	9,272.5		No
LDL641 Lantis	Cargo Loader	Lantis	1995	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	11,445.9		No
LDL649 Lantis	Cargo Loader	Lantis	1996	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	4,658.9		No
LDL639 Lantis	Cargo Loader	Lantis	1996	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	6,954.4		No
LDL645 Lantis	Cargo Loader	Lantis	1996	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	11,888.9		No
424571	Cargo Loader	LANTIS	1996	DIESEL		102				No
279363	Cargo Loader	LANTIS	1998	DIESEL		102				No
MDL802	Cargo Loader	Lantis	1999	Diesel	On-Airport Mobile Fueler	250	Yes - Works	2,477.0		No
LDL637 Lantis	Cargo Loader	Lantis	2001	Diesel	On-Airport Mobile Fueler	200	Yes - Works	776.1		No
LDL636 Lantis	Cargo Loader	Lantis	2001	Diesel	On-Airport Mobile Fueler	200	Yes - Works	9,047.0		No
LDL657 CDR	Cargo Loader	Lantis	2006	Diesel	On-Airport Mobile Fueler	200	Yes - Works	573.7		No
32-068	Cargo Loader	PERKINS	1992	diesel	On-Airport Mobile Fueler	160	Yes - Works	4,810.0	05/19/2006	
32-064	Cargo Loader	PERKINS	1992	diesel	On-Airport Mobile Fueler	160	Yes - Works	7,334.0	05/19/2006	
32-087	Cargo Loader	PERKINS	1996	diesel	On-Airport Mobile Fueler	160	Yes - Works	112.0	05/19/2006	
32-135	Cargo Loader	PERKINS	1999	diesel	On-Airport Mobile Fueler	170	Yes - Works	202.0	05/19/2006	
MDL3	Cargo Loader	TLD	2002	diesel	On-Airport Mobile Fueler	133	Yes - Works	4,215.0	06/13/2006	No
350056	Cargo Loader	WASP	1995	GASOLINE		102				No
526211	Cargo Loader	WASP	2001	DIESEL		102				No
10841	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	554.0	11/01/2006	
8020	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	925.0	11/01/2006	
3462	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	927.0	11/01/2006	
8762	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	1,190.0	11/01/2006	
12142	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	2,515.0	11/01/2006	
8767	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	2,798.0	11/01/2006	
12141	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	2,823.0	11/01/2006	
8720	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	3,029.0	11/01/2006	
8747	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	4,004.0	11/01/2006	
8686	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	4,033.0	11/01/2006	
8766	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	6,767.0	11/01/2006	
8710	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	9,118.0	11/01/2006	
8754	Cargo Loader			Diesel	On-Airport Mobile Fueler		Yes - Works	10,354.0	11/01/2006	
814	Cargo Tractor	Clark Lift	2000	LPG	Off Airport		Yes - Works		06/15/2006	No
815	Cargo Tractor	Clark Lift	2000	LPG	Off Airport		Yes - Works		06/15/2006	No
816	Cargo Tractor	Clark Lift	2000	LPG	Off Airport		Yes - Works		06/15/2006	No
817	Cargo Tractor	Clark Lift	2000	LPG	Off Airport		Yes - Works		06/15/2006	No
26-141	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	242.0	05/19/2006	
26-653	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	251.0	05/19/2006	
26-142	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	311.0	05/19/2006	
26-151	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	322.0	05/19/2006	
26-626	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	361.0	05/19/2006	
26-621	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	417.0	05/19/2006	
26-651	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	498.0	05/19/2006	

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
26-143	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	1,601.0	05/19/2006	
26-138	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	1,914.0	05/19/2006	
26-145	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	1,954.0	05/19/2006	
26-152	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	2,025.0	05/19/2006	
26-139	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	5,137.0	05/19/2006	
26-357	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	5,684.0	05/19/2006	
26-652	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	6,090.0	05/19/2006	
26-144	Cargo Tractor	FORD	1992	LPG	On-Airport Stationary	140	Yes - Works	7,864.0	05/19/2006	
26-022	Cargo Tractor	FORD	2001	LPG	On-Airport Stationary	140	Yes - Works	5,890.0	05/19/2006	
CTV7	Cargo Tractor	Ford F700	1987	Gasoline	On-Airport Mobile Fueler					
CTV5	Cargo Tractor	Ford F700	1988	Diesel	On-Airport Mobile Fueler					
CTV1	Cargo Tractor	Ford F700	1988	Gasoline	On-Airport Mobile Fueler					
CTV10	Cargo Tractor	Ford F700	1988	Gasoline	On-Airport Mobile Fueler					
CTV8	Cargo Tractor	Ford F700	1989	Diesel	On-Airport Mobile Fueler					
CTV13	Cargo Tractor	Ford F700	1989	Gasoline	On-Airport Mobile Fueler					
809	Cargo Tractor	Harlan Corp	1994	diesel	Off Airport		Yes - Works	8,343.0	06/15/2006	No
LDL638 Lantis	Cargo Tractor	Lantis	1996	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	6,925.0		No
17168	Cargo Tractor	NMC	1998	diesel	On-Airport Mobile Fueler	170	Yes - Works			
17169	Cargo Tractor	NMC	1998	diesel	On-Airport Mobile Fueler	170	Yes - Works			
17182	Cargo Tractor	NMC	2000	diesel	On-Airport Mobile Fueler	170	Yes - Works			
129	Cargo Tractor	Northwestern	1994	LPG	Off Airport		Yes - Works	1,291.0	06/15/2006	No
16444	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16445	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
15446	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16447	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16448	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16449	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16450	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16451	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16452	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16453	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16454	Cargo Tractor	S&S	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16462	Cargo Tractor	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16453	Cargo Tractor	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16454	Cargo Tractor	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16480	Cargo Tractor	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16481	Cargo Tractor	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16483	Cargo Tractor	S&S	2000	LPG	On-Airport Mobile Fueler	170	Yes - Works			
17192	Cargo Tractor	S&S	2003	diesel	On-Airport Mobile Fueler	170	Yes - Works			
16779	Cargo Tractor	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16780	Cargo Tractor	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16781	Cargo Tractor	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
16782	Cargo Tractor	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16783	Cargo Tractor	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16784	Cargo Tractor	S&S	2005	LPG	On-Airport Mobile Fueler	170	Yes - Works			
407351	Cargo Tractor	S&S TUG	2004	GASOLINE		101				No
512701	Cargo Tractor	S&S TUG	2004	GASOLINE		101				No
TUG #15	Cargo Tractor	S&W TUG	2001	diesel	On-Airport Mobile Fueler		Yes - Works	3,219.4	06/11/2006	No
TUG #16	Cargo Tractor	S&W TUG	2001	diesel	On-Airport Mobile Fueler		Yes - Works	3,281.7	06/11/2006	No
TUG #14	Cargo Tractor	S&W TUG	2001	diesel	On-Airport Mobile Fueler		Yes - Works	3,283.6	06/11/2006	No
TUG #17	Cargo Tractor	S&W TUG	2001	diesel	On-Airport Mobile Fueler		Yes - Works	32,189.6	06/11/2006	No
TUG #18	Cargo Tractor	S&W TUG	2004	diesel	On-Airport Mobile Fueler		Yes - Works	563.6	06/11/2006	No
TUG #19	Cargo Tractor	S&W TUG	2004	diesel	On-Airport Mobile Fueler		Yes - Works	611.4	06/11/2006	No
331366	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	150.0	05/15/06	No
317100	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	1,021.0	05/15/06	No
491358	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	3,440.0	05/15/06	No
485443	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	3,868.0	05/15/06	No
249956	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	4,520.0	05/15/06	No
500262	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	4,777.0	05/15/06	No
508683	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	5,819.0	05/15/06	No
367822	Cargo Tractor	SS TUG	1999	LPG	On-Airport Stationary	95	Yes - Works	6,217.0	05/15/06	No
TUG #11	Cargo Tractor	STEWART & STEVENSON	1989	gasoline	On-Airport Mobile Fueler		Yes - Works	1,061.0	06/11/2006	No
TUG #12	Cargo Tractor	STEWART & STEVENSON	1989	gasoline	On-Airport Mobile Fueler		Yes - Works	2,712.3	06/11/2006	No
TUG #13	Cargo Tractor	STEWART & STEVENSON	1990	gasoline	On-Airport Mobile Fueler		Yes - Works	292.9	06/11/2006	No
TUG #2	Cargo Tractor	STEWART & STEVENSON	1991	gasoline	On-Airport Mobile Fueler		Yes - Works	279.8	06/11/2006	No
TUG #1	Cargo Tractor	STEWART & STEVENSON	1991	gasoline	On-Airport Mobile Fueler		Yes - Works	305.4	06/11/2006	No
344932	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Mobile Fueler	140	Yes - Works			No
230706	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
234591	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
294441	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
298564	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
308343	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
309323	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
310107	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
369782	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
402731	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
403361	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
457954	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
483616	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
487921	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
501410	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
517125	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
520184	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No
544957	Cargo Tractor	TIGER	1997	GASOLINE	On-Airport Stationary	140	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
225988	Cargo Tractor	TIGER	2000	GASOLINE	On-Airport Stationary	140	Yes - Works			No
372092	Cargo Tractor	TIGER	2000	GASOLINE	On-Airport Stationary	140	Yes - Works			No
367052	Cargo Tractor	TIGER	2000	GASOLINE		101				No
401079	Cargo Tractor	TIGER	2000	GASOLINE		101				No
453194	Cargo Tractor	TIGER	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
488306	Cargo Tractor	TIGER	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
498414	Cargo Tractor	TIGER	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
521542	Cargo Tractor	TIGER	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
401289	Cargo Tractor	TIGER	2002	GASOLINE	On-Airport Stationary	140	Yes - Works			No
412629	Cargo Tractor	TIGER	2002	GASOLINE	On-Airport Stationary	140	Yes - Works			No
474705	Cargo Tractor	TIGER	2002	GASOLINE	On-Airport Stationary	140	Yes - Works			No
501550	Cargo Tractor	TIGER	2002	GASOLINE	On-Airport Stationary	140	Yes - Works			No
506149	Cargo Tractor	TIGER	2002	GASOLINE	On-Airport Stationary	140	Yes - Works			No
236614	Cargo Tractor	TUG	1985	LPG		107				No
248325	Cargo Tractor	TUG	1985	LPG		107				No
453726	Cargo Tractor	TUG	1985	LPG		107				No
TG 1200	Cargo Tractor	TUG	1987	diesel	On-Airport Mobile Fueler	124	Yes - Works	7,260.0	05/30/2006	No
218232	Cargo Tractor	TUG	1989	LPG		107				No
265839	Cargo Tractor	TUG	1989	LPG		107				No
410501	Cargo Tractor	TUG	1989	LPG		107				No
443947	Cargo Tractor	TUG	1989	LPG		107				No
496664	Cargo Tractor	TUG	1989	LPG		107				No
TG 0550	Cargo Tractor	TUG	1990	LPG	On-Airport Mobile Fueler	124	Yes - Works	4,637.0	05/22/2006	No
243712	Cargo Tractor	TUG	1990	LPG		107				No
235970	Cargo Tractor	TUG	1992	LPG		107				No
16280	Cargo Tractor	TUG	1993	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16282	Cargo Tractor	TUG	1993	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16283	Cargo Tractor	TUG	1993	LPG	On-Airport Mobile Fueler	170	Yes - Works			
TG 0730	Cargo Tractor	TUG	1994	LPG	On-Airport Mobile Fueler	124	Yes - Works	5,099.0	05/22/2006	No
238910	Cargo Tractor	TUG	1994	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	3,043.0	06/02/06	No
494907	Cargo Tractor	TUG	1994	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	3,570.0	06/02/06	No
546070	Cargo Tractor	TUG	1994	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	4,775.0	06/02/06	No
16292	Cargo Tractor	TUG	1994	LPG	On-Airport Mobile Fueler	170	Yes - Works			
240569	Cargo Tractor	TUG	1995	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	9,198.0	06/02/06	No
537901	Cargo Tractor	TUG	1995	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	9,500.0	06/02/06	No
522984	Cargo Tractor	TUG	1995	LPG		107				No
291473	Cargo Tractor	TUG	1996	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	7,465.0	06/02/06	No
16343	Cargo Tractor	TUG	1996	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16350	Cargo Tractor	TUG	1997	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16436	Cargo Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16441	Cargo Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			
16442	Cargo Tractor	TUG	1998	LPG	On-Airport Mobile Fueler	170	Yes - Works			

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
TG 1540	Cargo Tractor	TUG	1999	gasoline	On-Airport Mobile Fueler	124	Yes - Works	940.0	05/22/2006	No
349783	Cargo Tractor	TUG	1999	LPG		107				No
406357	Cargo Tractor	TUG	1999	LPG		107				No
241871	Cargo Tractor	TUG	1999	LPG		150				No
16443	Cargo Tractor	TUG	1999	LPG	On-Airport Mobile Fueler	170	Yes - Works			
307958	Cargo Tractor	TUG	2000	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	4,448.0	06/02/06	No
286867	Cargo Tractor	TUG	2000	LPG		107				No
339332	Cargo Tractor	TUG	2000	LPG		107				No
359338	Cargo Tractor	TUG	2000	LPG		107				No
361501	Cargo Tractor	TUG	2000	LPG		107				No
365162	Cargo Tractor	TUG	2000	LPG		107				No
407036	Cargo Tractor	TUG	2000	LPG		107				No
458472	Cargo Tractor	TUG	2000	LPG		107				No
468762	Cargo Tractor	TUG	2000	LPG		107				No
474047	Cargo Tractor	TUG	2000	LPG		107				No
514108	Cargo Tractor	TUG	2000	LPG		107				No
532994	Cargo Tractor	TUG	2000	LPG		107				No
533547	Cargo Tractor	TUG	2000	LPG		107				No
445536	Cargo Tractor	TUG	2000	LPG		150				No
CTV9	Cargo Tractor	TUG High Speed	1988	Propane	On-Airport Mobile Fueler					
CTV11	Cargo Tractor	TUG High Speed	1988	Propane	On-Airport Mobile Fueler					
CTV12	Cargo Tractor	TUG High Speed	1988	Propane	On-Airport Mobile Fueler					
456855	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Mobile Fueler	140	Yes - Works			No
479178	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Mobile Fueler	140	Yes - Works			No
522018	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Mobile Fueler	140	Yes - Works			No
366562	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
392700	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
452599	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
462539	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
468461	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
473375	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
495005	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
525847	Cargo Tractor	TUGMN	1980	GASOLINE	On-Airport Stationary	140	Yes - Works			No
265475	Cargo Tractor	TUGMN	1993	GASOLINE	On-Airport Stationary	140	Yes - Works			No
499765	Cargo Tractor	TUGMN	1993	GASOLINE	On-Airport Stationary	140	Yes - Works			No
513135	Cargo Tractor	TUGMN	1993	GASOLINE	On-Airport Stationary	140	Yes - Works			No
220010	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
220199	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
234689	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
240422	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
245644	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
258776	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
288841	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
293384	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
310135	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
315546	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
336133	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
339906	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
348621	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
370678	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
407715	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
432068	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
467222	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
478443	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
489167	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
502236	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
529970	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
542304	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
550256	Cargo Tractor	TUGMN	1994	GASOLINE	On-Airport Stationary	140	Yes - Works			No
298193	Cargo Tractor	TUGMN	2000	GASOLINE	On-Airport Stationary	140	Yes - Works			No
405867	Cargo Tractor	TUGMN	2000	GASOLINE	On-Airport Stationary	140	Yes - Works			No
473767	Cargo Tractor	TUGMN	2000	GASOLINE	On-Airport Stationary	140	Yes - Works			No
288281	Cargo Tractor	TUGMN	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
391622	Cargo Tractor	TUGMN	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
422870	Cargo Tractor	TUGMN	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
429877	Cargo Tractor	TUGMN	2001	GASOLINE	On-Airport Stationary	140	Yes - Works			No
236894	Cargo Tractor	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
242200	Cargo Tractor	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
246841	Cargo Tractor	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
293069	Cargo Tractor	TUGMN	2003	ELECTRIC	On-Airport Stationary	90	Yes - Works			No
216433	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
216657	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
224273	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
244069	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
275247	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
283570	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
334411	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
367570	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
409269	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
488537	Cargo Tractor	TUGMN	2003	GASOLINE	On-Airport Stationary	90	Yes - Works			No
230034	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
250929	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
264082	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
283535	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
333683	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
349055	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
424669	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
428344	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
432362	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
476630	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
499422	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
543319	Cargo Tractor	TUGMN	2004	GASOLINE	On-Airport Stationary	90	Yes - Works			No
231840	Cargo Tractor		1999	LPG	On-Airport Stationary	95	Yes - Works	4,018.0	05/15/06	No
262318	Cart	ACE-DEVTEC-NORDCO	1985	GASOLINE		40				No
63235	Cart	Bosserman	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
63236	Cart	Bosserman	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
63237	Cart	Bosserman	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
476350	cart	CUSHMAN	1985	ELECTRIC			Yes - Works	0.0	05/15/06	No
63223	Cart	DTS	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
63225	Cart	DTS	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
63226	Cart	DTS	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
434392	Cart	EVI	1999	ELECTRIC		55				No
289009	Cart	EVI	2000	ELECTRIC		55				No
438081	Cart	EZ GO	1978	ELECTRIC			Yes - Works	0.0	05/15/06	No
519232	Cart	EZ GO	1990	ELECTRIC		55				No
562093	Cart	EZ GO	1990	ELECTRIC		55				No
323302	Cart	EZ GO	1999	ELECTRIC			Yes - Works	0.0	05/15/06	No
254380	Cart	EZ GO	1999	ELECTRIC			Yes - Works	531.0	05/15/06	No
413798	Cart	EZEGO	1988	ELECTRIC	On-Airport Stationary	6	Yes - Works	96.0	05/15/06	No
410921	Cart	EZEGO	1988	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,049.0	05/15/06	No
527226	Cart	EZEGO	1988	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,260.0	05/15/06	No
415037	Cart	EZEGO	1988	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,943.0	05/15/06	No
250201	Cart	EZEGO	1988	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,263.0	05/15/06	No
332976	Cart	EZEGO	1988	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,432.0	05/15/06	No
410592	Cart	EZEGO	1989	ELECTRIC	On-Airport Stationary	6	Yes - Works	565.0	05/15/06	No
222523	Cart	EZEGO	1989	ELECTRIC	On-Airport Stationary	6	Yes - Works	618.0	05/15/06	No
463862	Cart	EZEGO	1989	ELECTRIC	On-Airport Stationary	6	Yes - Works	814.0	05/15/06	No
235361	Cart	EZEGO	1989	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,146.0	05/15/06	No
521752	Cart	EZEGO	1990	ELECTRIC	On-Airport Stationary	6	Yes - Works	476.0	05/15/06	No
548093	Cart	EZEGO	1990	ELECTRIC	On-Airport Stationary	6	Yes - Works	891.0	05/15/06	No
275394	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	296.0	05/15/06	No
494963	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	410.0	05/15/06	No
314069	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	683.0	05/15/06	No
373604	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	769.0	05/15/06	No
405538	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,118.0	05/15/06	No
227472	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,444.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
316897	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,509.0	05/15/06	No
472570	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,977.0	05/15/06	No
264180	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,987.0	05/15/06	No
284081	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,406.0	05/15/06	No
490259	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,489.0	05/15/06	No
557830	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,546.0	05/15/06	No
557053	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,708.0	05/15/06	No
216461	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	3,139.0	05/15/06	No
258230	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	6,379.0	05/15/06	No
336105	Cart	EZEGO	1991	ELECTRIC	On-Airport Stationary	6	Yes - Works	8,042.0	05/15/06	No
512036	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	458.0	05/15/06	No
546252	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	574.0	05/15/06	No
519358	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	700.0	05/15/06	No
307426	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	855.0	05/15/06	No
467390	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,312.0	05/15/06	No
327936	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,592.0	05/15/06	No
226401	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	3,252.0	05/15/06	No
492695	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	3,407.0	05/15/06	No
429814	Cart	EZEGO	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	3,853.0	05/15/06	No
534002	Cart	EZEGO	1994	ELECTRIC	On-Airport Stationary	6	Yes - Works	708.0	05/15/06	No
524083	Cart	EZEGO	1994	ELECTRIC	On-Airport Stationary	6	Yes - Works	815.0	05/15/06	No
222180	Cart	EZEGO	1994	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,634.0	05/15/06	No
270221	Cart	EZEGO	1994	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,674.0	05/15/06	No
363678	Cart	EZEGO	1994	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,417.0	05/15/06	No
304752	Cart	EZEGO	1994	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,586.0	05/15/06	No
302505	Cart	EZEGO	1995	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,003.0	05/15/06	No
355523	Cart	EZEGO	1996	ELECTRIC	On-Airport Stationary	6	Yes - Works	467.0	05/15/06	No
340046	Cart	EZEGO	1996	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,471.0	05/15/06	No
342237	Cart	EZEGO	1996	ELECTRIC	On-Airport Stationary	6	Yes - Works	3,604.0	05/15/06	No
353528	Cart	EZEGO	1996	ELECTRIC	On-Airport Stationary	6	Yes - Works	5,133.0	05/15/06	No
325010	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	3.0	05/15/06	No
382214	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	40.0	05/15/06	No
372029	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	418.0	05/15/06	No
426020	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	455.0	05/15/06	No
319410	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	512.0	05/15/06	No
284858	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	850.0	05/15/06	No
239190	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	4,603.0	05/15/06	No
470372	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	5,566.0	05/15/06	No
267092	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	6,091.0	05/15/06	No
467733	Cart	EZEGO	1997	ELECTRIC	On-Airport Stationary	6	Yes - Works	7,952.0	05/15/06	No
411810	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	1.0	05/15/06	No
259581	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	5.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
219989	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	89.0	05/15/06	No
242452	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	130.0	05/15/06	No
364924	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	183.0	05/15/06	No
254618	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	213.0	05/15/06	No
250320	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	214.0	05/15/06	No
471667	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	286.0	05/15/06	No
326347	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	478.0	05/15/06	No
403676	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	501.0	05/15/06	No
467859	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	662.0	05/15/06	No
317492	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	921.0	05/15/06	No
455119	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,096.0	05/15/06	No
284326	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,399.0	05/15/06	No
486584	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,564.0	05/15/06	No
450520	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,863.0	05/15/06	No
312347	Cart	EZEGO	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	4,967.0	05/15/06	No
268338	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	100.0	05/15/06	No
344484	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	109.0	05/15/06	No
370965	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	221.0	05/15/06	No
267337	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	377.0	05/15/06	No
333697	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	425.0	05/15/06	No
543326	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	508.0	05/15/06	No
219576	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	698.0	05/15/06	No
221823	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	827.0	05/15/06	No
513989	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	928.0	05/15/06	No
417018	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,331.0	05/15/06	No
522655	Cart	EZEGO	1999	ELECTRIC	On-Airport Stationary	6	Yes - Works	8,144.0	05/15/06	No
312662	Cart	EZEGO	2000	ELECTRIC	On-Airport Stationary	6	Yes - Works	6,085.0	05/15/06	No
411649	Cart	EZEGO	2002	ELECTRIC	On-Airport Stationary	6	Yes - Works	1,481.0	05/15/06	No
276227	Cart	E-Z-GO	1988	ELECTRIC		30				No
387926	Cart	E-Z-GO	1988	ELECTRIC		30				No
235606	Cart	E-Z-GO	1990	ELECTRIC		30				No
257327	Cart	GEM		ELECTRIC						Yes - Other
266756	Cart	GEM		ELECTRIC						Yes - Other
357301	Cart	GEM		ELECTRIC						Yes - Other
360115	Cart	GEM		ELECTRIC						Yes - Other
406462	Cart	MCKINLEY	1985	ELECTRIC		55				No
407708	Cart	MCKINLEY	1985	ELECTRIC		55				No
337519	Cart	NORDSROG	1990	ELECTRIC		30				No
326270	Cart	PHOENIX METAL	2002	ELECTRIC		40				No
543123	Cart	TAYLOR DUNN	2002	ELECTRIC	On-Airport Stationary		No		06/01/06	No
344617	Cart	TAYLOR DUNN	2004	ELECTRIC	On-Airport Stationary		No		06/01/06	No
247849	Cart	TAYLOR DUNN	1976	ELECTRIC	On-Airport Stationary	6	Yes - Works	9,472.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
315868	Cart	TAYLOR DUNN	1980	ELECTRIC	On-Airport Stationary	6	Yes - Works	2,065.0	05/15/06	No
229383	Cart	TAYLOR DUNN	1988	GASOLINE	On-Airport Stationary	8	Yes - Works	76.0	05/15/06	No
516803	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	21.0	05/15/06	No
270207	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	68.0	05/15/06	No
315203	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	88.0	05/15/06	No
353178	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	109.0	05/15/06	No
371679	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	121.0	05/15/06	No
301721	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	125.0	05/15/06	No
407435	Cart	TAYLOR DUNN	2001	ELECTRIC	On-Airport Stationary	6	Yes - Works	161.0	05/15/06	No
301959	Cart	TAYLOR-DUNN	1995	ELECTRIC		30				No
268058	Cart	TAYLOR-DUNN	1997	ELECTRIC		30				No
351323	Cart	TAYLOR-DUNN	1997	ELECTRIC		30				No
365169	Cart	TAYLOR-DUNN	1997	ELECTRIC		30				No
369292	Cart	TAYLOR-DUNN	1997	ELECTRIC		30				No
407001	Cart	TAYLOR-DUNN	1997	ELECTRIC		30				No
457135	Cart	TAYLOR-DUNN	1997	ELECTRIC		30				No
240156	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
254702	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
279342	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
299425	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
330722	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
364609	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
382872	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
395724	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
396487	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
453019	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
467635	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
471058	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
485324	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
501102	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
510965	Cart	TAYLOR-DUNN	2000	ELECTRIC		30				No
357490	Cart	TAYLOR-DUNN	2000	LPG		30				No
378266	Cart	TAYLOR-DUNN	2000	LPG		30				No
259525	Cart	TAYLOR-DUNN	2001	ELECTRIC		30				No
269773	Cart	TAYLOR-DUNN	2001	ELECTRIC		30				No
348894	Cart	TAYLOR-DUNN	2001	ELECTRIC		30				No
384335	Cart	TAYLOR-DUNN	2001	ELECTRIC		30				No
490364	Cart	TAYLOR-DUNN	2001	ELECTRIC		30				No
499534	Cart	UALXX	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	56.0	05/15/06	No
558978	Cart	UALXX	1993	ELECTRIC	On-Airport Stationary	6	Yes - Works	569.0	05/15/06	No
276808	Cart	YAMAHA	1989	ELECTRIC	On-Airport Stationary		No		06/01/06	No
436296	Cart		1986	ELEC	On-Airport Stationary		Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
318626	Cart		1995	ELEC	On-Airport Stationary		Yes - Works	8,983.0	09/21/05	No
266196	Cart		1995	ELEC	On-Airport Stationary		Yes - Works	624.0	02/02/06	No
485758	Cart			ELEC	On-Airport Stationary		Yes - Works			No
224959	Catering Truck	CUMMINS	1997	DIESEL	On-Airport Stationary	175	Yes - Works	12,005.0	01/31/01	Yes - Other
341348	Catering Truck	FORD	1980	GASOLINE		175				Yes - Other
328398	Catering Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	208.0	01/28/02	Yes - Other
544747	Catering Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	4,331.0	06/11/06	Yes - Other
425887	Catering Truck	FORD	1988	LPG	On-Airport Stationary	210	Yes - Works	2,146.0	05/15/06	Yes - Other
362635	Catering Truck	FORD	1988	LPG	On-Airport Stationary	210	Yes - Works	3,752.0	05/15/06	Yes - Other
408338	Catering Truck	FORD	1988	GASOLINE	On-Airport Stationary	210	Yes - Works	5,375.0	05/15/06	Yes - Other
269605	Catering Truck	FORD	1988	GASOLINE	On-Airport Stationary	210	Yes - Works	6,956.0	05/15/06	Yes - Other
535556	Catering Truck	FORD	1988	LPG	On-Airport Stationary	210	Yes - Works	8,029.0	05/15/06	Yes - Other
317289	Catering Truck	FORD	1988	GASOLINE	On-Airport Stationary	210	Yes - Works	9,367.0	05/15/06	Yes - Other
358540	Catering Truck	FORD	1989	GASOLINE	On-Airport Stationary	210	Yes - Works	3,250.0	05/15/06	Yes - Other
402696	Catering Truck	FORD	1989	GASOLINE	On-Airport Stationary	210	Yes - Works	3,742.0	05/15/06	Yes - Other
537390	Catering Truck	FORD	1989	GASOLINE	On-Airport Stationary	210	Yes - Works	5,893.0	05/15/06	Yes - Other
473123	Catering Truck	FORD	1989	GASOLINE	On-Airport Stationary	210	Yes - Works	8,073.0	05/15/06	Yes - Other
408660	Catering Truck	FORD	1989	LPG	On-Airport Stationary	210	Yes - Works	8,276.0	05/15/06	Yes - Other
407946	Catering Truck	FORD	1989	GASOLINE	On-Airport Stationary	210	Yes - Works	16,919.0	05/15/06	Yes - Other
241710	Catering Truck	FORD	1990	GASOLINE	On-Airport Stationary	210	Yes - Works	2,278.0	05/15/06	Yes - Other
231609	Catering Truck	FORD	1990	GAS	On-Airport Stationary		Yes - Works	9,565.0	05/31/06	Yes - Other
446047	Catering Truck	FORD	1991	DIESEL	On-Airport Stationary	207	Yes - Works	229.0	05/15/06	Yes - Other
494564	Catering Truck	FORD	1991	GAS	On-Airport Stationary		Yes - Works	1,628.0	05/26/06	Yes - Other
472430	Catering Truck	FORD	1997	DIESEL	On-Airport Stationary	175	Yes - Works	1,647.0	01/18/02	Yes - Other
232477	Catering Truck	FORD	1998	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	4,793.0	05/15/06	Yes - Other
496496	Catering Truck	FORD	1998	GASOLINE	On-Airport Stationary	210	Yes - Works	6,847.0	05/15/06	Yes - Other
383404	Catering Truck	FORD	2004	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	937.0	05/15/06	Yes - Other
238350	Catering Truck	FORD	2004	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	1,320.0	05/15/06	Yes - Other
448560	Catering Truck	FORD	2004	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	2,115.0	05/15/06	Yes - Other
377790	Catering Truck	FORD	2005	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	141.0	05/15/06	Yes - Other
373975	Catering Truck	FORD	2005	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	1,126.0	05/15/06	Yes - Other
226527	Catering Truck	FORD	2005	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	2,145.0	05/15/06	Yes - Other
563507	Catering Truck	FORD	1990	DIESEL	On-Airport Stationary	207	Yes - Works	6,611.0	05/15/06	Yes - Other
399952	Catering Truck	FORD	1990	DIESEL	On-Airport Stationary	207	Yes - Works	6,969.0	05/15/06	Yes - Other
449988	Catering Truck	FREIGHTLINER	1995	DIESEL	On-Airport Stationary	207	Yes - Works	9,352.0	05/15/06	No
447188	Catering Truck	FREIGHTLINER	1997	DIESEL	On-Airport Stationary	207	Yes - Works	7,420.0	05/15/06	Yes - Other
321482	Catering Truck	GLOBAL	1999	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	16.0	05/15/06	Yes - Other
266539	Catering Truck	GLOBAL	1999	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	1,482.0	05/15/06	Yes - Other
431494	Catering Truck	ISUZU	1990	DIESEL	On-Airport Stationary	207	Yes - Works	9,622.0	05/15/06	Yes - Other
401359	Catering Truck	MITSUBISHI	1992	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	2,759.0	06/02/06	Yes - Other
303450	Catering Truck	MITSUBISHI	1992	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	3,464.0	06/02/06	Yes - Other
401898	Catering Truck	MITSUBISHI	1994	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	21,592.0	06/02/06	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
541821	Catering Truck	MITSUBISHI	1994	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	24,992.0	06/02/06	Yes - Other
390397	Catering Truck	MITSUBISHI	1994	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	25,442.0	06/02/06	Yes - Other
413469	Catering Truck	MITSUBISHI	1994	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	25,917.0	06/02/06	Yes - Other
363048	Catering Truck	MITSUBISHI	1994	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	26,926.0	06/02/06	Yes - Other
407995	Catering Truck	MITSUBISHI	1994	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	29,709.0	06/02/06	Yes - Other
349923	Catering Truck	MITSUBISHI	1995	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	5,171.0	06/02/06	Yes - Other
539119	Catering Truck	MITSUBISHI	1995	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	5,690.0	06/02/06	Yes - Other
368018	Catering Truck	MITSUBISHI	1995	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	30,562.0	06/02/06	Yes - Other
531517	Catering Truck	MITSUBISHI	1995	DIESEL	On-Airport Mobile Fueler	155	Yes - Works	32,480.0	06/02/06	Yes - Other
535472	Catering Truck	MITSUBISHI	2005	DIESEL	On-Airport Mobile Fueler	185	Yes - Works	1,782.0	06/02/06	Yes - Other
248024	Catering Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	207	Yes - Works	3,869.0	05/15/06	Yes - Other
516075	Catering Truck	NAVISTAR	1993	DIESEL	On-Airport Stationary	207	Yes - Works	8,350.0	05/15/06	Yes - Other
328762	Catering Truck	NAVISTAR	1996	DIESEL	On-Airport Stationary	207	Yes - Works	2,297.0	05/15/06	Yes - Other
322490	Catering Truck	NAVISTAR	1996	DIESEL	On-Airport Stationary	207	Yes - Works	8,544.0	05/15/06	Yes - Other
514864	Catering Truck	NAVISTAR	1996	DIESEL	On-Airport Stationary	207	Yes - Works	8,724.0	05/15/06	Yes - Other
533960	Catering Truck	NAVISTAR	1996	DIESEL	On-Airport Stationary	207	Yes - Works	10,175.0	05/15/06	Yes - Other
356944	Catering Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	207	Yes - Works	22,436.0	05/15/06	Yes - Other
345324	Catering Truck	NAVISTAR	2000	DIESEL	On-Airport Stationary	207	Yes - Works	25,430.0	05/15/06	Yes - Other
354774	Catering Truck	NAVISTAR	2002	DIESEL	On-Airport Stationary	207	Yes - Works	12,777.0	05/15/06	Yes - Other
2308	Catering Truck			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,757.0	11/01/2006	Yes - Other
267946	Deicer	DODGE	1986	GASOLINE	On-Airport Mobile Fueler	200	Yes - Works	176.0	06/02/06	Yes - Light Duty
454398	Fork Lift	ALLIS-CHAMERS	1979	GASOLINE	On-Airport Stationary	80	Yes - Works	441.0	05/15/06	No
455889	Fork Lift	CAT	1995	LPG	On-Airport Mobile Fueler	104	Yes - Works	4,989.0	06/02/06	No
247408	Fork Lift	CATER	1989	LPG	On-Airport Stationary					No
483672	Fork Lift	CATER	1990	ELECTRIC						No
295281	Fork Lift	CATERPILLAR		LPG	Off Airport	95				No
60136	Fork Lift	Clark	1975		On-Airport Mobile Fueler		Yes - Works			No
399154	Fork Lift	CLARK	1982	LPG	On-Airport Mobile Fueler	80	Yes - Works			No
7	Fork Lift	Clark	1986	electric	Off Airport		Yes - Works	887.0	06/15/2006	No
6	Fork Lift	Clark	1986	electric	Off Airport		Yes - Works	7,176.0	06/15/2006	No
426510	Fork Lift	CLARK	1988	LPG	On-Airport Stationary	70	Yes - Works	3,306.0	05/15/06	No
446887	Fork Lift	CLARK	1988	DIESEL	On-Airport Mobile Fueler	80	Yes - Works	3,228.0	06/01/06	No
FL16	Fork Lift	CLARK	1988	diesel	On-Airport Mobile Fueler		Yes - Works	1,451.0	06/13/2006	No
FL05	Fork Lift	CLARK	1988	LPG	On-Airport Stationary		Yes - Works	10,177.0	06/13/2006	No
256480	Fork Lift	CLARK	1989	LPG		82				No
466844	Fork Lift	CLARK	1989	LPG		110				No
233170	Fork Lift	CLARK	1990	LPG	On-Airport Stationary	49	Yes - Works	80.0	05/15/06	No
301798	Fork Lift	CLARK	1990	ELECTRIC			Yes - Works	1,686.0	05/15/06	No
386477	Fork Lift	CLARK	1990	LPG	On-Airport Stationary	49	Yes - Works	6,337.0	05/15/06	No
223783	Fork Lift	CLARK	1990	LPG	On-Airport Stationary	49	Yes - Works	8,904.0	05/15/06	No
320075	Fork Lift	CLARK	1990	LPG	On-Airport Mobile Fueler	180	Yes - Works			No
499478	Fork Lift	CLARK	1991	LPG	On-Airport Mobile Fueler	60	Yes - Works	889.0	06/01/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
364497	Fork Lift	CLARK	1991	GASOLINE	On-Airport Mobile Fueler	40	Yes - Works	3,374.0	06/01/06	No
436499	Fork Lift	CLARK	1996	GASOLINE		80				No
FL 75900	Fork Lift	CLARK		LPG	On-Airport Mobile Fueler	45	Yes - Works	7,180.0	05/22/2006	No
281848	Fork Lift	CLARK LIFT	1977	GASOLINE	On-Airport Stationary	80	Yes - Works	7,551.0	05/15/06	No
308091	Fork Lift	CLARK LIFT	1979	ELECTRIC	On-Airport Stationary	80	Yes - Works	819.0	05/15/06	No
279524	Fork Lift	CLARK LIFT	1979	ELECTRIC	On-Airport Stationary	80	Yes - Works	1,439.0	05/15/06	No
251223	Fork Lift	CROWN	1994	ELECTRIC			Yes - Works	561.0	05/15/06	No
444822	Fork Lift	CROWN	1994	ELECTRIC			Yes - Works	1,640.0	05/15/06	No
311402	Fork Lift	CROWN	1994	ELECTRIC			Yes - Works	1,672.0	05/15/06	No
240870	Fork Lift	CROWN	1994	ELECTRIC			Yes - Works	3,389.0	05/15/06	No
538874	Fork Lift	CROWN	1994	ELECTRIC			Yes - Works	4,479.0	05/15/06	No
338548	Fork Lift	CROWN	1994	ELECTRIC			Yes - Works	5,527.0	05/15/06	No
426118	Fork Lift	CROWN		ELECTRIC			No		05/15/06	No
430262	Fork Lift	CROWN		ELECTRIC			No		05/15/06	No
284109	Fork Lift	CTRPL	1989	DIESEL	On-Airport Mobile Fueler	45	Yes - Works			No
365736	Fork Lift	CUMMINS	1991	DIESEL	On-Airport Stationary	250	Yes - Works	1,049.0	02/06/06	No
FL02	Fork Lift	DAEWOO	1998	LPG	On-Airport Stationary		Yes - Works	9,498.0	06/13/2006	No
6011529	Fork Lift	Datsun	1981		On-Airport Mobile Fueler		Yes - Works			No
257635	Fork Lift	DETROIT	1985	LP	On-Airport Stationary		Yes - Works	1,860.0	02/06/02	No
349811	Fork Lift	FREIGHTLINER	1995	DIESEL	On-Airport Stationary	80	Yes - Works	367.0	05/15/06	No
30-204	Fork Lift	GM	2004	LPG	Off Airport	120	Yes - Works		05/19/2006	
267848	Fork Lift	HYSTER	1959	GASOLINE		60				No
316148	Fork Lift	HYSTER	1970	DIESEL		180				No
455763	Fork Lift	HYSTER	1970	LPG		225				No
519883	Fork Lift	HYSTER	1975	GASOLINE		100				No
538580	Fork Lift	HYSTER	1978	DIESEL	On-Airport Mobile Fueler	225	Yes - Works	7,786.0	05/15/06	No
371063	Fork Lift	HYSTER	1979	LPG		60				No
312991	Fork Lift	HYSTER	1980	ELECTRIC		80				No
362159	Fork Lift	HYSTER	1980	ELECTRIC		80				No
511539	Fork Lift	HYSTER	1980	ELECTRIC		100				No
379071	Fork Lift	HYSTER	1980	DIESEL		200				No
30-508	Fork Lift	HYSTER	1980	diesel	On-Airport Stationary	200	Yes - Works		05/19/2006	
454762	Fork Lift	HYSTER	1982	DIESEL	On-Airport Mobile Fueler	88	Yes - Works	3,129.0	05/15/06	No
FL12	Fork Lift	HYSTER	1984	diesel	On-Airport Mobile Fueler		Yes - Works	1,033.0	06/13/2006	No
554561	Fork Lift	HYSTER	1987	LPG	On-Airport Stationary	88	Yes - Works	5,234.0	05/15/06	No
FL07	Fork Lift	HYSTER	1990	LPG	On-Airport Stationary		Yes - Works	8,521.0	06/13/2006	No
FL17	Fork Lift	HYSTER	1991	LPG	On-Airport Stationary		Yes - Works	7,634.0	06/13/2006	No
492156	Fork Lift	HYSTER	1991	LPG		94				No
454755	Fork Lift	HYSTER	1991	LPG		100				No
FL06	Fork Lift	HYSTER	1992	LPG	On-Airport Stationary		Yes - Works	12,566.0	06/13/2006	No
320838	Fork Lift	HYSTER	1992	LPG		94				No
F/L #1	Fork Lift	HYSTER	1995	LPG	Off Airport		Yes - Works	7,648.0	06/11/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
F/L #2	Fork Lift	HYSTER	1996	LPG	Off Airport		Yes - Works	7,539.5	06/11/2006	No
FL 1000	Fork Lift	HYSTER	1997	LPG	On-Airport Mobile Fueler	90	Yes - Works	6,592.0	05/22/2006	No
FL04	Fork Lift	HYSTER	1998	LPG	On-Airport Stationary		Yes - Works	11,700.0	06/13/2006	No
FL03	Fork Lift	HYSTER	1998	LPG	On-Airport Stationary		Yes - Works	15,085.0	06/13/2006	No
fl164	fork lift	Hyster	1999	LPG	On-Airport Mobile Fueler	30	Yes - Doesn't Work			No
60193	Fork Lift	Hyster	2000		On-Airport Mobile Fueler		Yes - Works			No
FL08	Fork Lift	HYSTER	2001	LPG	On-Airport Stationary		Yes - Works	12,769.0	06/13/2006	No
FL09	Fork Lift	HYSTER	2001	LPG	On-Airport Stationary		Yes - Works	13,076.0	06/13/2006	No
FL11	Fork Lift	HYSTER	2001	LPG	On-Airport Stationary		Yes - Works	13,173.0	06/13/2006	No
FL10	Fork Lift	HYSTER	2001	LPG	On-Airport Stationary		Yes - Works	14,163.0	06/13/2006	No
221060	Fork Lift	HYSTER	2001	GASOLINE	On-Airport Mobile Fueler	42	Yes - Works			No
S/N: D187V30098A	Fork Lift	Hyster	2003	LPG	On-Airport Mobile Fueler	63	Yes - Works	69.0	06/07/2006	No
FL13	Fork Lift	HYSTER	2005	diesel	On-Airport Stationary		Yes - Works	48.0	06/13/2006	No
CET 23	Fork Lift	Hyster		alt1 - specify			Yes - Works		06/14/2006	
CET 23	Fork Lift	Hyster		alt1 - specify			Yes - Works		06/14/2006	
CGC 1	Fork Lift	Hyster		electric			Yes - Works		06/14/2006	
CET 8	Fork Lift	Hyster		electric			Yes - Works		06/14/2006	
264915	Fork Lift	HYSTER	1972	GASOLINE	On-Airport Stationary	80	Yes - Works	2,114.0	05/15/06	No
555345	Fork Lift	HYSTER	1988	DIESEL	On-Airport Stationary	80	Yes - Works	8,491.0	05/15/06	No
455896	Fork Lift	HYSTER	1996	LPG	On-Airport Stationary	80	Yes - Works	2,575.0	05/15/06	No
449638	Fork Lift	HYSTER	1996	ELECTRIC	On-Airport Stationary	80	Yes - Works	3,408.0	05/15/06	No
553770	Fork Lift	HYSTER	1997	DIESEL	On-Airport Stationary	80	Yes - Works	1,085.0	05/15/06	No
331422	Fork Lift	HYSTER	1997	LPG	On-Airport Stationary	80	Yes - Works	1,231.0	05/15/06	No
406077	Fork Lift	HYSTER	1997	LPG	On-Airport Stationary	80	Yes - Works	9,373.0	05/15/06	No
484386	Fork Lift	HYSTER	1998	LPG	On-Airport Stationary	80	Yes - Works	895.0	05/15/06	No
455462	Fork Lift	HYSTER	1998	LPG	On-Airport Stationary	80	Yes - Works	1,507.0	05/15/06	No
549843	Fork Lift	HYSTER	1998	LPG	On-Airport Stationary	80	Yes - Works	9,029.0	05/15/06	No
464030	Fork Lift	HYSTER	1999	ELECTRIC	On-Airport Stationary	80	Yes - Works	138.0	05/15/06	No
258510	Fork Lift	HYSTER	1999	ELECTRIC	On-Airport Stationary	80	Yes - Works	263.0	05/15/06	No
397166	Fork Lift	HYSTER	1999	LPG	On-Airport Stationary	80	Yes - Works	834.0	05/15/06	No
463190	Fork Lift	HYSTER	2001	LPG	On-Airport Stationary	80	Yes - Works	3,046.0	05/15/06	No
415240	Fork Lift	HYSTR	1980	DIESEL	On-Airport Mobile Fueler	45	Yes - Works			No
397173	Fork Lift	HYSTR	1996	DIESEL	On-Airport Mobile Fueler	225	Yes - Works			No
528185	Fork Lift	HYSTR	1996	ELECTRIC	On-Airport Stationary	225	Yes - Works			No
518791	Fork Lift	JLG	1994	LPG	On-Airport Stationary					No
319802	Fork Lift	JLG	1997	ELECTRIC						No
F/L #4	Fork Lift	KOMATSU	1987	electric			Yes - Works	3,476.2	06/11/2006	No
F/L #16	Fork Lift	KOMATSU	1989	gasoline	On-Airport Mobile Fueler		Yes - Works	33,146.9	06/11/2006	No
F/L #18	Fork Lift	KOMATSU	1990	LPG	Off Airport		Yes - Works	13,489.3	06/11/2006	No
30-065	Fork Lift	KOMATSU	1992	gasoline	On-Airport Stationary	80	Yes - Works	260.0	05/19/2006	
427252	Fork Lift	KOMATSU		LPG	Off Airport					No
366240	Fork Lift	KOMATSU	1993	LPG	On-Airport Stationary	80	Yes - Works	633.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
317926	Fork Lift	KOMATSU	1993	LPG	On-Airport Stationary	80	Yes - Works	1,315.0	05/15/06	No
411740	Fork Lift	NISSAN	1984	LPG	On-Airport Mobile Fueler	120	Yes - Works	8,419.0	06/02/06	No
266315	Fork Lift	NISSAN	1996	LP	On-Airport Stationary		Yes - Works	1,109.0	02/07/02	No
472045	Fork Lift	NISSAN	1996	LP	On-Airport Stationary		Yes - Works	147.0	02/15/02	No
244832	Fork Lift	NISSAN	1997	LP	On-Airport Stationary		Yes - Works	1,100.0	01/25/01	No
415793	Fork Lift	NISSAN	1997	LP	On-Airport Stationary		Yes - Works	9,348.0	02/07/02	No
231203	Fork Lift	NISSAN	1998	LP	On-Airport Stationary		Yes - Works	1,611.0	12/22/01	No
F/L #3	Fork Lift	NISSAN	1998	LPG	Off Airport		Yes - Works	7,432.9	06/11/2006	No
499009	Fork Lift	NISSAN	1999	LP	On-Airport Stationary		Yes - Works	3,881.0	12/22/01	No
451577	Fork Lift	PEUGUOT	1986	LP	On-Airport Stationary		Yes - Works	4,440.0	06/01/01	No
FL 5570	Fork Lift	RAYMOND		electric	On-Airport Stationary		Yes - Works	1,803.0	05/22/2006	No
294357	Fork Lift	RAYMOND	1997	ELECTRIC	On-Airport Stationary	80	Yes - Works	920.0	05/15/06	No
359044	Fork Lift	ROYAL	2003	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
250621	Fork Lift	TAYLR	1994	DIESEL	On-Airport Mobile Fueler	225	Yes - Works			No
366653	Fork Lift	TOYOT	2003	GASOLINE	On-Airport Mobile Fueler	45	Yes - Works			No
560518	Fork Lift	TOYOT	2005	GASOLINE	On-Airport Mobile Fueler	45	Yes - Works			No
223979	Fork Lift	TOYOT	2005	ELECTRIC	On-Airport Stationary	45	Yes - Works			No
302323	Fork Lift	TOYOT	2005	ELECTRIC	On-Airport Stationary	45	Yes - Works			No
437584	Fork Lift	TOYOT	2005	ELECTRIC	On-Airport Stationary	45	Yes - Works			No
FL 5540	Fork Lift	TOYOTA	1984	LPG	On-Airport Mobile Fueler	41	Yes - Works	5,216.0	05/22/2006	No
313187	Fork Lift	TOYOTA	1985	DIESEL		65				No
FL DNT	Fork Lift	TOYOTA	1989	LPG	On-Airport Mobile Fueler	45	Yes - Works	4,496.0	05/22/2006	No
230867	Fork Lift	TOYOTA	1990	DIESEL	On-Airport Mobile Fueler	85	Yes - Works	6,601.0	05/15/06	No
423696	Fork Lift	TOYOTA	1990	GASOLINE		60				No
273973	Fork Lift	TOYOTA	1991	LPG	On-Airport Stationary	69	Yes - Works	10,297.0	05/15/06	No
FL19	Fork Lift	TOYOTA	1991	LPG	On-Airport Stationary	52	Yes - Works	31,390.0	06/13/2006	No
488222	Fork Lift	TOYOTA	1993	LPG	On-Airport Stationary	52	Yes - Works	3,227.0	05/15/06	No
FL 6240	Fork Lift	TOYOTA	1993	LPG	On-Airport Mobile Fueler	84	Yes - Works	2,189.0	05/22/2006	No
FL21	Fork Lift	TOYOTA	1993	LPG	On-Airport Stationary	52	Yes - Works	29,099.0	06/13/2006	No
FL20	Fork Lift	TOYOTA	1993	LPG	On-Airport Stationary	52	Yes - Works	29,409.0	06/13/2006	No
FL22	Fork Lift	TOYOTA	1993	LPG	On-Airport Stationary	52	Yes - Doesn't Work			No
FL23	Fork Lift	TOYOTA	1994	LPG	On-Airport Stationary	52	Yes - Works	29,739.0	06/13/2006	No
FL25	Fork Lift	TOYOTA	1995	LPG	On-Airport Stationary	52	Yes - Works	18,585.0	06/13/2006	No
FL24	Fork Lift	TOYOTA	1995	LPG	On-Airport Stationary	52	Yes - Works	33,900.0	06/13/2006	No
FL A/F	Fork Lift	TOYOTA	1998	LPG	On-Airport Mobile Fueler	45	Yes - Works	17,418.0	05/22/2006	No
340942	Fork Lift	TOYOTA	1998	LPG		90				No
390425	Fork Lift	TOYOTA	1998	LPG		90				No
389417	Fork Lift	TOYOTA	2000	LPG	On-Airport Stationary	62	Yes - Works	2,188.0	05/15/06	No
403480	Fork Lift	TOYOTA	2000	LPG	On-Airport Stationary	62	Yes - Works	4,716.0	05/15/06	No
374108	Fork Lift	TOYOTA	2000	LPG	On-Airport Stationary	62	Yes - Works	5,355.0	05/15/06	No
265083	Fork Lift	TOYOTA	2000	LPG	On-Airport Stationary	62	Yes - Works	7,521.0	05/15/06	No
531146	Fork Lift	TOYOTA	2000	LPG	On-Airport Stationary	62	Yes - Works	8,207.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
318745	Fork Lift	TOYOTA	2000	LPG		53				No
379841	Fork Lift	TOYOTA	2000	LPG		53				No
554141	Fork Lift	TOYOTA	2000	LPG		53				No
454181	Fork Lift	TOYOTA	2000	LPG		73				No
381038	Fork Lift	TOYOTA	2001	LPG	On-Airport Stationary	95	Yes - Works	805.0	05/15/06	No
559062	Fork Lift	TOYOTA	2001	LPG	On-Airport Stationary	53	Yes - Works	2,088.0	05/15/06	No
FL ELEC	Fork Lift	TOYOTA	2001	electric	On-Airport Stationary		Yes - Works	4,102.0	05/30/2006	No
265881	Fork Lift	TOYOTA	2001	ELECTRIC		75				No
411761	Fork Lift	TOYOTA	2001	ELECTRIC		75				No
540456	Fork Lift	TOYOTA	2001	ELECTRIC		75				No
521444	Fork Lift	TOYOTA	2002	LPG	On-Airport Mobile Fueler	104	Yes - Works	10,737.0	06/02/06	No
364308	Fork Lift	TOYOTA	2002	LPG	On-Airport Mobile Fueler	104	Yes - Works	11,238.0	06/02/06	No
451423	Fork Lift	TOYOTA	2002	LPG	On-Airport Mobile Fueler	104	Yes - Works	11,285.0	06/02/06	No
242158	Fork Lift	TOYOTA	2003	LPG		75				No
326095	Fork Lift	TOYOTA	2003	LPG		75				No
417550	Fork Lift	TOYOTA	2003	LPG		75				No
517559	Fork Lift	TOYOTA	2003	LPG		75				No
427560	Fork Lift	TOYOTA	2004	LPG	On-Airport Mobile Fueler	104	Yes - Works	6,625.0	06/02/06	No
335314	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
341705	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
346563	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
352016	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
420868	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
431466	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
433461	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
447762	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
475370	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
475748	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
505561	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
527478	Fork Lift	TOYOTA	2004	ELECTRIC		75				No
551691	Fork Lift	TOYOTA	2005	LPG	On-Airport Stationary	60	Yes - Works	40.0	05/15/06	No
302372	Fork Lift	TOYOTA	2005	LPG	On-Airport Mobile Fueler	104	Yes - Works	2,771.0	06/02/06	No
FL28	Fork Lift	TOYOTA	2005	LPG	On-Airport Stationary	52	Yes - Works	344.0	06/13/2006	No
FL26	Fork Lift	TOYOTA	2005	LPG	On-Airport Stationary	52	Yes - Works	1,600.0	06/13/2006	No
FL27	Fork Lift	TOYOTA	2005	LPG	On-Airport Stationary	52	Yes - Works	1,709.0	06/13/2006	No
229005	Fork Lift	TOYOTA	2006	LPG	On-Airport Stationary		Yes - Works	37.0	05/15/06	No
fl164	Fork Lift	Toyota		LPG	On-Airport Mobile Fueler	Yes - Doesn't Work				
437927	Fork Lift	TOYOTA	1987	LPG	On-Airport Stationary	80	Yes - Works	4,342.0	05/15/06	No
8	Fork Lift	Toyota Lift	1997	electric	Off Airport		Yes - Works	10,756.2	06/15/2006	No
14	Fork Lift	Toyota Lift	2006	electric	Off Airport		Yes - Works	104.5	06/15/2006	No
15	Fork Lift	Toyota Lift	2006	electric	Off Airport		Yes - Works	197.8	06/15/2006	No
306719	Fork Lift	UNKNOWN	1986	ELECTRIC		100				No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
11	Fork Lift	Yale	1996	LPG	Off Airport		Yes - Works	7,452.0	06/15/2006	No
10	Fork Lift	Yale	1997	LPG	Off Airport		Yes - Works	7,414.0	06/15/2006	No
FL 5590	Fork Lift	YALE	1998	LPG	On-Airport Mobile Fueler	45	Yes - Works	18,095.0	05/22/2006	No
FL 5580	Fork Lift	YALE	1998	LPG	On-Airport Mobile Fueler	45	Yes - Works	18,586.0	05/22/2006	No
F/L #21	Fork Lift	YALE	2001	LPG	Off Airport	180	Yes - Works	8,791.0	06/11/2006	No
F/L #22	Fork Lift	YALE	2001	LPG	Off Airport	180	Yes - Works	9,799.2	06/11/2006	No
F/L #23	Fork Lift	YALE	2001	LPG	Off Airport	180	Yes - Works	10,909.5	06/11/2006	No
F/L #25	Fork Lift	YALE	2002	LPG	Off Airport	180	Yes - Works	7,918.3	06/11/2006	No
F/L #24	Fork Lift	YALE	2002	LPG	Off Airport	180	Yes - Works	8,489.6	06/11/2006	No
F/L #10	Fork Lift	YALE	2003	gasoline	On-Airport Mobile Fueler		Yes - Works	612.0	06/11/2006	No
F/L #26	Fork Lift	YALE	2003	LPG	Off Airport	180	Yes - Works	6,340.4	06/11/2006	No
F/L #29	Fork Lift	YALE	2004	LPG	Off Airport	180	Yes - Works	3,236.0	06/11/2006	No
F/L #27	Fork Lift	YALE	2004	LPG	Off Airport	180	Yes - Works	3,258.7	06/11/2006	No
F/L #28	Fork Lift	YALE	2004	LPG	Off Airport	180	Yes - Works	3,731.8	06/11/2006	No
F/L #30	Fork Lift	YALE	2005	LPG	Off Airport	180	Yes - Works	1,161.0	06/11/2006	No
F/L #31	Fork Lift	YALE	2005	LPG	Off Airport	180	Yes - Works	1,308.0	06/11/2006	No
13	Fork Lift	Yale		electric	Off Airport		Yes - Works	14,366.0	06/15/2006	No
375753	Fork Lift	YALE		LPG	Off Airport	95				No
261975	Fork Lift	YALEX	1989	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
310051	Fork Lift	YALEX	1989	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
507227	Fork Lift	YALEX	1993	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
516040	Fork Lift	YALEX	1993	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
300930	Fork Lift	YALEX	1994	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
524286	Fork Lift	YALEX	1994	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
236383	Fork Lift	YALEX	1997	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
282289	Fork Lift	YALEX	1997	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
250544	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
269171	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
293930	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
351267	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
362649	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
384503	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
391048	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
411894	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
448462	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
474733	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
482237	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
496412	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
527450	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
561904	Fork Lift	YALEX	1998	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
398580	Fork Lift	YALEX	2000	LQ PRPN	On-Airport Mobile Fueler	45	Yes - Works			No
374325	Fork Lift	YALEX	2001	ELECTRIC	On-Airport Stationary	45	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
405944	Fork Lift	YALEX	2001	LQ PRPN	On-Airport Stationary	45	Yes - Works			No
558117	Fork Lift		1985	LP	On-Airport Stationary		Yes - Works	388.0	11/20/01	No
232659	Fork Lift		1985	GAS	On-Airport Stationary		Yes - Works	6,483.0	02/14/02	No
527926	Fork Lift		1991	ELEC	On-Airport Stationary		Yes - Works	5,927.0	01/03/02	No
465024	Fork Lift		1996	ELEC	On-Airport Stationary		Yes - Works	4,457.0	03/23/06	No
226800	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
304395	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
304878	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
330638	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
340039	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
394786	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
420448	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
435533	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
477589	Fork Lift		2001	LP	On-Airport Stationary		Yes - Works			No
8719	Fork Lift			Diesel	On-Airport Mobile Fueler		Yes - Works	554.0	11/01/2006	No
8792	Fork Lift			Diesel	On-Airport Mobile Fueler		Yes - Works	724.0	11/01/2006	No
1065	Fork Lift			LPG	On-Airport Mobile Fueler		Yes - Works	1,772.0	11/01/2006	No
8717	Fork Lift			Diesel	On-Airport Mobile Fueler		Yes - Works	3,128.0	11/01/2006	No
8722	Fork Lift			LPG	On-Airport Mobile Fueler		Yes - Works	3,883.0	11/01/2006	No
8713	Fork Lift			Diesel	On-Airport Mobile Fueler		Yes - Works	7,620.0	11/01/2006	No
64285	Fuel Truck	Bosserman	1997	diesel	On-Airport Mobile Fueler		Yes - Works			
64339	Fuel Truck	Bosserman	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
292565	Fuel Truck	CRANE CARRIER CORP.	1997	DIESEL	On-Airport Stationary	137	Yes - Works	2,893.0	05/15/06	No
09-060	Fuel Truck	FORD	1971	LPG	On-Airport Stationary	140	Yes - Works	31.0	05/19/2006	
344659	Fuel Truck	FORD	1974	LPG	On-Airport Stationary	95	Yes - Works	3,438.0	05/15/06	Yes - Other
09-851	Fuel Truck	FORD	1982	gasoline	On-Airport Stationary	140	Yes - Works	6,354.0	05/19/2006	
332269	Fuel Truck	FORD	1990	GASOLINE		140				Yes - Other
64282	Fuel Truck	Ford	1998	diesel	On-Airport Mobile Fueler		Yes - Works			
431172	Fuel Truck	FORD	1999	GASOLINE		173				Yes - Other
FT3	Fuel Truck	Ford F700	1991	Diesel	On-Airport Mobile Fueler					Yes - Other
64200	Fuel Truck	Garsite	1991	diesel	On-Airport Mobile Fueler		Yes - Works			
285600	Fuel Truck	GENERAL MOTORS	1981	GASOLINE		105				Yes - Light Duty
64134	Fuel Truck	GTI	1987	diesel	On-Airport Mobile Fueler		Yes - Works			
64298	Fuel Truck	GTI	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
64299	Fuel Truck	GTI	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
64170	Fuel Truck	GTI	2002	diesel	On-Airport Mobile Fueler		Yes - Works			
64372	Fuel Truck	GTI	2005	diesel	On-Airport Mobile Fueler		Yes - Works			
1HTM5AAR95H158489	Fuel Truck	International	2005	diesel	On-Airport Mobile Fueler	225	Yes - Works	1,172.0	06/07/2006	Yes - Other
GFU001	Fuel Truck	ISUZU	2002	Diesel	On-Airport Mobile Fueler	200	Yes - Works	34,856.0		Yes - Other
291116	Fuel Truck	LIFT-A-LOFT	2001	DIESEL		175				No
528500	Fuel Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	137	Yes - Works	3,610.0	05/15/06	Yes - Other
7128	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	2,568.0	11/01/2006	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
2241	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	3,404.0	11/01/2006	No
2297	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	6,190.0	11/01/2006	No
2265	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	6,211.0	11/01/2006	No
17151	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	6,426.0	11/01/2006	No
10145	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	6,607.0	11/01/2006	No
2262	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	9,190.0	11/01/2006	No
2234	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	10,111.0	11/01/2006	No
17127	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	11,147.0	11/01/2006	No
22878	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	#######	11/01/2006	No
2264	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	894.0	11/01/2006	Yes - Other
2249	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	1,679.0	11/01/2006	Yes - Other
2266	Fuel Truck			Diesel	On-Airport Stationary		Yes - Works	5,596.0	11/01/2006	Yes - Other
2270	Fuel Truck			Gasoline	On-Airport Stationary		Yes - Works	5,707.0	11/01/2006	Yes - Other
2250	Fuel Truck			Gasoline	On-Airport Stationary		Yes - Works	6,550.0	11/01/2006	Yes - Other
440755	Generator	AMMFG	1980	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
554407	Generator	AMMFG	1980	DIESEL	On-Airport Mobile Fueler	90	Yes - Works			No
261338	Generator	DEUTZ	1999	DIESEL	On-Airport Stationary	135	Yes - Works	2,115.0	11/24/01	No
554134	Generator	DEUTZ	1999	DIESEL	On-Airport Stationary	135	Yes - Works	1,300.0	06/07/06	No
517006	Generator	DEUTZ	1999	DIESEL	On-Airport Stationary	135	Yes - Works	9,521.0	06/08/06	No
352422	Generator	DEUTZ	2000	DIESEL	On-Airport Stationary	135	Yes - Works	8,180.0	06/06/06	No
551145	Generator	DEUTZ	2000	DIESEL	On-Airport Stationary	135	Yes - Works	7,259.0	06/07/06	No
444794	Generator	DEUTZ	2000	DIESEL	On-Airport Stationary	135	Yes - Works	8,975.0	06/07/06	No
333599	Generator	DEUTZ	2000	DIESEL	On-Airport Stationary	135	Yes - Works	9,213.0	06/09/06	No
304563	Generator	DEUTZ	2001	DIESEL	On-Airport Stationary	134	Yes - Works	8,002.0	06/02/06	No
374262	Generator	FORD	1986	GAS	On-Airport Stationary		Yes - Works	3,394.0	05/25/06	No
299712	Generator	FORD	1986	GAS	On-Airport Stationary	118	Yes - Works	8,811.0	06/09/06	No
512225	Generator	FORD	1996	GAS	On-Airport Stationary		Yes - Works	14,571.0	11/28/01	No
290913	Generator	FORD	1996	GAS	On-Airport Stationary	118	Yes - Works	2,281.0	05/20/06	No
343980	Generator	FORD	1996	GAS	On-Airport Stationary	118	Yes - Works	6,041.0	06/01/06	No
316379	Generator	FORD	1997	GAS	On-Airport Stationary	118	Yes - Works	3,055.0	06/03/06	No
461118	Generator		2001	DIESEL	On-Airport Stationary		Yes - Works	8,208.0	04/06/06	No
404180	Ground Power Unit	ACE EQUIPMENT CO.	1996	DIESEL	On-Airport Stationary	194	Yes - Works	4,060.0	05/15/06	No
421078	Ground Power Unit	ACE EQUIPMENT CO.	1996	DIESEL	On-Airport Stationary	194	Yes - Works	4,892.0	05/15/06	No
321069	Ground Power Unit	ACE EQUIPMENT CO.	1996	DIESEL	On-Airport Stationary	194	Yes - Works	5,165.0	05/15/06	No
398503	Ground Power Unit	ACE EQUIPMENT CO.	1996	DIESEL	On-Airport Stationary	194	Yes - Works	8,030.0	05/15/06	No
478135	Ground Power Unit	ACE EQUIPMENT CO.	1996	DIESEL	On-Airport Stationary	194	Yes - Works	11,323.0	05/15/06	No
382333	Ground Power Unit	ACE EQUIPMENT CO.	1997	DIESEL	On-Airport Stationary	194	Yes - Works	2,690.0	05/15/06	No
316344	Ground Power Unit	ARVIC	1996	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
410214	Ground Power Unit	ARVICO	1997	DIESEL	On-Airport Mobile Fueler	181	Yes - Works	3,810.0	05/15/06	No
469098	Ground Power Unit	ARVICO	2000	DIESEL	On-Airport Mobile Fueler	99	Yes - Works	1,777.0	05/15/06	No
391125	Ground Power Unit	ARVICO	2000	DIESEL	On-Airport Mobile Fueler	181	Yes - Works	4,332.0	05/15/06	No
553203	Ground Power Unit	ARVICO	2000	DIESEL	On-Airport Mobile Fueler	181	Yes - Works	4,742.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
419538	Ground Power Unit	ARVICO	2000	DIESEL	On-Airport Mobile Fueler	116	Yes - Works	6,390.0	05/15/06	No
PU 3940	Ground Power Unit	ARVICO	2000	diesel	On-Airport Mobile Fueler	116	Yes - Works	6,570.0	05/22/2006	No
PU 4090	Ground Power Unit	ARVICO	2000	diesel	On-Airport Mobile Fueler	152	Yes - Works	6,954.0	05/22/2006	No
PU 4050	Ground Power Unit	ARVICO	2000	diesel	On-Airport Mobile Fueler	152	Yes - Works	7,006.0	05/22/2006	No
PU 4080	Ground Power Unit	ARVICO	2000	diesel	On-Airport Mobile Fueler	152	Yes - Works	7,772.0	05/22/2006	No
521332	Ground Power Unit	ARVICO	2001	DIESEL	On-Airport Mobile Fueler	116	Yes - Works	3,056.0	05/15/06	No
233709	Ground Power Unit	ARVICO	2003	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	1,850.0	05/15/06	No
PU8	Ground Power Unit	Arvico KVA-120	1998	Diesel	On-Airport Mobile Fueler					No
343532	Ground Power Unit	CUMMINS	1999	DIESEL	On-Airport Stationary	165	Yes - Works	3,388.0	01/08/02	No
416353	Ground Power Unit	CUMMINS	2001	DIESEL	On-Airport Stationary	200	Yes - Works	4,169.0	05/20/06	No
417928	Ground Power Unit	DAVCO	1999	ELECTRIC		149				No
428526	Ground Power Unit	DAVCO	1999	ELECTRIC		149				No
558971	Ground Power Unit	DAVCO	1999	ELECTRIC		149				No
276556	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
277480	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
394275	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
397215	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
419818	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
461832	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
488390	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
514535	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
550872	Ground Power Unit	DAVCO	2000	ELECTRIC		149				No
227402	Ground Power Unit	FORD	1976	GAS	On-Airport Stationary		Yes - Works	4,505.0	02/12/02	No
401681	Ground Power Unit	FORD	1977	GAS	On-Airport Stationary		Yes - Works	2,563.0	01/17/02	No
480795	Ground Power Unit	FORD	1977	GAS	On-Airport Stationary		Yes - Works	4,702.0	05/09/06	No
416787	Ground Power Unit	FORD	1986	GAS	On-Airport Stationary		Yes - Works	4,330.0	01/24/01	No
220941	Ground Power Unit	FORD	1998	GAS	On-Airport Stationary		Yes - Works	1,805.0	11/29/01	No
280266	Ground Power Unit	FORD	1998	GAS	On-Airport Stationary		Yes - Works	17.0	02/07/02	No
560882	Ground Power Unit	FORD	1999	GAS	On-Airport Stationary		Yes - Works	459.0	11/02/01	No
236509	Ground Power Unit	FORD	1999	GAS	On-Airport Stationary		Yes - Works	79,395.0	12/05/01	No
492842	Ground Power Unit	FORD	2000	GAS	On-Airport Stationary		Yes - Works	200.0	10/21/00	No
403067	Ground Power Unit	FORD	2000	GAS	On-Airport Stationary		Yes - Works	461.0	10/21/00	No
263676	Ground Power Unit	FORD	2000	GAS	On-Airport Stationary		Yes - Works	4,356.0	07/24/01	No
312676	Ground Power Unit	FORD	2000	GAS	On-Airport Stationary		Yes - Works	5,276.0	08/07/01	No
511798	Ground Power Unit	FORD	2000	GAS	On-Airport Stationary		Yes - Works	29,213.0	10/15/01	No
504735	Ground Power Unit	FORD	2000	CNG	On-Airport Stationary		Yes - Works	5,092.0	12/06/01	No
303289	Ground Power Unit	FORD		GAS	On-Airport Stationary		Yes - Works	1,216.0	04/15/06	No
469203	Ground Power Unit	HOBART	1971	DIESEL		150				No
241472	Ground Power Unit	HOBART	1979	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	3,165.0	05/15/06	No
297843	Ground Power Unit	HOBART	1979	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	7,478.0	05/15/06	No
412888	Ground Power Unit	HOBART	1990	DIESEL		70				No
497784	Ground Power Unit	HOBART	1992	DIESEL		70				No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
11178	Ground Power Unit	Hobart	1995	diesel	On-Airport Mobile Fueler		Yes - Works			
11181	Ground Power Unit	Hobart	1995	diesel	On-Airport Mobile Fueler		Yes - Works			
216307	Ground Power Unit	HOBART	1997	DIESEL	On-Airport Mobile Fueler					No
460341	Ground Power Unit	HOBART	1997	DIESEL	On-Airport Mobile Fueler					No
11200	Ground Power Unit	Hobart	1997	diesel	On-Airport Mobile Fueler		Yes - Works			
234045	Ground Power Unit	HOBART	1998	DIESEL	On-Airport Mobile Fueler					No
270550	Ground Power Unit	HOBART	1998	DIESEL	On-Airport Mobile Fueler					No
275156	Ground Power Unit	HOBART	1998	DIESEL	On-Airport Mobile Fueler					No
511763	Ground Power Unit	HOBART	1998	DIESEL	On-Airport Mobile Fueler					No
11212	Ground Power Unit	Hobart	1998	diesel	On-Airport Mobile Fueler		Yes - Works			
11214	Ground Power Unit	Hobart	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
11215	Ground Power Unit	Hobart	1999	diesel	On-Airport Mobile Fueler		Yes - Works			
255871	Ground Power Unit	HOBART	2000	DIESEL	On-Airport Mobile Fueler	160	Yes - Works	1,881.0	06/01/06	No
262479	Ground Power Unit	HOBART	2000	DIESEL	On-Airport Mobile Fueler	160	Yes - Works	4,076.0	06/01/06	No
GPU1	Ground Power Unit	HOBART	2001	diesel	On-Airport Mobile Fueler	200	Yes - Works	5,791.0	06/13/2006	No
GPU508	Ground Power Unit	Hobart	2001	Diesel	On-Airport Mobile Fueler	520	Yes - Works	834.0		No
11232	Ground Power Unit	Hobart	2001	diesel	On-Airport Mobile Fueler		Yes - Works			
S/N: 402P506950	Ground Power Unit	Hobart	2003	diesel	On-Airport Mobile Fueler	110	Yes - Works	82.0	06/07/2006	No
GPU2	Ground Power Unit	HOBART	2004	diesel	On-Airport Mobile Fueler	200	Yes - Works	2,704.0	06/13/2006	No
GPU002	Ground Power Unit	Hobart	2004	Diesel	On-Airport Mobile Fueler	520	Yes - Works	3,068.2		No
GPU509QF	Ground Power Unit	Hobart	2004	Diesel	On-Airport Mobile Fueler	520	Yes - Works	4,270.0		No
GPU510QF	Ground Power Unit	Hobart	2004	Diesel	On-Airport Mobile Fueler	520	Yes - Works	5,917.8		No
GPU511	Ground Power Unit	Hobart	2005	Diesel	On-Airport Mobile Fueler	520	Yes - Works	2,457.3		No
GPU	Ground Power Unit	HOBART		gasoline	On-Airport Mobile Fueler		Yes - Works	698.9	06/11/2006	No
414323	Ground Power Unit	HOBRT	1997	DIESEL	On-Airport Mobile Fueler	215	Yes - Works			No
457016	Ground Power Unit	HOBRT	1997	DIESEL	On-Airport Mobile Fueler	215	Yes - Works			No
501949	Ground Power Unit	HOBRT	1997	DIESEL	On-Airport Mobile Fueler	215	Yes - Works			No
335846	Ground Power Unit	HOBRT	1998	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
358120	Ground Power Unit	HOBRT	1998	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
414029	Ground Power Unit	HOBRT	1998	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
529354	Ground Power Unit	HOBRT	1998	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
533169	Ground Power Unit	HOBRT	1998	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
289282	Ground Power Unit	HOBRT	1999	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
324618	Ground Power Unit	HOBRT	1999	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
376110	Ground Power Unit	HOBRT	1999	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
461601	Ground Power Unit	HOBRT	1999	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
464758	Ground Power Unit	HOBRT	1999	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
384328	Ground Power Unit	HOBRT	2001	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
106736	Ground Power Unit	International	1979	diesel	On-Airport Mobile Fueler		Yes - Works			
288946	Ground Power Unit	S AND S	1987	DIESEL		140				No
356181	Ground Power Unit	STEWART & STEVENSON	1996	DIESEL	On-Airport Stationary	194	Yes - Works	150.0	05/15/06	No
540204	Ground Power Unit	STEWART & STEVENSON	1997	DIESEL	On-Airport Stationary	189	Yes - Works	173.0	05/15/06	No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
232281	Ground Power Unit	STWST	1996	DIESEL	On-Airport Mobile Fueler	180	Yes - Works			No
266077	Ground Power Unit	TLD	2005	DIESEL	On-Airport Mobile Fueler	228	Yes - Works	6.0	06/02/06	No
533554	Ground Power Unit	TLD	2006	DIESEL	On-Airport Mobile Fueler	228	Yes - Works	2.7	06/02/06	No
385140	Ground Power Unit	TLD	2006	DIESEL	On-Airport Mobile Fueler	228	Yes - Works	6.7	06/02/06	No
PU9	Ground Power Unit	TLD KVA-140	2003	Diesel	On-Airport Mobile Fueler					No
246449	Ground Power Unit	TRILECTRON	1997	DIESEL	On-Airport Mobile Fueler	194	Yes - Works	2,754.0	06/02/06	No
267449	Ground Power Unit	TRILECTRON	1997	DIESEL		150				No
463680	Ground Power Unit	TRILECTRON	1998	DIESEL	On-Airport Mobile Fueler	152	Yes - Works			No
520730	Ground Power Unit	TRILECTRON	2000	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	4,055.0	05/15/06	No
PU 4130	Ground Power Unit	TRILECTRON	2001	diesel	On-Airport Mobile Fueler	152	Yes - Works	5,665.0	05/22/2006	No
445739	Ground Power Unit	TRILECTRON	2001	DIESEL	On-Airport Mobile Fueler	152	Yes - Works			No
449463	Ground Power Unit	TRILECTRON	2001	DIESEL	On-Airport Mobile Fueler	152	Yes - Works			No
GPU 329	Ground Power Unit	Trilectron		diesel	On-Airport Mobile Fueler		Yes - Works			
GPU 209	Ground Power Unit	Trilectron		diesel	On-Airport Mobile Fueler		Yes - Works			
GPU 330	Ground Power Unit	Trilectron		diesel	On-Airport Mobile Fueler		Yes - Works			
499527	Ground Power Unit	TRILECTRON	1993	DIESEL	On-Airport Stationary	200	Yes - Works	3,496.0	05/15/06	No
305732	Ground Power Unit	TRILECTRON	1993	DIESEL	On-Airport Stationary	200	Yes - Works	5,275.0	05/15/06	No
275569	Ground Power Unit	TRILECTRON	1993	DIESEL	On-Airport Stationary	200	Yes - Works	8,585.0	05/15/06	No
258727	Ground Power Unit		1998	GAS	On-Airport Stationary		Yes - Works	750.0	08/23/01	No
7624	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	850.0	11/01/2006	No
8732	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	1,458.0	11/01/2006	No
8781	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	1,874.0	11/01/2006	No
8730	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	2,354.0	11/01/2006	No
8775	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	2,366.0	11/01/2006	No
8015	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	2,655.0	11/01/2006	No
13193	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	3,828.0	11/01/2006	No
8828	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	4,124.0	11/01/2006	No
8734	ground power unit			Diesel	On-Airport Mobile Fueler		Yes - Works	5,967.0	11/01/2006	No
333200	Ground Power Unit			DIESEL	On-Airport Mobile Fueler					No
471786	Ground Power Unit			DIESEL	On-Airport Mobile Fueler					No
HL3	High Lift/Catering	Ford	1987	Gasoline	On-Airport Mobile Fueler					
HL2	High Lift/Catering	Ford	1988	Diesel	On-Airport Mobile Fueler					
HL1	High Lift/Catering	Ford	1989	Diesel	On-Airport Mobile Fueler					
228998	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
242977	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
263102	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
353017	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
353969	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
361914	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
392854	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
554904	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other
559405	Hydrant Truck	FORD	1997	GASOLINE		95				Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
329924	Hydrant Truck	FORD	1993	DIESEL	On-Airport Stationary	131	Yes - Works	3,495.0	05/15/06	Yes - Other
426153	Hydrant Truck	FORD	1993	DIESEL	On-Airport Stationary	131	Yes - Works	4,738.0	05/15/06	Yes - Other
531286	Hydrant Truck	FORD	1993	DIESEL	On-Airport Stationary	131	Yes - Works	12,278.0	05/15/06	Yes - Other
502040	Hydrant Truck	FORD	1995	DIESEL	On-Airport Stationary	131	Yes - Works	10,870.0	05/15/06	Yes - Other
407589	Hydrant Truck	GARSITE	1988	GASOLINE		94				No
441504	Hydrant Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	131	Yes - Works	18,638.0	05/15/06	Yes - Other
243341	Hydrant Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	131	Yes - Works	19,141.0	05/15/06	Yes - Other
523516	Hydrant Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	131	Yes - Works	20,092.0	05/15/06	Yes - Other
532301	Hydrant Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	131	Yes - Works	21,180.0	05/15/06	Yes - Other
249109	Hydrant Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	131	Yes - Works	22,183.0	05/15/06	Yes - Other
482580	Hydrant Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	131	Yes - Works	11,218.0	05/15/06	Yes - Other
254793	Hydrant Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	131	Yes - Works	11,868.0	05/15/06	Yes - Other
476056	Hydrant Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	131	Yes - Works	12,003.0	05/15/06	Yes - Other
524811	Hydrant Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	131	Yes - Works	13,744.0	05/15/06	Yes - Other
222131	Hydrant Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	131	Yes - Works	14,948.0	05/15/06	Yes - Other
524272	Hydrant Truck	NAVISTAR	1999	DIESEL	On-Airport Stationary	131	Yes - Works	15,168.0	05/15/06	Yes - Other
236166	Hydrant Truck	TRI STATE	1987	GASOLINE		175				Yes - Other
553322	Lavatory Truck	ACE-DEVTEC-NORDCO	1999	GASOLINE		97				No
480333	Lavatory Truck	ACE-DEVTEC-NORDCO	2000	GASOLINE		97				No
531587	Lavatory Truck	ACE-DEVTEC-NORDCO	2000	GASOLINE		97				No
483287	Lavatory Truck	FORD	1985	GASOLINE	On-Airport Stationary	120	Yes - Works	7,326.0	05/15/06	Yes - Other
243082	Lavatory Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	393.0	01/09/02	Yes - Other
497924	Lavatory Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	441.0	01/16/02	Yes - Other
284452	Lavatory Truck	FORD	1989	GASOLINE	On-Airport Mobile Fueler					Yes - Other
334684	Lavatory Truck	FORD	1991	GAS	On-Airport Stationary		Yes - Works	1,949.0	10/21/00	Yes - Other
508004	Lavatory Truck	FORD	1991	GAS	On-Airport Stationary		Yes - Works	184.0	08/06/01	Yes - Other
471086	Lavatory Truck	FORD	1993	GASOLINE	On-Airport Mobile Fueler	210	Yes - Works	2,081.0	06/02/06	Yes - Light Duty
LSU722	Lavatory Truck	Ford	1995	Gasoline	On-Airport Mobile Fueler	190	Yes - Works	577.0		No
426272	Lavatory Truck	FORD	1995	GASOLINE		173				Yes - Other
498512	Lavatory Truck	FORD	1996	GASOLINE	On-Airport Mobile Fueler	210	Yes - Works	2,237.0	06/02/06	Yes - Light Duty
509082	Lavatory Truck	FORD	1996	GASOLINE		173				Yes - Other
319676	Lavatory Truck	FORD	1997	GASOLINE		173				Yes - Other
341789	Lavatory Truck	FORD	1997	GASOLINE		173				Yes - Other
LSU720	Lavatory Truck	Ford	1999	Diesel	On-Airport Mobile Fueler	190	Yes - Works	6,550.0		No
475146	Lavatory Truck	FORD	1999	GAS	On-Airport Stationary		Yes - Works	12,120.0	10/21/00	Yes - Other
432796	Lavatory Truck	FORD	2002	GASOLINE	On-Airport Mobile Fueler	195	Yes - Works	1,179.0	06/02/06	Yes - Light Duty
460656	Lavatory Truck	FORD	2002	GASOLINE	On-Airport Mobile Fueler	195	Yes - Works	1,361.0	06/02/06	Yes - Light Duty
LAV6	Lavatory Truck	Ford F250	1986	Gasoline	On-Airport Mobile Fueler					
LAV2	Lavatory Truck	Ford F600	1988	Gasoline	On-Airport Mobile Fueler					
LAV3	Lavatory Truck	Ford F600	1990	Diesel	On-Airport Mobile Fueler					
LAV1	Lavatory Truck	Ford F600	1992	Gasoline	On-Airport Mobile Fueler					
522207	Lavatory Truck	FORD/STINAR	2000	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
556542	Lavatory Truck	FORD/WOLLARD	2000	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
13-024	Lavatory Truck	ISUZU	1997	diesel	On-Airport Stationary	135	Yes - Works	6,011.0	05/19/2006	
518098	Lavatory Truck	NAVISTAR	1996	DIESEL	On-Airport Stationary	147	Yes - Works	2,965.0	05/15/06	Yes - Other
311143	Lavatory Truck	NAVISTAR	1996	DIESEL	On-Airport Stationary	147	Yes - Works	8,283.0	05/15/06	Yes - Other
457548	Lavatory Truck	NAVISTAR	1997	DIESEL	On-Airport Stationary	147	Yes - Works	10,111.0	05/15/06	Yes - Other
439957	Lavatory Truck	NAVISTAR	2000	DIESEL	On-Airport Stationary	147	Yes - Works	14,769.0	05/15/06	Yes - Other
330015	Lavatory Truck	NAVISTAR	2000	DIESEL	On-Airport Stationary	147	Yes - Works	15,028.0	05/15/06	Yes - Other
331758	Lavatory Truck	NAVISTAR	2000	DIESEL	On-Airport Stationary	147	Yes - Works	16,748.0	05/15/06	Yes - Other
383670	Lavatory Truck	NORDC	1987	GASOLINE	On-Airport Mobile Fueler	150	Yes - Works			Yes - Other
LAV5	Lavatory Truck	Steiner		Gasoline	On-Airport Mobile Fueler					
LAV4	Lavatory Truck	TLD 1410	1998	Gasoline	On-Airport Mobile Fueler					
25133	Lavatory Truck	Wollard	1992	gasoline	On-Airport Mobile Fueler		Yes - Works			
25144	Lavatory Truck	Wollard	1996	gasoline	On-Airport Mobile Fueler		Yes - Works			
24154	Lavatory Truck	Wollard	1998	gasoline	On-Airport Mobile Fueler		Yes - Works			
25153	Lavatory Truck	Wollard	1999	gasoline	On-Airport Mobile Fueler		Yes - Works			
25156	Lavatory Truck	Wollard	1999	gasoline	On-Airport Mobile Fueler		Yes - Works			
523061	Lavatory Truck		2006		On-Airport Stationary		Yes - Works	2.0	06/07/06	Yes - Other
8483	Lavatory Truck			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,245.0	11/01/2006	
8723	Lavatory Truck			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,271.0	11/01/2006	
2289	Lavatory Truck			Gasoline	On-Airport Mobile Fueler		Yes - Works	4,039.0	11/01/2006	
506534	Lift	ACE-DEVTEC-NORDCO	1980	GASOLINE		103				No
452088	Lift	ACE-DEVTEC-NORDCO	1989	GASOLINE		103				No
345079	Lift	ACE-DEVTEC-NORDCO	1993	LPG		170				Yes - Other
MLU002 A/C	Lift	CargoKing	1995	Gasoline	On-Airport Mobile Fueler	120	Yes - Works	29.9		No
MT 174	Lift	Chev.	2000	gasoline	Off Airport	300	Yes - Works	275.0		
470379	Lift	COCHR	1961	GASOLINE	On-Airport Stationary	114	Yes - Works	2,472.0	05/15/06	No
403802	Lift	COCHR	1970	GASOLINE	On-Airport Stationary	114	Yes - Works	2,135.0	05/15/06	No
253988	Lift	ELLIOTT-INTL	2001	DIESEL		175				No
MDL1	Lift	FMC 40	1978	Propane	On-Airport Mobile Fueler					
MDL2	Lift	FMC 40	1979	Propane	On-Airport Mobile Fueler					
MDL4	Lift	FMC 40	1984	Gasoline	On-Airport Mobile Fueler					
MDL3	Lift	FMC 40	1997	Diesel	On-Airport Mobile Fueler					
414246	Lift	FORD	1968	LPG	On-Airport Stationary		Yes - Works	1,153.0	05/15/06	No
268821	Lift	FORD	1969	LPG	On-Airport Stationary	95	Yes - Works	9,532.0	05/15/06	No
464387	Lift	FORD	1981	LPG		170				Yes - Other
558831	Lift	FORD	1984	GASOLINE	On-Airport Mobile Fueler					No
382606	Lift	FORD	1989	LPG		173				Yes - Other
391769	Lift	FORD	1991	LPG		170				Yes - Other
477057	Lift	FORD	1992	GASOLINE		170				Yes - Other
MT 265	Lift	Ford	1993	gasoline	Off Airport	300	Yes - Works	16.0		
MT 216	Lift	Ford	1993	gasoline	Off Airport	300	Yes - Doesn't Work			
MT269	Lift	Ford	1994	gasoline	Off Airport	300	Yes - Doesn't Work			

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
246267	Lift	FORD	1996	GASOLINE	On-Airport Mobile Fueler					No
MLU003 A/C	Lift	FORD	1997	Gasoline	On-Airport Mobile Fueler	300	Yes - Works	2,079.3		No
278929	Lift	FORD	1998	LP	On-Airport Stationary		Yes - Works	268.0	01/25/01	Yes - Other
282681	Lift	FORD	2001	DIESEL	On-Airport Mobile Fueler	210		834.0	05/15/06	No
366415	Lift	FORD		GASOLINE	On-Airport Mobile Fueler	140				No
243971	Lift	FORD	1992	DIESEL	On-Airport Stationary	114	Yes - Works	5,102.0	05/15/06	Yes - Other
277144	Lift	FORD	1993	DIESEL	On-Airport Stationary	114	Yes - Works	6,304.0	05/15/06	Yes - Other
503167	Lift	FREIGHTLINER	1996	GASOLINE	On-Airport Stationary	114	Yes - Works	0.0	05/15/06	No
223020	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	3,398.0	05/15/06	Yes - Other
268009	Lift	FREIGHTLINER	2001	DIESEL	On-Airport Stationary	114	Yes - Works	3,035.0	05/15/06	Yes - Other
451633	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	0.0	05/15/06	Yes - Other
468860	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	0.0	05/15/06	Yes - Other
376005	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	1,437.0	05/15/06	Yes - Other
343637	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	2,005.0	05/15/06	Yes - Other
357182	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	2,588.0	05/15/06	Yes - Other
440937	Lift	FREIGHTLINER	1996	DIESEL	On-Airport Stationary	114	Yes - Works	2,756.0	05/15/06	Yes - Other
362642	Lift	FREIGHTLINER	1997	DIESEL	On-Airport Stationary	114	Yes - Works	0.0	05/15/06	Yes - Other
271257	Lift	GENIE	2000	ELECTRIC		101				No
538818	Lift	GENIE	2000	ELECTRIC		101				No
409731	Lift	GENIE	2004	ELECTRIC	On-Airport Stationary		Yes - Works	3.0	06/01/06	No
483658	Lift	GROVE	1988	LPG	On-Airport Stationary	25	Yes - Works	2,834.0	05/15/06	No
346122	Lift	ISCXX	1970	GASOLINE	On-Airport Stationary	114	Yes - Works	2,500.0	05/15/06	No
303261	Lift	JLG	1990	LPG	On-Airport Mobile Fueler	46	Yes - Works	2,804.0	06/02/06	No
427994	Lift	JLG	2000	GASOLINE	On-Airport Mobile Fueler	54	Yes - Works			No
450331	Lift	JLG	2000	GASOLINE	On-Airport Mobile Fueler	54	Yes - Works			No
415191	Lift	JLG	2000	DIESEL		26				No
223391	Lift	JLG	2001	LPG	On-Airport Stationary	89	Yes - Works	1,671.0	05/15/06	No
378518	Lift	JLG	2004	ELECTRIC			Yes - Works	132.0	05/15/06	No
234654	Lift	JLG	2004	ELECTRIC			Yes - Works	140.0	05/15/06	No
446243	Lift	JLG	2005	LPG	On-Airport Mobile Fueler	48	Yes - Works	27.0	06/02/06	No
406721	Lift	JLG	1995	LPG	On-Airport Stationary	114	Yes - Works	1,516.0	05/15/06	No
514283	Lift	JLG	1997	LPG	On-Airport Stationary	114	Yes - Works	1,700.0	05/15/06	No
423815	Lift	JLG	1997	LPG	On-Airport Stationary	114	Yes - Works	1,863.0	05/15/06	No
278019	Lift	JLG	1997	DIESEL	On-Airport Stationary	114	Yes - Works	4,179.0	05/15/06	No
541408	Lift	JLG	1998	GASOLINE	On-Airport Stationary	114	Yes - Works	484.0	05/15/06	No
511973	Lift	JLG	1998	ELECTRIC	On-Airport Stationary	114	Yes - Works	656.0	05/15/06	No
335944	Lift	JLG	1998	ELECTRIC	On-Airport Stationary	114	Yes - Works	659.0	05/15/06	No
S/N: 0300028524	Lift	JLG Industries	1996	electric	On-Airport Stationary	10	Yes - Works	100.6	06/07/2006	No
229432	Lift	JLGIN	2005	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
407050	Lift	JLGIN	2005	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
450926	Lift	KRANEKAR	1963	DIESEL		95				No
330631	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
332612	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
358582	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
408527	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
436744	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
494809	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
561120	Lift	LFTAL	1998	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
234311	Lift	LFTAL	1998	GASOLINE	On-Airport Stationary	114	Yes - Works			No
300363	Lift	LFTAL	1998	GASOLINE	On-Airport Stationary	114	Yes - Works			No
217350	Lift	LFTAL	2000	ELECTRIC	On-Airport Stationary	114	Yes - Works			No
322833	Lift	LFTAL	2000	ELECTRIC	On-Airport Stationary	114	Yes - Works			No
432908	Lift	LFTAL	2000	ELECTRIC	On-Airport Stationary	114	Yes - Works			No
438431	Lift	LFTAL	2000	ELECTRIC	On-Airport Stationary	114	Yes - Works			No
498848	Lift	LFTAL	2000	ELECTRIC	On-Airport Stationary	114	Yes - Works			No
526673	Lift	LFTAL	2000	ELECTRIC	On-Airport Stationary	114	Yes - Works			No
227941	Lift	LFTAL	2001	GASOLINE	On-Airport Mobile Fueler	114	Yes - Works			No
215859	Lift	LIFT-A-LOFT	1985	ELECTRIC		101				No
351897	Lift	LIFT-A-LOFT	1988	ELECTRIC		101				No
330372	Lift	LIFT-A-LOFT	1996	GASOLINE		170				No
275597	Lift	LIFT-A-LOFT	2000	ELECTRIC		101				No
288008	Lift	LIFT-A-LOFT	2000	ELECTRIC		101				No
323001	Lift	LIFT-A-LOFT	2000	ELECTRIC		101				No
363146	Lift	LIFT-A-LOFT	2000	ELECTRIC		101				No
526372	Lift	LIFT-A-LOFT	2000	ELECTRIC		101				No
532483	Lift	LIFT-A-LOFT	2000	ELECTRIC		101				No
367339	Lift	LIFT-A-LOFT	2001	ELECTRIC		101				No
381199	Lift	LIFT-A-LOFT	2001	ELECTRIC		101				No
461328	Lift	LIFT-A-LOFT	2001	ELECTRIC		101				No
543480	Lift	LIFT-A-LOFT	2001	ELECTRIC		101				No
218428	Lift	LIFT-A-LOFT	2001	DIESEL		175				No
293314	Lift	LIFT-A-LOFT	2001	DIESEL		175				No
428547	Lift	LIFT-A-LOFT	2001	DIESEL		175				No
489209	Lift	LIFT-A-LOFT	2001	DIESEL		175				No
520177	Lift	LIFT-A-LOFT	2001	DIESEL		175				No
243201	Lift	MARK IND	1987	ELECTRIC	On-Airport Mobile Fueler	110	Yes - Works			No
270739	Lift	MARK IND	1987	ELECTRIC	On-Airport Mobile Fueler	110	Yes - Works			No
351400	Lift	MARK IND	1987	ELECTRIC	On-Airport Mobile Fueler	110	Yes - Works			No
455483	Lift	MOTREC		ELECTRIC	On-Airport Mobile Fueler					No
475391	Lift	NAVISTAR	2000	DIESEL	On-Airport Stationary	114	Yes - Works	1,145.0	05/15/06	Yes - Other
447608	Lift	NAVISTAR	2000	DIESEL	On-Airport Stationary	114	Yes - Works	1,182.0	05/15/06	Yes - Other
406266	Lift	NAVISTAR	2000	DIESEL	On-Airport Stationary	114	Yes - Works	2,500.0	05/15/06	Yes - Other
284424	Lift	NMC-WOLLARD	1999	DIESEL	On-Airport Mobile Fueler	67	Yes - Works			No
360962	Lift	NMC-WOLLARD	2000	DIESEL	On-Airport Mobile Fueler	67	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
378224	Lift	NORDCO	1980	ELECTRIC	On-Airport Stationary		No		06/01/06	No
355460	Lift	NORDCO/FORD	1974	GASOLINE	On-Airport Mobile Fueler					No
475489	Lift	NORDCO/FORD	1987	LPG	On-Airport Stationary	95	Yes - Works	4,131.0	05/15/06	No
459270	Lift	SELMA	1974	ELECTRIC	On-Airport Mobile Fueler	113	Yes - Works			No
308021	Lift	SELMA	1974	LPG		76				No
443527	Lift	SELMA	1974	LPG		76				No
357399	Lift	SKY CLIMBER	1981	ELECTRIC		101				No
234878	Lift	SKYCLIMBER	1987	ELECTRIC	On-Airport Mobile Fueler	113	Yes - Works			No
469042	Lift	SNORKEL	1988	ELECTRIC		114				No
486955	Lift	SNORKEL	1990	LPG		65				No
535948	Lift	SNORKEL	1990	LPG		65				No
334824	Lift	SNORKEL LIFT	1991	GASOLINE	On-Airport Stationary	114	Yes - Works	253.0	05/15/06	No
397362	Lift	SNORKEL LIFT	1992	GASOLINE	On-Airport Stationary	114	Yes - Works	5,493.0	05/15/06	No
458521	Lift	SNORKEL LIFT	1997	DIESEL	On-Airport Stationary	114	Yes - Works	2,540.0	05/15/06	No
222803	Lift	STINAR	1990	GASOLINE	On-Airport Mobile Fueler					No
347571	Lift	STINAR	1992	GASOLINE	On-Airport Mobile Fueler					No
297269	Lift	STINAR	2001	GASOLINE	On-Airport Mobile Fueler					No
511406	Lift	TESCO	2000	DIESEL	On-Airport Mobile Fueler	310	Yes - Works	5,531.0	05/15/06	No
SPE001	Lift	Trump	1995	LPG	On-Airport Mobile Fueler	250	Yes - Works	6,837.1		No
359373	Lift	UPRIGHT		DIESEL	On-Airport Mobile Fueler			219.0	06/01/06	No
389207	Lift	WASPX	1989	GASOLINE	On-Airport Stationary	114	Yes - Works	3.0	05/15/06	No
430542	Lift	WOLLARD	1989	GASOLINE	On-Airport Mobile Fueler					No
461237	Lift	WOLLARD	1994	GASOLINE	On-Airport Mobile Fueler					No
367185	Lift	WOLLARD	1995	GASOLINE	On-Airport Mobile Fueler					No
521892	Lift	WOLLARD	1996	GASOLINE	On-Airport Mobile Fueler					No
511063	Lift	WOLLARD	2001	GASOLINE	On-Airport Stationary	98	Yes - Works	3,356.0	05/15/06	No
346689	Lift	WOLLARD	1989	DIESEL	On-Airport Stationary	114	Yes - Works	2,757.0	05/15/06	No
361928	Lift	WOLLARD	1989	DIESEL	On-Airport Stationary	114	Yes - Works	3,019.0	05/15/06	No
386813	Lift	WOLLARD	1989	GASOLINE	On-Airport Stationary	114	Yes - Works	3,152.0	05/15/06	No
466445	Lift		1991	ELEC	On-Airport Stationary		Yes - Works			No
476525	Lift		1991	ELEC	On-Airport Stationary		Yes - Works			No
530425	Lift		2001	ELEC	On-Airport Stationary		Yes - Works	25.0	02/04/06	No
CLD27	Lowerdeck Loaders	FMC Commander 15i WB	1987	Diesel	On-Airport Mobile Fueler					No
CLD22	Lowerdeck Loaders	Lantis 818	1997	Diesel	On-Airport Mobile Fueler					No
CLD20	Lowerdeck Loaders	Lantis 818	1998	Diesel	On-Airport Mobile Fueler					No
CLD4	Lowerdeck Loaders	Lantis 818		Diesel	On-Airport Mobile Fueler					No
CLD5	Lowerdeck Loaders	Lantis 818		Diesel	On-Airport Mobile Fueler					No
CLD6	Lowerdeck Loaders	Lantis 818		Diesel	On-Airport Mobile Fueler					No
CLD11	Lowerdeck Loaders	Lantis 818		Diesel	On-Airport Mobile Fueler					No
CLD12	Lowerdeck Loaders	Lantis 818		Diesel	On-Airport Mobile Fueler					No
CLD15	Lowerdeck Loaders	Lantis 818		Diesel	On-Airport Mobile Fueler					No
CLD19	Lowerdeck Loaders	Lantis 818-144-125	1997	Diesel	On-Airport Mobile Fueler					No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
CLD21	Lowerdeck Loaders	Lantis 818-144-125	1998	Diesel	On-Airport Mobile Fueler					No
CLD23	Lowerdeck Loaders	Lantis 828	2001	Diesel	On-Airport Mobile Fueler					No
CLD24	Lowerdeck Loaders	Lantis 828	2001	Diesel	On-Airport Mobile Fueler					No
CLD25	Lowerdeck Loaders	Lantis 828	2002	Diesel	On-Airport Mobile Fueler					No
CLD28	Lowerdeck Loaders	Lantis 828	2005	Diesel	On-Airport Mobile Fueler					No
CLD29	Lowerdeck Loaders	Lantis 828	2005	Diesel	On-Airport Mobile Fueler					No
CLD30	Lowerdeck Loaders	Lantis 828	2005	Diesel	On-Airport Mobile Fueler					No
CLD26	Lowerdeck Loaders	Lantis 828WB	2002	Diesel	On-Airport Mobile Fueler					No
332850	Other	AMERICAN LAB SYSTEMS	1998	ELECTRIC	On-Airport Stationary	6	Yes - Works	137.0	05/15/06	No
S/N: F0009234014	Other	Baldor Elec. Co.	1989	electric	On-Airport Stationary	15	No			No
227500	Other	BMCXX	1996	DIESEL	On-Airport Mobile Fueler	125	Yes - Works			No
243845	Other	BMCXX	1996	DIESEL	On-Airport Mobile Fueler	125	Yes - Works			No
74479	Other	Chevrolet	2000	gasoline	On-Airport Stationary		Yes - Works			
04-035	Other	CHEVY	1991	gasoline	On-Airport Stationary	135	Yes - Works	1,452.0	05/19/2006	
04-038	Other	CHEVY	1991	gasoline	On-Airport Stationary	135	Yes - Works	1,532.0	05/19/2006	
PUT277	Other	Chevy	1995	Diesel	On-Airport Mobile Fueler	550	Yes - Works	#######		No
04-067	Other	CHEVY	1995	gasoline	On-Airport Stationary	125	Yes - Works	104.0	05/19/2006	
259518	Other	COLEMAN	1989	DIESEL		25				No
MOBILE LIGHT	Other	COLEMAN	1991	diesel	On-Airport Mobile Fueler		Yes - Works	5,763.0	06/11/2006	No
370517	Other	DETROIT	1980	DIESEL	On-Airport Stationary		Yes - Works	582.0	02/01/02	No
TRN2	Other	FMC	1981	diesel	On-Airport Mobile Fueler	87	Yes - Works	16,809.0	06/13/2006	No
TRN1	Other	FMC	1981	diesel	On-Airport Stationary	87	Yes - Works	17,943.0	06/13/2006	No
TRN4	Other	FMC	1994	diesel	On-Airport Mobile Fueler	87	Yes - Works	9,527.0	06/13/2006	No
T/P #14	Other	FMC	2005	diesel	On-Airport Mobile Fueler	87	Yes - Works	199.5	06/11/2006	No
T/P #11	Other	FMC	2005	diesel	On-Airport Mobile Fueler	87	Yes - Works	376.4	06/11/2006	No
T/P #12	Other	FMC	2005	diesel	On-Airport Mobile Fueler	87	Yes - Works	646.1	06/11/2006	No
40-624	Other	FORD	1975	LPG	On-Airport Stationary	140	Yes - Works	940.0	05/19/2006	
40-603	Other	FORD	1980	gasoline	On-Airport Stationary	140	Yes - Works	52.0	05/19/2006	
05-045	Other	FORD	1987	diesel	On-Airport Stationary	160	Yes - Works	98.0	05/19/2006	
05-046	Other	FORD	1990	diesel	On-Airport Stationary	160	Yes - Works	39.0	05/19/2006	
04-142	Other	FORD	1990	gasoline	On-Airport Stationary	140	Yes - Works	83.0	05/19/2006	
05-044	Other	FORD	1990	diesel	On-Airport Stationary	160	Yes - Works	195.0	05/19/2006	
520156	Other	FORD	1991	GASOLINE	On-Airport Stationary	138	Yes - Works	755.0	05/15/06	No
2379	Other	FORD	1992	gasoline	Off Airport	185	No	#######	06/02/2006	Yes - Other
810	Other	FORD	1993	gasoline	Off Airport	145	No	#######	06/02/2006	es - Light Duty Tru
2160	Other	FORD	1993	gasoline	Off Airport	145	No	#######	06/02/2006	es - Light Duty Tru
5L46589	Other	Ford	1994	GASOLINE	On-Airport Mobile Fueler		Yes - Works			Yes - Light Duty
VNC007F	Other	Ford	1995	gasoline	On-airport Stationary	210	Yes - Works	65,000.0	04/03/2003	Yes - other
8090	Other	FORD	1998	gasoline	Off Airport	145	No	#######	06/02/2006	es - Light Duty Tru
F-150	Other	Ford	1999	GASOLINE	On-Airport Mobile Fueler		Yes - Works			Yes - Light Duty
74415	Other	Ford	1999	gasoline	On-Airport Stationary		Yes - Works			
74416	Other	Ford	1999	gasoline	On-Airport Stationary		Yes - Works			

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
74424	Other	Ford	1999	gasoline	On-Airport Stationary		Yes - Works			
74451	Other	Ford	1999	gasoline	On-Airport Stationary		Yes - Works			
74519	Other	Ford	2001	gasoline	On-Airport Stationary		Yes - Works			
74490	Other	Ford	2001	gasoline	On-Airport Stationary		Yes - Works			
74503	Other	Ford	2001	gasoline	On-Airport Stationary		Yes - Works			
74507	Other	Ford	2001	gasoline	On-Airport Stationary		Yes - Works			
74515	Other	Ford	2001	gasoline	On-Airport Stationary		Yes - Works			
74546	Other	Ford	2003	gasoline	On-Airport Stationary		Yes - Works			
74540	Other	Ford	2003	gasoline	On-Airport Stationary		Yes - Works			
315784	Other	GARDNER DENVER	1983	GASOLINE		65				No
331660	Other	GEM CARS	2000	ELECTRIC			Yes - Works	727.0	06/02/06	Yes - Passenger
400085	Other	GENERAL ELECTRIC	1971	GASOLINE		75				No
BOOM	Other	GENIE	2004	gasoline	On-Airport Mobile Fueler	70	Yes - Works	195.0	06/13/2006	No
P31042	Other	GMC	2002	GASOLINE	On-Airport Mobile Fueler		Yes - Works			Yes - Light Duty
332647	Other	HONDA	1999	GASOLINE	On-Airport Stationary	138	Yes - Works	11.0	05/15/06	No
S/N: 20253	Other	Hydraulics Int. Inc.	2001	electric	On-Airport Stationary	25	Yes - Works	201.4	06/07/2006	No
70144	Other	International	2001	diesel	On-Airport Stationary		Yes - Works			Yes - Light Duty
48-201	Other	KUBOTA		diesel	On-Airport Mobile Fueler	50	Yes - Works	5,288.0	05/19/2006	
48-202	Other	KUBOTA		diesel	On-Airport Mobile Fueler	50	Yes - Works	6,353.0	05/19/2006	
T/P #8	Other	LANTIC CORP.	1987	diesel	On-Airport Mobile Fueler		Yes - Works	3,620.2	06/11/2006	No
269283	Other	LEGEND	2000	ELECTRIC			Yes - Works	1,011.0	06/02/06	No
8695	Other	light stand		Diesel	On-Airport Mobile Fueler		Yes - Works	5,571.0	11/01/2006	No
8694	Other	Light stand		Diesel	On-Airport Mobile Fueler		Yes - Works	5,897.0	11/01/2006	No
279006	Other	LWLYN	1990	GASOLINE	On-Airport Stationary	25	Yes - Works			No
MOBILE LIGHT	Other	OVER-KOWE	1979	diesel	On-Airport Mobile Fueler		No			No
T/P #9	Other	TLD	2001	diesel	On-Airport Mobile Fueler		Yes - Works	1,783.8	06/11/2006	No
T/P #10	Other	TLD	2001	diesel	On-Airport Mobile Fueler		Yes - Works	1,826.0	06/11/2006	No
TRN5	Other	TLD	2001	diesel	On-Airport Mobile Fueler	78	Yes - Works	5,904.0	06/13/2006	No
TRN6	Other	TLD	2002	diesel	On-Airport Mobile Fueler	78	Yes - Works	4,169.0	06/13/2006	No
14029	Other	TLD	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
14030	Other	TLD	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
14031	Other	TLD	2003	diesel	On-Airport Mobile Fueler		Yes - Works			
4P52491	Other	TOYOTA	1987	GASOLINE	On-Airport Mobile Fueler		Yes - Works			Yes - Light Duty
399336	Other	TOYOTA	2005	ELECTRIC			Yes - Doesn't	1.5	06/02/06	No
T/P #2	Other	TRANSACT	1991	diesel	On-Airport Mobile Fueler		Yes - Works	1,774.7	06/11/2006	No
T/P #1	Other	TRANSACT	1991	diesel	On-Airport Mobile Fueler		Yes - Works	3,400.8	06/11/2006	No
T/P #3	Other	TRANSACT	1996	diesel	On-Airport Mobile Fueler		Yes - Works	6,163.0	06/11/2006	No
T/P #4	Other	TRANSACT	1997	diesel	On-Airport Mobile Fueler		Yes - Works	1,621.0	06/11/2006	No
265097	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
266679	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
299208	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
341355	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
417662	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
467796	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
482314	Other	TYLDN	1980	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
544880	Other	TYLDN	1993	ELECTRIC	On-Airport Stationary	25	Yes - Works			No
221116	Other	WASP	1989	GASOLINE		25				No
318262	Other	WASP	1990	GASOLINE		25				No
224259	Other	WASP	1998	DIESEL		25				No
380513	Other	WESLEY PACK MULE	2004	ELECTRIC			Yes - Works	6,807.0	06/02/06	No
VAN913	Other ORE	AeroMate	1991	Gasoline	On-Airport Mobile Fueler	140	Yes - Works	71,917.0		Yes - Other
339108	Other ORE	CHAMPION	1995	GASOLINE	On-Airport Stationary	225	Yes - Works	15,647.0	05/15/06	Yes - Bus
357280	Other ORE	CHAMPION	1995	GASOLINE	On-Airport Stationary	225	Yes - Works	22,679.0	05/15/06	Yes - Bus
MT 128	Other ORE	Chev.	2000	gasoline	Off Airport	200	Yes - Works	1,567.0		Yes - Light Duty Tru
238791	Other ORE	CHEVROLET	1985	GASOLINE	On-Airport Mobile Fueler	86	Yes - Works	1,281.0	06/02/06	Yes - Passenger
444388	Other ORE	CHEVROLET	1989	GASOLINE	On-Airport Mobile Fueler	300	Yes - Works	20,062.0	06/01/06	Yes - Other
542038	Other ORE	CHEVROLET	1991	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	2,084.0	06/02/06	Yes - Light Duty
AM02	Other ORE	Chevrolet	1991	diesel	On-Airport Mobile Fueler		No	########		Yes - Other
446278	Other ORE	CHEVROLET	1994	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	2,794.0	06/02/06	Yes - Light Duty
	Other ORE	Chevrolet	1996	gasoline	Off Airport		No	########		Yes - Passenger
	Other ORE	Chevrolet	1997	gasoline	Off Airport		No	########		Yes - Passenger
AM01	Other ORE	Chevrolet	1998	gasoline	On-Airport Mobile Fueler		No	56,000.0		Yes - Other
455714	Other ORE	CHEVROLET	1999	GASOLINE	On-Airport Mobile Fueler	195	Yes - Works	25,605.0	06/02/06	Yes - Light Duty
PUT275	Other ORE	Chevy	1987	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	92,944.1		Yes - Light Duty Tru
VAN912	Other ORE	Chevy	1987	Gasoline	On-Airport Mobile Fueler	140	Yes - Works	84,541.7		Yes - Other
305942	Other ORE	CHEVY	1990	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
4932307	Other ORE	Chevy	1994	gasoline	Off Airport	200	No	92,096.0	05/31/2006	Yes - Other
4935482	Other ORE	Chevy	1994	gasoline	Off Airport	165	No	########	05/31/2006	es - Passenger Ca
4933049	Other ORE	Chevy	1994	gasoline	Off Airport	165	No	########	05/31/2006	es - Passenger Ca
VAN906	Other ORE	Chevy	1995	Gasoline	On-Airport Mobile Fueler	140	Yes - Works	79,233.5		Yes - Other
8478	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	251.0	11/01/2006	Yes - Other
2293	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	956.0	11/01/2006	Yes - Other
2245	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	2,048.0	11/01/2006	Yes - Other
8481	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	2,366.0	11/01/2006	Yes - Other
2243	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	3,545.0	11/01/2006	Yes - Other
7570	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	5,375.0	11/01/2006	Yes - Other
2290	Other ORE	Chevy		Diesel	On-Airport Mobile Fueler		Yes - Works	5,851.0	11/01/2006	Yes - Other
2247	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	5,967.0	11/01/2006	Yes - Other
2274	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	6,628.0	11/01/2006	Yes - Other
2244	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	7,246.0	11/01/2006	Yes - Other
2269	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	9,578.0	11/01/2006	Yes - Other
2242	Other ORE	Chevy		Gasoline	On-Airport Mobile Fueler		Yes - Works	10,423.0	11/01/2006	Yes - Other
413301	Other ORE	CHEVY	1970	GASOLINE	On-Airport Stationary	160	Yes - Works	1,096.0	05/15/06	Yes - Other
329217	Other ORE	CHEVY	1980	GASOLINE	On-Airport Stationary	175	Yes - Works	4,266.0	05/15/06	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
	Other ORE	Chrysler	1999	gasoline	Off Airport		No	98,000.0		Yes - Passenger
	Other ORE	Chrysler	1999	gasoline	Off Airport		No	########		Yes - Passenger
	Other ORE	Chrysler	2000	gasoline	Off Airport		No	########		Yes - Passenger
	Other ORE	Chrysler	2003	gasoline	Off Airport		No	43,000.0		Yes - Passenger
Cargo 1	Other ORE	Dodge	1997	gasoline	Off Airport		Yes - Works	70,300.0		Yes - Passenger
3213996	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	11,233.0	05/31/2006	Yes - Other
3216498	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	13,363.0	05/31/2006	Yes - Other
3215721	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	13,534.0	05/31/2006	Yes - Other
3211665	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	13,818.0	05/31/2006	Yes - Other
3216504	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	13,872.0	05/31/2006	Yes - Other
3215731	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	13,964.0	05/31/2006	Yes - Other
3215726	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	15,273.0	05/31/2006	Yes - Other
3213990	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	15,721.0	05/31/2006	Yes - Other
3217145	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	15,820.0	05/31/2006	Yes - Other
3216506	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	16,630.0	05/31/2006	Yes - Other
3215714	Other ORE	Dodge	2003	gasoline	Off Airport	180	No	17,422.0	05/31/2006	Yes - Other
272097	Other ORE	DODGE	1999	GASOLINE	On-Airport Stationary	140	Yes - Works	1,371.0	05/15/06	Yes - Other
218120	Other ORE	DODGE	1999	GASOLINE	On-Airport Stationary	140	Yes - Works	2,718.0	05/15/06	Yes - Other
274351	Other ORE	EZ-GO	1988	ELECTRIC						No
322196	Other ORE	FORD	1975	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	1,301.0	06/02/06	Yes - Light Duty
VAN901	Other ORE	Ford	1978	Gasoline	On-Airport Mobile Fueler	140	Yes - Works	46,078.7		Yes - Other
279559	Other ORE	FORD	1982	GASOLINE	On-Airport Mobile Fueler	325	Yes - Works	95,149.0	06/01/06	Yes - Other
479003	Other ORE	FORD	1983	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
377125	Other ORE	FORD	1983	GASOLINE	On-Airport Stationary		Yes - Works	505.0	05/15/06	Yes - Other
559699	Other ORE	FORD	1985	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
PU01	Other ORE	Ford	1988	gasoline	On-Airport Mobile Fueler		No	59,200.0		Yes - Light Duty
368459	Other ORE	FORD	1988	GASOLINE	On-Airport Stationary		Yes - Works	7,777.0	05/15/06	Yes - Other
328286	Other ORE	FORD	1989	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
360955	Other ORE	FORD	1989	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works	102,191.0	06/01/06	Yes - Other
CAR012	Other ORE	Ford	1989	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	45,823.4		Yes - Passenger Ca
PU03	Other ORE	Ford	1990	gasoline	On-Airport Mobile Fueler		No	72,200.0		Yes - Light Duty
238427	Other ORE	FORD	1990	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
458437	Other ORE	FORD	1990	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
464569	Other ORE	FORD	1990	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
522788	Other ORE	FORD	1990	GASOLINE	On-Airport Stationary		Yes - Works	4,784.0	05/15/06	Yes - Other
406525	Other ORE	FORD	1990	GASOLINE	On-Airport Mobile Fueler	80	Yes - Works	113,075.0	06/01/06	Yes - Other
406196	Other ORE	FORD	1991	GASOLINE	On-Airport Stationary		Yes - Works	5,443.0	05/15/06	Yes - Other
290206	Other ORE	FORD	1992	GASOLINE	On-Airport Mobile Fueler	195	Yes - Works	4,190.0	06/02/06	Yes - Light Duty
VAN914	Other ORE	Ford	1992	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	#######		Yes - Other
S/W #2	Other ORE	FORD	1992	gasoline	On-Airport Mobile Fueler		Yes - Works	#######	06/11/2006	es - Passenger Ca
VN01	Other ORE	Ford	1992	gasoline	On-Airport Mobile Fueler		No	56,000.0		Yes - Passenger
502047	Other ORE	FORD	1993	GASOLINE	On-Airport Stationary		Yes - Works	14,190.0	05/15/06	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
CAR010	Other ORE	Ford	1993	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	85,963.0		Yes - Passenger Ca
555604	Other ORE	FORD	1994	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
PUT274	Other ORE	Ford	1995	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	#######		Yes - Light Duty Tru
247177	Other ORE	FORD	1995	GASOLINE	On-Airport Stationary		Yes - Works	2,879.0	05/15/06	Yes - Other
VAN967	Other ORE	Ford	1995	Gasoline	On-Airport Mobile Fueler	180	Yes - Works	#######		Yes - Other
5C80464	Other ORE	Ford	1995	gasoline			Yes - Works	#######	06/14/2006	
MT 285	Other ORE	Ford	1996	gasoline	Off Airport	300	Yes - Works	2,464.0		Yes - Light Duty Tru
VAN917	Other ORE	Ford	1996	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	54,833.0		Yes - Other
416500	Other ORE	FORD	1996	GAS	On-Airport Stationary		Yes - Works	1,468.0	02/15/06	Yes - Passenger
489139	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary		Yes - Works	9,910.0	05/15/06	Yes - Other
8221030	Other ORE	Ford	1997	gasoline	Off Airport	150	No	40,453.0	05/31/2006	Yes - Other
VAN968	Other ORE	Ford	1997	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	27,184.0		Yes - Other
PU02	Other ORE	Ford	1997	gasoline	On-Airport Mobile Fueler		No	66,000.0		Yes - Other
VAN915	Other ORE	Ford	1997	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	94,348.6		Yes - Other
8221083	Other ORE	Ford	1998	gasoline	Off Airport	150	No	24,068.0	05/31/2006	es - Light Duty Tru
530243	Other ORE	FORD	1998	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	3,125.0	06/02/06	Yes - Light Duty
PUT276	Other ORE	Ford	1998	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	50,405.0		Yes - Light Duty Tru
459074	Other ORE	FORD	1998	GASOLINE	On-Airport Stationary		Yes - Works	4,985.0	05/15/06	Yes - Other
427819	Other ORE	FORD	1998	DIESEL	On-Airport Mobile Fueler		Yes - Works	8,002.0	05/15/06	Yes - Other
8222076	Other ORE	Ford	1998	gasoline	Off Airport	150	No	21,264.0	05/31/2006	Yes - Other
8221070	Other ORE	Ford	1998	gasoline	Off Airport	150	No	24,692.0	05/31/2006	Yes - Other
8222075	Other ORE	Ford	1998	gasoline	Off Airport	150	No	28,243.0	05/31/2006	Yes - Other
8222072	Other ORE	Ford	1998	gasoline	Off Airport	150	No	28,392.0	05/31/2006	Yes - Other
8221068	Other ORE	Ford	1998	gasoline	Off Airport	150	No	36,952.0	05/31/2006	Yes - Other
8221056	Other ORE	Ford	1998	gasoline	Off Airport	150	No	54,048.0	05/31/2006	Yes - Other
8914014	Other ORE	Ford	1998	gasoline	Off Airport	170	No	71,277.0	05/31/2006	es - Passenger Ca
CAR006	Other ORE	Ford	1998	Gasoline	Off Airport	260	Yes - Works	60,000.0		Yes - Passenger Ca
361354	Other ORE	FORD	1999	GAS	On-Airport Stationary		Yes - Works	11,194.0	02/12/02	Yes - Light Duty
PUT273	Other ORE	Ford	1999	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	75,648.7		Yes - Light Duty Tru
509656	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary		Yes - Works	565.0	05/15/06	Yes - Other
316827	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary		Yes - Works	4,765.0	05/15/06	Yes - Other
436443	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary		Yes - Works	7,936.0	05/15/06	Yes - Other
364574	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary		Yes - Works	7,979.0	05/15/06	Yes - Other
475132	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary		Yes - Works	8,040.0	05/15/06	Yes - Other
522907	Other ORE	FORD	1999	GASOLINE	On-Airport Mobile Fueler	225	Yes - Works	88,504.0	06/01/06	Yes - Other
238266	Other ORE	FORD	1999	GASOLINE	On-Airport Mobile Fueler	250	Yes - Works	131,533.0	06/01/06	Yes - Other
VAN962	Other ORE	Ford	1999	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	60,290.0		Yes - Other
VAN965	Other ORE	Ford	1999	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	65,245.0		Yes - Other
VAN964	Other ORE	Ford	1999	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	90,962.0		Yes - Other
VAN961	Other ORE	Ford	1999	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	#######		Yes - Other
VAN960	Other ORE	Ford	1999	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	#######		Yes - Other
	Other ORE	Ford	1999	gasoline	Off Airport	200	Yes - Works	33,635.0	05/23/2006	es - Passenger Ca

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
S/W #1	Other ORE	FORD	1999	gasoline	On-Airport Mobile Fueler		Yes - Works	2,630.0	06/11/2006	es - Passenger Ca
PU04	Other ORE	Ford	2000	gasoline	On-Airport Mobile Fueler		No	79,000.0		Yes - Light Duty
297094	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	714.0	05/15/06	Yes - Other
352457	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	2,493.0	05/15/06	Yes - Other
260358	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	2,728.0	05/15/06	Yes - Other
361956	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	3,685.0	05/15/06	Yes - Other
485961	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	3,754.0	05/15/06	Yes - Other
221137	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	4,195.0	05/15/06	Yes - Other
290010	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary		Yes - Works	5,567.0	05/15/06	Yes - Other
509306	Other ORE	FORD	2000	GASOLINE	On-Airport Mobile Fueler	225	Yes - Works	20,397.0	06/01/06	Yes - Other
914569	Other ORE	Ford	2000	gasoline	Off Airport	150	No	42,879.0	05/31/2006	es - Passenger Ca
540281	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	1,574.0	05/15/06	Yes - Bus
PUT272	Other ORE	Ford	2001	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	26,506.6		Yes - Light Duty Tru
428288	Other ORE	FORD	2001	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
237503	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	575.0	05/15/06	Yes - Other
265937	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	1,372.0	05/15/06	Yes - Other
330750	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	1,514.0	05/15/06	Yes - Other
429121	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	1,583.0	05/15/06	Yes - Other
407330	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	2,541.0	05/15/06	Yes - Other
336770	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	3,602.0	05/15/06	Yes - Other
275373	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary		Yes - Works	3,805.0	05/15/06	Yes - Other
381598	Other ORE	FORD	2001	GASOLINE	On-Airport Mobile Fueler	275	Yes - Works	58,277.0	06/01/06	Yes - Other
PT2	Other ORE	FORD	2001	gasoline	On-Airport Mobile Fueler	235	Yes - Works	52,289.0	06/13/2006	Yes - Other
	Other ORE	FORD	2001	gasoline	Off Airport	200	Yes - Works	34,201.0	05/23/2006	es - Passenger Ca
CAR014	Other ORE	Ford	2001	Gasoline	Off Airport	260	Yes - Works	40,836.0		Yes - Passenger Ca
221151	Other ORE	FORD	2002	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	2,801.0	06/02/06	Yes - Light Duty
Admin 1	Other ORE	Ford	2003	gasoline	Off Airport		No	5,000.0		Yes - Passenger
CAR009	Other ORE	Ford	2003	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	86,721.0		Yes - Passenger Ca
	Other ORE	Ford	2004	gasoline	Off Airport		No	30,000.0		Yes - Passenger
	Other ORE	Ford	2004	gasoline	Off Airport		No	31,000.0		Yes - Passenger
PUT278	Other ORE	Ford	2005	Gasoline	On-Airport Mobile Fueler	200	Yes - Works	37,569.5		Yes - Light Duty Tru
513933	Other ORE	FORD	2005	GASOLINE	On-Airport Mobile Fueler	275	Yes - Works	11,313.0	06/01/06	Yes - Other
ford escape #4	Other ORE	FORD	2005	gasoline	On-Airport Mobile Fueler		Yes - Works	7,508.0	06/11/2006	es - Passenger Ca
VAN970	Other ORE	Ford	2006	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	3,522.9		Yes - Other
VAN969	Other ORE	Ford	2006	Gasoline	On-Airport Mobile Fueler	160	Yes - Works	4,433.0		Yes - Other
7567	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	4,403.0	11/01/2006	Yes - Other
2277	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	302.0	11/01/2006	Yes - Other
2298	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	548.0	11/01/2006	Yes - Other
8697	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	684.0	11/01/2006	Yes - Other
8685	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	881.0	11/01/2006	Yes - Other
2321	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	987.0	11/01/2006	Yes - Other
8691	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	1,591.0	11/01/2006	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
7571	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	2,050.0	11/01/2006	Yes - Other
8787	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	2,458.0	11/01/2006	Yes - Other
8709	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	2,823.0	11/01/2006	Yes - Other
2313	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	3,282.0	11/01/2006	Yes - Other
2232	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	3,387.0	11/01/2006	Yes - Other
2322	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	3,405.0	11/01/2006	Yes - Other
7569	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	3,440.0	11/01/2006	Yes - Other
8717	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	4,356.0	11/01/2006	Yes - Other
2235	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	5,093.0	11/01/2006	Yes - Other
2231	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	5,338.0	11/01/2006	Yes - Other
8771	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	9,072.0	11/01/2006	Yes - Other
2271	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	9,238.0	11/01/2006	Yes - Other
2272	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	9,382.0	11/01/2006	Yes - Other
2263	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	9,565.0	11/01/2006	Yes - Other
2299	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	9,903.0	11/01/2006	Yes - Other
2257	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	10,023.0	11/01/2006	Yes - Other
2248	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	10,053.0	11/01/2006	Yes - Other
2294	Other ORE	Ford		Gasoline	On-Airport Mobile Fueler		Yes - Works	10,187.0	11/01/2006	Yes - Other
503657	Other ORE	FORD	1971	GASOLINE	On-Airport Stationary	130	Yes - Works	1,411.0	05/15/06	Yes - Light Duty
502383	Other ORE	FORD	1984	GASOLINE	On-Airport Stationary	230	Yes - Works	2,287.0	05/15/06	Yes - Bus
221396	Other ORE	FORD	1988	GASOLINE	On-Airport Stationary	100	Yes - Works	2,617.0	05/15/06	Yes - Light Duty
421722	Other ORE	FORD	1988	GASOLINE	On-Airport Stationary	140	Yes - Works	1,089.0	05/15/06	Yes - Other
454321	Other ORE	FORD	1989	GASOLINE	On-Airport Stationary	150	Yes - Works	199.0	05/15/06	Yes - Light Duty
231343	Other ORE	FORD	1989	GASOLINE	On-Airport Stationary	130	Yes - Works	398.0	05/15/06	Yes - Other
406945	Other ORE	FORD	1989	GASOLINE	On-Airport Stationary	130	Yes - Works	9,762.0	05/15/06	Yes - Other
532889	Other ORE	FORD	1992	LPG	On-Airport Stationary	150	Yes - Works	10,147.0	05/15/06	Yes - Light Duty
326368	Other ORE	FORD	1994	GASOLINE	On-Airport Stationary	170	Yes - Works	5,502.0	05/15/06	Yes - Light Duty
268688	Other ORE	FORD	1995	GASOLINE	On-Airport Stationary	100	Yes - Works	3,138.0	05/15/06	Yes - Light Duty
490322	Other ORE	FORD	1995	GASOLINE	On-Airport Stationary	100	Yes - Works	3,864.0	05/15/06	Yes - Light Duty
547099	Other ORE	FORD	1995	GASOLINE	On-Airport Stationary	130	Yes - Works	10,013.0	05/15/06	Yes - Other
548219	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	100	Yes - Works	1,385.0	05/15/06	Yes - Light Duty
551292	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	150	Yes - Works	2,840.0	05/15/06	Yes - Light Duty
348670	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	150	Yes - Works	3,695.0	05/15/06	Yes - Light Duty
378119	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	150	Yes - Works	5,119.0	05/15/06	Yes - Light Duty
501438	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	150	Yes - Works	7,847.0	05/15/06	Yes - Light Duty
346668	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	130	Yes - Works	906.0	05/15/06	Yes - Other
506646	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	130	Yes - Works	5,463.0	05/15/06	Yes - Other
367136	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	200	Yes - Works	13,360.0	05/15/06	Yes - Other
346311	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	200	Yes - Works	13,756.0	05/15/06	Yes - Other
297472	Other ORE	FORD	1996	GASOLINE	On-Airport Stationary	200	Yes - Works	19,810.0	05/15/06	Yes - Other
562541	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	4,770.0	05/15/06	Yes - Light Duty
472521	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	5,056.0	05/15/06	Yes - Light Duty

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
521094	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	5,441.0	05/15/06	Yes - Light Duty
395836	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	6,041.0	05/15/06	Yes - Light Duty
523334	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	200	Yes - Works	1,737.0	05/15/06	Yes - Other
354781	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	200	Yes - Works	5,992.0	05/15/06	Yes - Other
356825	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	200	Yes - Works	6,116.0	05/15/06	Yes - Other
216174	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	200	Yes - Works	6,655.0	05/15/06	Yes - Other
218463	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	200	Yes - Works	9,544.0	05/15/06	Yes - Other
366373	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	11,837.0	05/15/06	Yes - Other
254877	Other ORE	FORD	1997	GASOLINE	On-Airport Stationary	200	Yes - Works	15,871.0	05/15/06	Yes - Other
455469	Other ORE	FORD	1998	GASOLINE	On-Airport Stationary	150	Yes - Works	4,121.0	05/15/06	Yes - Other
481138	Other ORE	FORD	1998	GASOLINE	On-Airport Stationary	150	Yes - Works	4,622.0	05/15/06	Yes - Other
553413	Other ORE	FORD	1998	GASOLINE	On-Airport Stationary	150	Yes - Works	5,110.0	05/15/06	Yes - Other
227850	Other ORE	FORD	1998	GASOLINE	On-Airport Stationary	150	Yes - Works	10,261.0	05/15/06	Yes - Other
510895	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	420.0	05/15/06	Yes - Light Duty
469063	Other ORE	FORD	1999	CNG	Off Airport	150	Yes - Works	651.0	05/15/06	Yes - Light Duty
442701	Other ORE	FORD	1999	CNG	Off Airport	150	Yes - Works	894.0	05/15/06	Yes - Light Duty
268387	Other ORE	FORD	1999	CNG	Off Airport	150	Yes - Works	900.0	05/15/06	Yes - Light Duty
477512	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	1,680.0	05/15/06	Yes - Light Duty
297220	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	2,878.0	05/15/06	Yes - Light Duty
320341	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	100	Yes - Works	3,637.0	05/15/06	Yes - Light Duty
220969	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	3,803.0	05/15/06	Yes - Light Duty
388052	Other ORE	FORD	1999	CNG	Off Airport	150	Yes - Works	4,630.0	05/15/06	Yes - Light Duty
334691	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	6,104.0	05/15/06	Yes - Light Duty
396221	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	12,345.0	05/15/06	Yes - Light Duty
408905	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	919.0	05/15/06	Yes - Other
271985	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	1,751.0	05/15/06	Yes - Other
277529	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	200	Yes - Works	1,828.0	05/15/06	Yes - Other
396914	Other ORE	FORD	1999	CNG	Off Airport	200	Yes - Works	2,575.0	05/15/06	Yes - Other
229873	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	200	Yes - Works	3,084.0	05/15/06	Yes - Other
230398	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	200	Yes - Works	4,482.0	05/15/06	Yes - Other
301154	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	4,546.0	05/15/06	Yes - Other
312760	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	200	Yes - Works	5,522.0	05/15/06	Yes - Other
380604	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	6,021.0	05/15/06	Yes - Other
360766	Other ORE	FORD	1999	GASOLINE	On-Airport Stationary	150	Yes - Works	7,613.0	05/15/06	Yes - Other
361431	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary	150	Yes - Works	2,402.0	05/15/06	Yes - Light Duty
233219	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary	150	Yes - Works	2,577.0	05/15/06	Yes - Light Duty
520905	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary	150	Yes - Works	3,989.0	05/15/06	Yes - Light Duty
349657	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary	150	Yes - Works	4,938.0	05/15/06	Yes - Light Duty
328671	Other ORE	FORD	2000	CNG	Off Airport	200	Yes - Works	1,084.0	05/15/06	Yes - Other
322539	Other ORE	FORD	2000	CNG	Off Airport	200	Yes - Works	1,164.0	05/15/06	Yes - Other
477456	Other ORE	FORD	2000	CNG	Off Airport	200	Yes - Works	1,319.0	05/15/06	Yes - Other
375291	Other ORE	FORD	2000	CNG	Off Airport	200	Yes - Works	2,034.0	05/15/06	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
482139	Other ORE	FORD	2000	CNG	Off Airport	200	Yes - Works	2,988.0	05/15/06	Yes - Other
296170	Other ORE	FORD	2000	CNG	Off Airport	200	Yes - Works	5,431.0	05/15/06	Yes - Other
490126	Other ORE	FORD	2000	GASOLINE	On-Airport Stationary	200	Yes - Works	23,155.0	05/15/06	Yes - Other
434616	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary	150	Yes - Works	1,219.0	05/15/06	Yes - Light Duty
514773	Other ORE	FORD	2001	CNG	Off Airport	150	Yes - Works	1,373.0	05/15/06	Yes - Light Duty
245098	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary	150	Yes - Works	2,127.0	05/15/06	Yes - Light Duty
235396	Other ORE	FORD	2001	CNG	Off Airport	150	Yes - Works	2,212.0	05/15/06	Yes - Light Duty
309365	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary	150	Yes - Works	10,431.0	05/15/06	Yes - Light Duty
325556	Other ORE	FORD	2001	GASOLINE	On-Airport Stationary	200	Yes - Works	1,065.0	05/15/06	Yes - Other
474012	Other ORE	FORD VAN	1989	GASOLINE	On-Airport Mobile Fueler	131				Yes - Other
AM04	Other ORE	GMC	1988	gasoline	On-Airport Mobile Fueler		No	64,000.0		Yes - Other
AM03	Other ORE	GMC	1994	gasoline	On-Airport Mobile Fueler		No	55,000.0		Yes - Other
515039	Other ORE	GMC	1996	GASOLINE	On-Airport Stationary	160	Yes - Works	2,642.0	05/15/06	Yes - Other
1510024	Other ORE	GMC	1997	gasoline	Off Airport	185	No	3,601.0	05/31/2006	es - Light Duty Tru
1511089	Other ORE	GMC	1997	gasoline	Off Airport	185	No	6,909.0	05/31/2006	es - Light Duty Tru
6510075	Other ORE	GMC	1997	gasoline	Off Airport	160	No	30,531.0	05/31/2006	es - Light Duty Tru
6510044	Other ORE	GMC	1997	gasoline	Off Airport	160	No	36,480.0	05/31/2006	es - Light Duty Tru
6510046	Other ORE	GMC	1997	gasoline	Off Airport	160	No	37,302.0	05/31/2006	es - Light Duty Tru
6510033	Other ORE	GMC	1997	gasoline	Off Airport	160	No	37,965.0	05/31/2006	es - Light Duty Tru
6510011	Other ORE	GMC	1997	gasoline	Off Airport	160	No	43,683.0	05/31/2006	es - Light Duty Tru
6510073	Other ORE	GMC	1997	gasoline	Off Airport	160	No	44,504.0	05/31/2006	es - Light Duty Tru
6510090	Other ORE	GMC	1997	gasoline	Off Airport	160	No	45,573.0	05/31/2006	es - Light Duty Tru
6510062	Other ORE	GMC	1997	gasoline	Off Airport	160	No	46,581.0	05/31/2006	es - Light Duty Tru
6510005	Other ORE	GMC	1997	gasoline	Off Airport	160	No	39,692.0	05/31/2006	Yes - Other
288428	Other ORE	GMC	1987	GASOLINE	On-Airport Stationary	160	Yes - Works	3,256.0	05/15/06	Yes - Other
493514	Other ORE	GMC	1987	GASOLINE	On-Airport Stationary	160	Yes - Works	7,657.0	05/15/06	Yes - Other
361088	Other ORE	GMC	1988	CNG	Off Airport	160	Yes - Works	366.0	05/15/06	Yes - Other
298032	Other ORE	GMC	1989	GASOLINE	On-Airport Stationary	100	Yes - Works	4,408.0	05/15/06	Yes - Light Duty
237314	Other ORE	GMC	1989	GASOLINE	On-Airport Stationary	100	Yes - Works	4,631.0	05/15/06	Yes - Light Duty
405734	Other ORE	GMC	1989	GASOLINE	On-Airport Stationary	160	Yes - Works	9,564.0	05/15/06	Yes - Other
432789	Other ORE	GMC	1990	GASOLINE	On-Airport Stationary	100	Yes - Works	6,847.0	05/15/06	Yes - Light Duty
437913	Other ORE	GMC	1992	GASOLINE	On-Airport Stationary	160	Yes - Works	3,027.0	05/15/06	Yes - Other
301903	Other ORE	GMC	1992	GASOLINE	On-Airport Stationary	160	Yes - Works	4,801.0	05/15/06	Yes - Other
257621	Other ORE	GMC	1993	GASOLINE	On-Airport Stationary	150	Yes - Works	2,080.0	05/15/06	Yes - Light Duty
557795	Other ORE	GMC	1993	GASOLINE	On-Airport Stationary	160	Yes - Works	6,296.0	05/15/06	Yes - Other
231112	Other ORE	GMC	1993	GASOLINE	On-Airport Stationary	210	Yes - Works	6,333.0	05/15/06	Yes - Other
230251	Other ORE	GMC	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	3,986.0	05/15/06	Yes - Light Duty
341278	Other ORE	GMC	1997	GASOLINE	On-Airport Stationary	150	Yes - Works	5,008.0	05/15/06	Yes - Light Duty
366191	Other ORE	GMC	1997	GASOLINE	On-Airport Stationary	180	Yes - Works	6,038.0	05/15/06	Yes - Other
VAN916	Other ORE	Grumman	1996	Gasoline	On-Airport Mobile Fueler	140	Yes - Works	#######		Yes - Other
305529	Other ORE	INTERNATIONAL	1999	DIESEL	On-Airport Mobile Fueler	210	Yes - Works	349,415.0	06/02/06	Yes - Other
498645	Other ORE	ISUZU	1990	GASOLINE	On-Airport Stationary	170	Yes - Works	497.0	05/15/06	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
449743	Other ORE	NAVISTAR	1995	DIESEL	On-Airport Stationary	124	Yes - Works	3,569.0	05/15/06	Yes - Other
274001	Other ORE	NORDCO	1975	GASOLINE	On-Airport Stationary	130	Yes - Works	4,667.0	05/15/06	Yes - Light Duty
491448	Other ORE	Plymouth	1994	gasoline	Off Airport	120	No	56,049.0	05/31/2006	es - Passenger Ca
362278	Other ORE	SUNSET BUS	1995	GASOLINE	On-Airport Stationary		Yes - Works	17,302.0	05/15/06	Yes - Bus
268520	Other ORE	SUNSET BUS	1995	GASOLINE	On-Airport Stationary		Yes - Works	31,427.0		Yes - Bus
295134	Other ORE	TAYLOR	2000	ELECTRIC						No
478835	Other ORE	TAYLOR	2000	ELECTRIC						No
218057	Other ORE	TAYLOR	2001	ELECTRIC						No
258531	Other ORE	TAYLOR	2001	ELECTRIC						No
339857	Other ORE	TAYLOR	2001	ELECTRIC						No
564235	Other ORE	TAYLOR	2001	ELECTRIC						No
P/U #1	Other ORE	TOYOTA	2004	gasoline	On-Airport Mobile Fueler		Yes - Works	15,189.0	06/11/2006	es - Light Duty Tru
P/U #3	Other ORE	TOYOTA	2004	gasoline	On-Airport Mobile Fueler		Yes - Works	17,704.0	06/11/2006	es - Light Duty Tru
400932	Other ORE	WARD	1978	DIESEL	On-Airport Stationary	230	Yes - Works	1,156.0	05/15/06	Yes - Bus
348635	Other ORE	WARD	1978	DIESEL	On-Airport Stationary	230	Yes - Works	6,081.0	05/15/06	Yes - Bus
3585	Other ORE			Diesel	On-Airport Mobile Fueler		Yes - Works	4,403.0	11/01/2006	Yes - Other
1833	Other ORE			Diesel	On-Airport Mobile Fueler		Yes - Works	5,684.0	11/01/2006	Yes - Other
324758	Passenger Stand	ACE-DEVTEC-NORDCO	1986	ELECTRIC		173				Yes - Other
224721	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
228235	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
232211	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
268002	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
268604	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
271145	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
273469	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
305998	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
374458	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
423276	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
500493	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
524580	Passenger Stand	CHARLATTE	1997	ELECTRIC		43				No
299936	Passenger Stand	FMC	2000	DIESEL	On-Airport Stationary	124	Yes - Works	719.0	05/15/06	No
232064	Passenger Stand	FORD	1976	GAS	On-Airport Stationary		Yes - Works	1,199.0	02/11/01	Yes - Other
PBS 410	Passenger Stand	Ford	1981	Gasoline	On-Airport Mobile Fueler	225	es - Doesn't Work			No
388990	Passenger Stand	FORD	1986	GAS	On-Airport Stationary		Yes - Works	601.0	02/01/02	Yes - Other
424256	Passenger Stand	FORD	1988	GASOLINE		173				Yes - Other
F350XL	Passenger Stand	Ford	1994	GASOLINE	On-Airport Mobile Fueler		Yes - Works			Yes - Light Duty
PBS 414	Passenger Stand	Ford	1995	Gasoline	On-Airport Mobile Fueler	225	es - Doesn't Work			No
PBS 420	Passenger Stand	Ford	1999	Gasoline	On-Airport Mobile Fueler	225	es - Doesn't Work			No
545181	Passenger Stand	FORD	2000	GASOLINE		173				Yes - Other
PBS 413	Passenger Stand	Ford	2004	Gasoline	On-Airport Mobile Fueler	225	es - Doesn't Work			No
278138	Passenger Stand	FORD	1978	GASOLINE	On-Airport Stationary	124	Yes - Works	8,065.0	05/15/06	Yes - Other
PS1	Passenger Stand	Ford F250	1987	Gasoline	On-Airport Mobile Fueler					

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
PS2	Passenger Stand	Ford F250	1989	Gasoline	On-Airport Mobile Fueler					
PS4	Passenger Stand	Ford F250	1993	Gasoline	On-Airport Mobile Fueler					
403459	Passenger Stand	FORD/WOLLARD	1988	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
257341	Passenger Stand	MAYVILLE	1990	ELECTRIC		43				No
STT1	Passenger Stand	NORCO	1974	gasoline	On-Airport Mobile Fueler	180	Yes - Works	5,282.0	06/13/2006	No
283430	Passenger Stand	NORDCO	1975	GASOLINE	On-Airport Stationary	124	Yes - Works	3,793.0	05/15/06	Yes - Other
378182	Passenger Stand	NORDCO/FORD	1983	LPG	On-Airport Stationary	120	Yes - Works	929.0	05/15/06	Yes - Other
232519	Passenger Stand	PHOENIX METALS	2002	DIESEL	On-Airport Mobile Fueler	65	Yes - Works	3,008.0	06/02/06	No
282163	Passenger Stand	RAMCI	1994	ELECTRIC		43				No
350168	Passenger Stand	RAMCI	1994	ELECTRIC		43				No
482363	Passenger Stand	RAMCI	1994	ELECTRIC		43				No
558824	Passenger Stand	RAMCI	1994	ELECTRIC		43				No
STT2	Passenger Stand	STINAR	2001	gasoline	On-Airport Mobile Fueler	235	Yes - Works	268.0	06/13/2006	No
23147	Passenger Stand	Wasp	1997	gasoline	On-Airport Mobile Fueler		Yes - Works			
23160	Passenger Stand	Wasp	1998	gasoline	On-Airport Mobile Fueler		Yes - Works			
23166	Passenger Stand	Wasp	1999	gasoline	On-Airport Mobile Fueler		Yes - Works			
23148	Passenger Stand	Wollard	1997	gasoline	On-Airport Mobile Fueler		Yes - Works			
23162	Passenger Stand	Wollard	1998	gasoline	On-Airport Mobile Fueler		Yes - Works			
23163	Passenger Stand	Wollard	1998	gasoline	On-Airport Mobile Fueler		Yes - Works			
23167	Passenger Stand	Wollard	1999	gasoline	On-Airport Mobile Fueler		Yes - Works			
463477	Passenger Stand	WOLLARD	2000	GASOLINE	On-Airport Stationary	235	Yes - Works	921.0	05/15/06	Yes - Other
224623	Passenger Stand	WOLLARD	1970	GASOLINE	On-Airport Stationary	110	Yes - Works	2,710.0	05/15/06	Yes - Other
257152	Passenger Stand	WOLLARD	1994	GASOLINE	On-Airport Stationary	124	Yes - Works	1,665.0	05/15/06	Yes - Other
422254	Passenger Stand	WOLLARD	1999	DIESEL	On-Airport Stationary	124	Yes - Works	654.0	05/15/06	No
461034	Passenger Stand	WOLLARD	1999	DIESEL	On-Airport Stationary	124	Yes - Works	724.0	05/15/06	No
330666	Passenger Stand		1984	ELEC	On-Airport Stationary		Yes - Works			Yes - Other
221977	Service Truck	BLUEBIRD	1990	DIESEL		300				Yes - Bus
474677	Service Truck	BLUEBIRD	1990	DIESEL		300				Yes - Bus
489321	Service Truck	BLUEBIRD	1990	DIESEL		300				Yes - Bus
386141	Service Truck	BLUEBIRD	1998	DIESEL		300				Yes - Bus
263340	Service Truck	BLUEBIRD	2000	DIESEL		300				Yes - Bus
275422	Service Truck	BLUEBIRD	2000	DIESEL		300				Yes - Bus
241171	Service Truck	BLUEBIRD	2001	DIESEL		300				Yes - Bus
320411	Service Truck	BLUEBIRD	2001	DIESEL		300				Yes - Bus
395374	Service Truck	BLUEBIRD	2001	DIESEL		300				Yes - Bus
MT 1024	Service Truck	Chev.	1993	gasoline	Off Airport	300	No			
282492	Service Truck	CHEVROLET	1991	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	2,224.0	06/02/06	Yes - Light Duty
74619	Service Truck	Chevrolet	1992	gasoline	On-Airport Stationary		Yes - Works			
72159	Service Truck	Chevrolet	1999	gasoline	On-Airport Stationary		Yes - Works			
72161	Service Truck	Chevrolet	1999	gasoline	On-Airport Stationary		Yes - Works			
516670	Service Truck	CHEVROLET	2002	GASOLINE	On-Airport Mobile Fueler	190	Yes - Works	2,741.0	06/02/06	Yes - Light Duty
468125	Service Truck	CHEVY	1994	GASOLINE		200				Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
370202	Service Truck	CHEVY		GASOLINE	On-Airport Mobile Fueler	140				Yes - Light Duty
449351	Service Truck	DEUTZ	1998	DIESEL	On-Airport Stationary	60	Yes - Works	792.0	06/03/06	Yes - Other
221487	Service Truck	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	1,378.0	02/08/02	Yes - Other
398909	Service Truck	DEUTZ	2000	DIESEL	On-Airport Stationary	60	Yes - Works	1,711.0	05/06/06	Yes - Other
02-083	Service Truck	DODGE	1994	gasoline	On-Airport Stationary	125	Yes - Works	220.0	05/19/2006	
371343	Service Truck	DODGE-CHRYSLER-	1998	GASOLINE		97				Yes - Light Duty
430640	Service Truck	DODGE-CHRYSLER-	1998	GASOLINE		97				Yes - Light Duty
340438	Service Truck	DODGE-CHRYSLER-	1999	GASOLINE		97				Yes - Light Duty
453334	Service Truck	DODGE-CHRYSLER-	2000	GASOLINE		97				Yes - Light Duty
255164	Service Truck	ELDORADO	1998	DIESEL		185				Yes - Bus
349153	Service Truck	ELDORADO	1998	DIESEL		185				Yes - Bus
390187	Service Truck	ELDORADO	1998	DIESEL		185				Yes - Bus
494718	Service Truck	ELDORADO	1998	DIESEL		185				Yes - Bus
302666	Service Truck	FORD	1957	GASOLINE		120				Yes - Other
02-225	Service Truck	FORD	1971	LPG	On-Airport Stationary	160	Yes - Works	6,564.0	05/19/2006	
267400	Service Truck	FORD	1978	GASOLINE		173				Yes - Other
260505	Service Truck	FORD	1979	GAS	On-Airport Stationary		Yes - Works	1,809.0	01/22/02	Yes - Other
335125	Service Truck	FORD	1979	GAS	On-Airport Stationary		Yes - Works	5,110.0	02/14/02	Yes - Other
247135	Service Truck	FORD	1980	GAS	On-Airport Stationary		Yes - Works	8,436.0	01/23/02	Yes - Other
270088	Service Truck	FORD	1985	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
450156	Service Truck	FORD	1985	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
226352	Service Truck	FORD	1985	GAS	On-Airport Stationary		Yes - Works	747.0	10/21/00	Yes - Other
478982	Service Truck	FORD	1985	GASOLINE		173				Yes - Other
313131	Service Truck	FORD	1986	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
493157	Service Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	17,214.0	10/21/00	Yes - Other
430577	Service Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	3,232.0	11/15/01	Yes - Other
456638	Service Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	1,251.0	11/28/01	Yes - Other
331030	Service Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	5,261.0	12/26/01	Yes - Other
542073	Service Truck	FORD	1986	GAS	On-Airport Stationary		Yes - Works	1,814.0	01/10/02	Yes - Other
273021	Service Truck	FORD	1987	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
297458	Service Truck	FORD	1987	GAS	On-Airport Stationary		Yes - Works	310.0	01/10/02	Yes - Other
465507	Service Truck	FORD	1987	GAS	On-Airport Stationary		Yes - Works	4,330.0	02/01/02	Yes - Other
497266	Service Truck	FORD	1988	GAS	On-Airport Stationary		Yes - Works	41,812.0	09/24/01	Yes - Other
335601	Service Truck	FORD	1989	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
368648	Service Truck	FORD	1989	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
433020	Service Truck	FORD	1989	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
349041	Service Truck	FORD	1990	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
299775	Service Truck	FORD	1990	GASOLINE		82				Yes - Light Duty
380989	Service Truck	FORD	1990	GASOLINE	On-Airport Mobile Fueler	140				Yes - Light Duty
462819	Service Truck	FORD	1990	DIESEL		250				Yes - Other
307412	Service Truck	FORD	1990	GASOLINE		250				Yes - Other
464688	Service Truck	FORD	1991	GASOLINE		82				Yes - Light Duty

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
509628	Service Truck	FORD	1991	GASOLINE		107				Yes - Light Duty
338513	Service Truck	FORD	1991	GASOLINE		110				Yes - Light Duty
490315	Service Truck	FORD	1991	GASOLINE		110				Yes - Light Duty
455322	Service Truck	FORD	1991	GAS	On-Airport Stationary		Yes - Works	24,156.0	10/21/00	Yes - Other
410949	Service Truck	FORD	1991	DIESEL	On-Airport Stationary		Yes - Works	9,524.0	01/25/02	Yes - Other
366947	Service Truck	FORD	1991	DIESEL	On-Airport Stationary	170	Yes - Works	8,531.0	01/30/02	Yes - Other
231336	Service Truck	FORD	1991	GASOLINE	On-Airport Stationary		Yes - Works	505.0	05/15/06	Yes - Other
352296	Service Truck	FORD	1992	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
366856	Service Truck	FORD	1992	GASOLINE		107				Yes - Passenger
290738	Service Truck	FORD	1993	GASOLINE		82				Yes - Light Duty
526120	Service Truck	FORD	1993	GASOLINE		200				Yes - Other
317359	Service Truck	FORD	1994	GASOLINE		161				Yes - Light Duty
74582	Service Truck	Ford	1994	gasoline	On-Airport Stationary		Yes - Works			
224322	Service Truck	FORD	1995	GASOLINE		82				Yes - Light Duty
419643	Service Truck	FORD	1995	GASOLINE		82				Yes - Light Duty
502726	Service Truck	FORD	1995	GASOLINE		82				Yes - Light Duty
452571	Service Truck	FORD	1996	GASOLINE		82				Yes - Light Duty
292698	Service Truck	FORD	1996	GASOLINE		110				Yes - Light Duty
349958	Service Truck	FORD	1996	GASOLINE		110				Yes - Light Duty
497700	Service Truck	FORD	1996	GASOLINE		107				Yes - Passenger
74333	Service Truck	Ford	1996	gasoline	On-Airport Stationary		Yes - Works			
477876	Service Truck	FORD	1997	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
262997	Service Truck	FORD	1997	GASOLINE		107				Yes - Light Duty
222341	Service Truck	FORD	1997	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
380541	Service Truck	FORD	1997	GAS	On-Airport Stationary		Yes - Works	191.0	11/27/01	Yes - Other
244909	Service Truck	FORD	1997	GAS	On-Airport Stationary		Yes - Works	749.0	01/24/02	Yes - Other
480438	Service Truck	FORD	1997	GASOLINE		173				Yes - Other
74367	Service Truck	Ford	1997	gasoline	On-Airport Stationary		Yes - Works			
271362	Service Truck	FORD	1998	GASOLINE		82				Yes - Light Duty
268569	Service Truck	FORD	1998	GASOLINE		150				Yes - Light Duty
216356	Service Truck	FORD	1998	GASOLINE		220				Yes - Light Duty
359583	Service Truck	FORD	1998	GASOLINE		220				Yes - Light Duty
490924	Service Truck	FORD	1998	GAS	On-Airport Stationary		Yes - Works	24,344.0	10/26/01	Yes - Other
536879	Service Truck	FORD	1998	GAS	On-Airport Stationary		Yes - Works	1,993.0	01/29/02	Yes - Other
289394	Service Truck	FORD	1998	GAS	On-Airport Stationary		Yes - Works	27,205.0	02/15/02	Yes - Other
354795	Service Truck	FORD	1998	GAS	On-Airport Stationary		Yes - Works	131,797.0	10/28/05	Yes - Other
241493	Service Truck	FORD	1999	GASOLINE		82				Yes - Light Duty
341250	Service Truck	FORD	1999	GASOLINE		82				Yes - Light Duty
433594	Service Truck	FORD	1999	GASOLINE		82				Yes - Light Duty
462308	Service Truck	FORD	1999	GASOLINE		107				Yes - Light Duty
291984	Service Truck	FORD	1999	GASOLINE		150				Yes - Light Duty
279804	Service Truck	FORD	1999	GAS	On-Airport Stationary		Yes - Works	199.0	06/17/01	Yes - Other

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
460740	Service Truck	FORD	1999	GAS	On-Airport Stationary		Yes - Works	17,487.0	10/22/01	Yes - Other
506779	Service Truck	FORD	1999	GAS	On-Airport Stationary		Yes - Works	2,238.0	12/05/01	Yes - Other
278355	Service Truck	FORD	1999	GAS	On-Airport Stationary		Yes - Works	85.0	02/08/02	Yes - Other
428932	Service Truck	FORD	1999	DIESEL	On-Airport Mobile Fueler		Yes - Works	5,164.0	05/15/06	Yes - Other
462357	Service Truck	FORD	1999	GASOLINE		173				Yes - Other
74399	Service Truck	Ford	1999	gasoline	On-Airport Stationary		Yes - Works			
546189	Service Truck	FORD	2000	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
224189	Service Truck	FORD	2000	GASOLINE		82				Yes - Light Duty
287427	Service Truck	FORD	2000	GASOLINE		82				Yes - Light Duty
541982	Service Truck	FORD	2000	GASOLINE		82				Yes - Light Duty
306516	Service Truck	FORD	2000	GASOLINE		107				Yes - Light Duty
325829	Service Truck	FORD	2000	GASOLINE		107				Yes - Light Duty
369271	Service Truck	FORD	2000	GASOLINE		107				Yes - Light Duty
375956	Service Truck	FORD	2000	GASOLINE		107				Yes - Light Duty
538349	Service Truck	FORD	2000	GASOLINE		107				Yes - Light Duty
555282	Service Truck	FORD	2000	GASOLINE		107				Yes - Light Duty
247814	Service Truck	FORD	2000	GASOLINE		161				Yes - Other
302057	Service Truck	FORD	2000	GASOLINE		161				Yes - Other
409794	Service Truck	FORD	2000	GASOLINE		161				Yes - Other
429709	Service Truck	FORD	2000	GASOLINE		161				Yes - Other
478786	Service Truck	FORD	2000	GASOLINE		161				Yes - Other
313523	Service Truck	FORD	2000	GASOLINE		173				Yes - Other
416087	Service Truck	FORD	2000	GASOLINE		173				Yes - Other
74452	Service Truck	Ford	2000	gasoline	On-Airport Stationary		Yes - Works			
74473	Service Truck	Ford	2000	gasoline	On-Airport Stationary		Yes - Works			
74474	Service Truck	Ford	2000	gasoline	On-Airport Stationary		Yes - Works			
340074	Service Truck	FORD	2001	GASOLINE	On-Airport Mobile Fueler	180	Yes - Works			Yes - Light Duty
264467	Service Truck	FORD	2001	GASOLINE		82				Yes - Light Duty
433867	Service Truck	FORD	2001	GASOLINE		82				Yes - Light Duty
303835	Service Truck	FORD	2001	GASOLINE		107				Yes - Light Duty
320670	Service Truck	FORD	2001	GASOLINE		107				Yes - Light Duty
335727	Service Truck	FORD	2001	GASOLINE		107				Yes - Light Duty
407582	Service Truck	FORD	2001	GASOLINE		107				Yes - Light Duty
509565	Service Truck	FORD	2001	GASOLINE		107				Yes - Light Duty
432131	Service Truck	FORD	2001	GASOLINE		140				Yes - Light Duty
239883	Service Truck	FORD	2001	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
391307	Service Truck	FORD	2001	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
377909	Service Truck	FORD	2001	DIESEL	On-Airport Stationary		Yes - Works	426.0	02/03/06	Yes - Other
279412	Service Truck	FORD	2001	GASOLINE		173				Yes - Other
284998	Service Truck	FORD	2001	GASOLINE		173				Yes - Other
74525	service Truck	Ford	2001	gasoline	On-Airport Stationary		Yes - Works			
305613	Service Truck	FORD	2003	GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
74702	Service Truck	Ford	2004	gasoline	On-Airport Stationary		Yes - Works			
268394	Service Truck	FORD		GASOLINE	On-Airport Mobile Fueler	140				Yes - Light Duty
317758	Service Truck	FORD		GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
382585	Service Truck	FRGHT	1998	DIESEL	On-Airport Mobile Fueler	150	Yes - Works			Yes - Other
560588	Service Truck	GENERAL MOTORS	1973	GASOLINE		103				Yes - Light Duty
380562	Service Truck	GENERAL MOTORS	1981	GASOLINE		175				Yes - Light Duty
358813	Service Truck	GENERAL MOTORS	1987	GASOLINE		174				Yes - Other
392035	Service Truck	GENERAL MOTORS	1987	GASOLINE		174				Yes - Other
340095	Service Truck	GENERAL MOTORS	1988	GASOLINE		103				Yes - Light Duty
429786	Service Truck	GENERAL MOTORS	1988	GASOLINE		103				Yes - Light Duty
542472	Service Truck	GENERAL MOTORS	1990	GASOLINE		103				Yes - Light Duty
341929	Service Truck	GENERAL MOTORS	1990	GASOLINE		140				Yes - Light Duty
395129	Service Truck	GENERAL MOTORS	1990	GASOLINE		175				Yes - Light Duty
324009	Service Truck	GENERAL MOTORS	1999	GASOLINE		174				Yes - Other
222593	Service Truck	GENERAL MOTORS	1999	DIESEL		250				Yes - Other
02-110	Service Truck	GMC	1982	gasoline	On-Airport Stationary	125	Yes - Works	310.0	05/19/2006	
446915	Service Truck	JLGIN	1997	DIESEL	On-Airport Mobile Fueler	125	Yes - Works			Yes - Other
298550	Service Truck	JLGIN	2002	DIESEL	On-Airport Mobile Fueler	125	Yes - Works			Yes - Other
512715	Service Truck	JLGIN	2002	DIESEL	On-Airport Mobile Fueler	125	Yes - Works			Yes - Other
362446	Service Truck	LFTAL	2004	LQ PRPN	On-Airport Mobile Fueler	150	Yes - Works			No
550263	Service Truck	MAZDA	1979	GAS	On-Airport Stationary		Yes - Works	2,165.0	08/16/01	Yes - Other
294602	Service Truck	NABI	2001	DIESEL		185				Yes - Bus
409010	Service Truck	NABI	2001	DIESEL		185				Yes - Bus
520541	Service Truck	NABI	2001	DIESEL		185				Yes - Bus
553749	Service Truck	NABI	2001	DIESEL		185				Yes - Bus
273273	Service Truck	TAYLOR DUNN	2002	ELECTRIC		254				No
317877	Service Truck	TESCO	1993	GASOLINE	On-Airport Mobile Fueler	180	Yes - Works			Yes - Other
378343	Service Truck	TESCO	1993	GASOLINE	On-Airport Stationary	180	Yes - Works			Yes - Other
544929	Service Truck	TESCO	1994	GASOLINE	On-Airport Stationary	180	Yes - Works			Yes - Other
338982	Service Truck	TOYOTA		GASOLINE	On-Airport Mobile Fueler					Yes - Light Duty
252413	Service Truck		1995	ELEC	On-Airport Stationary		Yes - Works	2,130.0	10/21/00	Yes - Other
229012	Service Truck		1995	ELEC	On-Airport Stationary		Yes - Works	2,194.0	10/21/00	Yes - Other
492891	Service Truck		1995	ELEC	On-Airport Stationary		Yes - Works	2,249.0	10/21/00	Yes - Other
348523	Service Truck		1995	ELEC	On-Airport Stationary		Yes - Works	2,325.0	10/21/00	Yes - Other
529921	Service Truck		1995	ELEC	On-Airport Stationary		Yes - Works	2,405.0	10/21/00	Yes - Other
468146	Service Truck			ELEC	On-Airport Stationary		Yes - Works	0.0	12/20/01	Yes - Other
502159	Service Truck			GAS	On-Airport Stationary		Yes - Works	1,573.0	04/15/06	Yes - Other
455105	Service Truck			ELEC	On-Airport Stationary		Yes - Works			Yes - Other
62101	Sweeper	American	1985		On-Airport Mobile Fueler		Yes - Works			
369355	Sweeper	AMRLN	1989	GASOLINE	On-Airport Mobile Fueler	50	Yes - Works			No
SW 8501	Sweeper	POWER BOSS	1995	gasoline	On-Airport Mobile Fueler	37	Yes - Works	2,903.0	05/22/2006	No
62100	Sweeper	Tennant	1985		On-Airport Mobile Fueler		Yes - Works			

LAX GSE Inventory
as of
29 April 2007

ID Number	GSE Category	Engine Specifications					Hour Meter/Odometer Information			On-Road Equivalent
		Manufacturer	Model Year	Fuel Type	Fueling Method	Power (BHP)	Installed	Hours/ Miles	Date Read	
SWR	Sweeper	TENNANT	1989	LPG	On-Airport Stationary		Yes - Works	6,058.0	06/13/2006	No
S/N: 7200-9897	Sweeper	Tennant	2004	electric	On-Airport Stationary	10	Yes - Works	225.0	06/07/2006	No
308721	Sweeper	TENNANT	1999	ELECTRIC	On-Airport Stationary	15	Yes - Works	119.0	05/15/06	No
298144	Sweeper	TENNANT	1999	GASOLINE	On-Airport Stationary	50	Yes - Works	1,070.0	05/15/06	No
438018	Sweeper	TENNANT	1999	GASOLINE	On-Airport Stationary	50	Yes - Works	1,135.0	05/15/06	No
260652	Sweeper	TYMCO	1989	DIESEL	On-Airport Mobile Fueler	50	Yes - Works			No
WSU003	Water Truck	FORD	1978	Gasoline	On-Airport Mobile Fueler	210	Yes - Works	788.0		No
313719	Water Truck	FORD	1999	GAS	On-Airport Stationary		Yes - Works	16,521.0	10/21/00	Yes - Other
293769	Water Truck	FORD/WOLLARD	2000	GASOLINE	On-Airport Mobile Fueler	120	Yes - Works			Yes - Light Duty
13-034	Water Truck	ISUZU	1997	diesel	On-Airport Stationary	135	Yes - Works	2,577.0	05/19/2006	
PW1	Water Truck	Wasp	1988		On-Airport Mobile Fueler					No
26137	Water Truck	Wollard	1998	gasoline	On-Airport Mobile Fueler		Yes - Works			
26135	Water Truck	Wollard	1998	gasoline	On-Airport Stationary		Yes - Works			
7893	Water Truck			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,236.0	11/01/2006	
2323	Water Truck			Gasoline	On-Airport Mobile Fueler		Yes - Works	1,827.0	11/01/2006	
LTZ #18		TUG		gasoline			Yes - Works	#######	06/14/2006	
							Yes - Works	16,377.0	06/14/2006	es - light duty truc
							Yes - Works	8,327.0	06/14/2006	es - Passenger Ca
							Yes - Works	31,759.0	06/14/2006	es - Passenger Ca
							Yes - Works	33,490.0	06/14/2006	es - Passenger Ca
							Yes - Works	38,392.0	06/14/2006	es - Passenger Ca

Appendix B-2
2013 LAX GSE Inventory

Memorandum

To: *Jaideep Vaswani, Los Angeles World Airports*

From: *Tony Skidmore, CDM Smith*

Date: *June 7, 2013*

Subject: *Draft LAX 2013 GSE Inventory Report*

Introduction

This document presents the results of an inventory of Ground Service Equipment (GSE) operating at Los Angeles International Airport (LAX) in the first quarter of 2013. The *LAX 2013 GSE Inventory* was completed as an update to an earlier GSE inventory at LAX conducted in 2006 pursuant to the requirements of the LAX Master Plan *Mitigation Monitoring and Reporting Program* (MMRP),[1] which is based on the *LAX Master Plan Final EIS/EIR,*[2] the LAX Master Plan Program *Community Benefits Agreement (CBA),*[3] and the LAX Master Plan *Stipulated Settlement.*[4] These requirements relate to LAWA's commitment towards the conversion of current conventionally-fueled (i.e., gasoline and diesel) GSE at LAX to extremely low emission technology.

This document provides a brief summary of the 2006 GSE inventory, a description of the 2013 inventory approach, an overview of the 2013 inventory results and comparison to the 2006 inventory results, and a detailed listing of the individual GSE included in the 2013 inventory.

Summary of 2006 GSE Inventory

GSE Inventory Survey Form and Distribution

In January 2006, a LAX GSE Inventory Task Force was formed for the purposes of identifying GSE users at LAX and developing an effective survey methodology and data request form to obtain certain information about GSE at LAX. The GSE inventory survey form and instructions were developed with consistency and simplicity in mind, and were developed as a Microsoft Excel workbook that included a number of "built-in" features to make data entry easy for the respondent and to help to secure valid entries. The GSE owner/operator contact list was initially developed from a compendium of information provided by LAWA, combined with in-the-field observations and other means, and continually updated based upon feedback from the respondents, un-opened or undeliverable surveys,

1 LAX Master Plan MPAQ Mitigation Measure MM-AQ-4, (*Operational-Related Mitigation Measures*), Measure 2 - *Prepare Detailed Inventory of all GSE at LAX*.

2 Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Final Environmental Impact Report (December 2004) and Final Environmental Impact Statement (May 2005).

3 Cooperation Agreement - Los Angeles International Airport Master Plan Program (February 2005).

4 Stipulated Settlement (December 2005).

ongoing communications between LAWA and GSE owner/operators, and input from Air Transport Association, now known as Airlines for America (A4A). Each party identified on the distribution list was sent an electronic copy of the Microsoft Excel workbook, along with a cover letter from LAWA. Responses were received from the majority of the parties that were sent a survey request.

Survey Results

The survey results provided generally complete data relative to the overall nature, number, and fuel type of GSE operating at LAX in 2006; however, some notable data gaps occurred relative to information requested on fueling method, power (brake horsepower), and GSE usage (i.e., hour meter/odometer information). Table 1 summarizes the basic characteristics of GSE at LAX in 2006 based on the inventory survey results.

2013 GSE Inventory

Inventory Survey Approach

The overall approach to the 2013 GSE inventory survey was similar to that of the 2006 GSE inventory survey, using essentially the same Microsoft Excel workbook, which was distributed electronically to GSE owners/operators at LAX. Notable changes in the 2013 survey form, compared to 2006, included elimination of the spreadsheet columns requesting information on where and how each piece of GSE is fueled at LAX and on odometer/hour meter readings. These columns were eliminated because very few respondents in the 2006 survey provided any such information, and because such information was not felt to be essential to the GSE inventory update. New columns were added to the 2013 survey form relative to asking where at the airport each piece of GSE is primarily used and where is it stored or serviced; however, only a few respondents in the 2013 survey provided such information. Similarly, a column was added requesting information about the number, location, type, and make/model of eGSE chargers currently located at LAX, but, here too, very little information was provided by respondents. A copy of the 2013 GSE inventory survey form is provided at Attachment A, along with the cover letter and e-mail message that accompanied the form during distribution.

Table 1

Summary of Nature, Number, and Fuel Type of GSE at LAX in 2006

	Equipment Type		Fuel Type									
			Diesel		Gasoline		Electric		LPG/CNG		Not Specified	
GSE Category	Count	% of Total	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category
Air Conditioner	9	0.3%	8	88.9%		0.0%	1	11.1%		0.0%		0.0%
Air Start	32	1.1%	32	100.0%		0.0%		0.0%		0.0%		0.0%
Aircraft Tractor	176	5.8%	157	89.2%	3	1.7%	14	8.0%	2	1.1%		0.0%
Baggage Tractor	600	19.7%	55	9.2%	79	13.2%	293	48.8%	173	28.8%		0.0%
Belt Loaders	280	9.2%	42	15.0%	94	33.6%	103	36.8%	34	12.1%	7	2.5%
Bobtails	32	1.1%	4	12.5%	26	81.3%		0.0%	2	6.3%		0.0%
Cargo Loader	164	5.4%	156	95.1%	8	4.9%		0.0%		0.0%		0.0%
Cargo Tractor	229	7.5%	21	9.2%	109	47.6%	4	1.7%	95	41.5%		0.0%
Cart	162	5.3%	6	3.7%	2	1.2%	152	93.8%	2	1.2%		0.0%
Catering Truck	62	2.0%	41	66.1%	17	27.4%		0.0%	4	6.5%		0.0%
Deicer	1	0.0%		0.0%	1	100.0%		0.0%		0.0%		0.0%
Fork Lift	251	8.2%	24	9.6%	15	6.0%	54	21.5%	153	61.0%	5	2.0%
Fuel Truck	36	1.2%	28	77.8%	6	16.7%		0.0%	2	5.6%		0.0%
Generator	17	0.6%	11	64.7%	6	35.3%		0.0%		0.0%		0.0%
Ground Power Unit	125	4.1%	96	76.8%	16	12.8%	12	9.6%	1	0.8%		0.0%
Hydrant Truck	26	0.9%	15	57.7%	11	42.3%		0.0%		0.0%		0.0%
Lavatory Truck	45	1.5%	9	20.0%	35	77.8%		0.0%		0.0%	1	2.2%
Lift	138	4.5%	32	23.2%	46	33.3%	38	27.5%	22	15.9%		0.0%
Other	102	3.3%	52	51.0%	34	33.3%	15	14.7%	1	1.0%		0.0%
Other ORE	303	9.9%	9	3.0%	272	89.8%	7	2.3%	15	5.0%		0.0%
Passenger Stand	51	1.7%	4	7.8%	27	52.9%	19	37.3%	1	2.0%		0.0%
Service Truck	180	5.9%	30	16.7%	140	77.8%	8	4.4%	2	1.1%		0.0%
Sweeper	10	0.3%	1	10.0%	4	40.0%	2	20.0%	1	10.0%	2	20.0%
Water Truck	9	0.3%	1	11.1%	7	77.8%		0.0%		0.0%	1	11.1%
Not Specified	7	0.2%		0.0%	1	14.3%		0.0%		0.0%	6	85.7%
Total Number And % Of Total	**3,047**	**100.0%**	**834**	**27.4%**	**959**	**31.5%**	**722**	**23.7%**	**510**	**16.7%**	**22**	**0.7%**

The distribution list provides the contact information of potential GSE owner/operators at LAX, including airline and non-airline tenants; government agencies; air carrier operating permit (ACOP) contacts; cargo service providers; and, ground service handlers. It was developed from a compendium of sources provided by LAWA combined with internet searches and in-the-field observations. The distribution list was updated based upon duplicate contacts, feedback from the respondents, or undeliverable surveys, ongoing communications between LAWA and GSE owner/operations, and input from LAWA operation officials. A copy of the distribution list for the 2013 GSE Inventory Survey Questionnaire is provided as Attachment B.

On February 28, 2013, each party identified on the distribution list was sent an electronic copy of the Microsoft Excel spreadsheet along with a cover letter from LAWA. The cover letter explained the background of the GSE inventory, described the data and information needs, specified the due dates for the survey information, and provided contact information to answer any questions regarding the survey and offer assistance in completing the spreadsheet if desired.

Over the two months that followed distribution of the survey, responses were received from the majority of the parties that were sent a survey request. Table 2 provides a summary of the GSE survey effort. Although responses were not received from 18 of the parties on the survey distribution list, LAWA determined that it is unlikely those parties own/operate GSE at LAX or that they use a third-party provider for GSE service.

Table 2

Summary of Response Types to GSE Inventory Survey

	Count	Percent
No. of parties who were sent an email-request to participate in survey	138	-
No. of parties who responded to the survey	120	87%
No. of respondents who indicated they do not own GSE and/or contract services to a third-party	75	62.5%
No. of respondents who indicated they own/operate GSE	45	37.5%

Inventory Survey Results

The 2013 GSE inventory survey results provide generally complete data relative to the overall nature, number, and fuel type of GSE currently operating at LAX, with responses for certain data fields being more complete than others.

Table 3 provides a summary of the results of the 2013 GSE Inventory survey. There are 3,096 pieces of GSE at LAX. However, a total of 366 GSE were considered on-road license plated vehicles and were excluded from the analysis and a total of six fuel-powered GSE were less than 25 horsepower and were also excluded from the analysis, leaving a total of 2,724 pieces of equipment. The complete consolidated database of GSE information received from all of the survey responses is provided herewith as Attachment C.

Table 3

Summary of Nature, Number, and Fuel Type of GSE at LAX in 2013

	Equipment Type		Fuel Type									
			Diesel		Gasoline		Electric		LPG		CNG	
GSE Category	Count	% of Total	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category
Air Conditioner	10	0.4%	10	100.0%								
Air Start Unit	35	1.3%	34	97.1%			1	2.9%				
Aircraft Tractor	193	7.1%	146	75.6%	1	0.5%	46	23.8%				
Baggage Tug	650	23.9%	53	8.2%	152	23.4%	298	45.8%	147	22.6%		
Belt Loader	259	9.5%	28	10.8%	34	13.1%	158	61.0%	39	15.1%		
Bobtail	21	0.8%	14	66.7%	7	33.3%						
Cargo Loader	165	6.1%	145	87.9%	6	3.6%	13	7.9%	1	0.6%		
Cargo Tractor	247	9.1%	35	14.2%	28	11.3%	161	65.2%	23	9.3%		
Cart	138	5.1%	1	0.7%	8	5.8%	129	93.5%				
Catering Truck	130	4.8%	113	86.9%	15	11.5%	2	1.5%				
Deicer	1	0.0%			1	100.0%						
Forklift	322	11.8%	24	7.5%	32	9.9%	62	19.3%	203	63.0%	1	0.3%
Fuel Truck	35	1.3%	34	97.1%					1	2.9%		
Generator	6	0.2%	4	66.7%	2	33.3%						
Ground Power Unit	113	4.1%	85	75.2%			28	24.8%				
Hydrant Cart/Truck	19	0.7%					19	100.0%				
Lavatory Cart	4	0.1%			2	50.0%	2	50.0%				
LavatoryTruck	30	1.1%	14	46.7%	12	40.0%	4	13.3%				
Lift	59	2.2%	14	23.7%	13	22.0%	24	40.7%	8	13.6%		
Other	147	5.4%	63	42.9%	59	40.1%	11	7.5%	1	0.7%	13	8.8%
Passenger Stand	33	1.2%	6	18.2%	16	48.5%	10	30.3%	1	3.0%		
Service Truck	73	2.7%	34	46.6%	26	35.6%	10	13.7%	3	4.1%		
Sweeper	26	1.0%	1	3.8%	3	11.5%	19	73.1%	3	11.5%		
Water Truck	8	0.3%	2	25.0%	4	50.0%	2	25.0%				
Total Number And % Of Total	**2,724**	**100.0%**	**860**	**31.6%**	**421**	**15.5%**	**999**	**36.7%**	**430**	**15.8%**	**14**	**0.5%**

Attachment A

2013 LAX GSE Inventory Survey
Form, Cover Letter, and E-mail Message

From: Ramirez, Juan
To:
cc: "jpandya@lawa.org"; "l.peters@avairpros.com";
Subject: LAX GSE Study and Survey Questionnaire
Date: Thursday, February 28, 2013 12:39:00 PM
Attachments: Ground Service Equipment (GSE) Owners and Operators at LAX_022713.pdf
LAX GSE Inventory form_Base v02_19 Feb 2013.xls

Good Afternoon,
On behalf of Los Angeles World Airports (LAWA), I am providing you with the attached information regarding a comprehensive study at LAX to evaluate the feasibility of converting all Ground Service Equipment (GSE) to zero emission (i.e., electric) technology. A more complete description of the study is provided in the attached cover letter. A first step in the study is to conduct a comprehensive inventory of all GSE currently operating at LAX, for which **LAWA needs all GSE owners/operators to complete and return the attached survey questionnaire by Friday, March 15 2013**.

Based on various contact lists at LAX, your company is identified as one that may utilize GSE at LAX. A delineation of what is considered to be GSE is provided in the first tab of the attached Excel spreadsheet ("GSE Categories"). If you own/operate such equipment at LAX, please complete and return the attached questionnaire by March 15th. If you do not own/operate such equipment at LAX, please indicate so immediately in an email Reply. If your airline/company utilizes GSE at LAX but such equipment and services are provided on a contract basis by another company, please indicate so immediately in an e-mail Reply and provide the name of that company.

Please note that given the requirement to reach all owners and operators at LAX, multiple distribution lists were obtained and compiled. It is not our intent to have you duplicate your efforts. If there is more than one company representative listed in the "To" line of this e-mail message, please identify in your e-mail Reply a single point of contact to represent your firm in this process. We will modify future distributions accordingly.

On behalf of LAWA, thank you in advance for your assistance and participation in this work effort. If you have any questions regarding the study or this request, please contact Mr. Jaideep Vaswani at (424) 646-5137 or JVaswani@lawa.org.

Sincerely,

Juan J. Ramírez | Planner | **CDM Smith** | 523 W. Sixth Street, Suite 400 | Los Angeles, CA 90014 | T/F: 213.457.2179 | ramirezjj@cdmsmith.com | cdmsmith.com

Los Angeles
World Airports

TM

February 27, 2013

Ground Service Equipment (GSE) Owners and Operators at LAX

Re: **LAX eGSE Comprehensive Feasibility Study**

Dear Sir or Madam:

The purpose of this letter is to inform you and ask for your help in a comprehensive study being undertaken by LAWA regarding the feasibility of, and plans for, the conversion over time of internal combustion-powered GSE (icGSE) to electric-powered GSE (eGSE) at LAX. As you may be aware, various requirements for the reduction of airport-related air pollution emissions were enacted with the implementation of the LAX Master Plan, including a requirement that all GSE at LAX be converted to zero- or extremely low-emission technologies. Provided below is a brief background describing the requirements for converting GSE at LAX and an overview of work to be conducted as part of this comprehensive feasibility study.

As a first step in completing the feasibility study, LAWA is conducting a comprehensive inventory of GSE currently operating at LAX, and I ask for your assistance in completing the enclosed GSE Survey Questionnaire by March 15, 2013. To assist and expedite this effort, LAWA has developed an electronic spreadsheet in Microsoft Excel that should be used to submit this information.

Background

The LAX Master Plan provides a comprehensive improvement plan to better accommodate existing passenger, cargo, and aircraft activity at LAX and to provide for increased activity levels at LAX in the future. To date, several of the Master Plan improvement projects have been completed, such as the South Airfield Improvement Project, Taxiway R, and new ARFF, or are under construction, such as the Bradley West Project, or in the detailed planning and design stage, such as the Midfield Satellite Concourse. In conjunction with implementation of the Master Plan improvements, the Master Plan EIS/EIR and the federal Clean Air Act Conformity Determination for the Master Plan set forth various requirements for the reduction of airport-related air pollution emissions, including a requirement that all GSE at LAX be converted to zero- or extremely low-emission technologies. Additional related legal requirements specific to LAX including the Master Plan Community Benefits Agreement and the Master Plan Stipulated Settlement, also set forth requirements for the conversion of icGSE to eGSE similar to the requirements of the Master Plan EIS/EIR. In addition to requirements associated with the LAX Master Plan, the state of California Air Resources Board has also set forth various requirements for the reduction of air pollutant emissions from on-road and off-road fleets of equipment including GSE, which the conversion of existing GSE to zero- and extremely low-emission technologies can serve a key role in the GSE owners/operators' ability to meet the state-mandated deadlines.

Feasibility Study Approach

The feasibility study being completed by LAWA includes an assessment of the nature and operational characteristics of the GSE fleet currently in use at LAX, evaluation of existing electrical power conditions at aircraft gate/ramp areas, investigation of current and developing technologies related to eGSE including equipment and chargers, review of the GSE characteristics and programs of other comparable airports in the U.S., evaluation of potential business models related to how GSE services at LAX may be provided, estimation of GSE needs at LAX in the future, and completion of a "gap analysis" delineating potential deficiencies and needs relative to existing electrical infrastructure and capabilities at LAX to support an all eGSE fleet in the future. In conjunction with the technical work summarized above, the feasibility study includes stakeholder outreach to encourage the participation of airlines, ground handler companies, and others to operate GSE at LAX in completing the study, particularly as related to understanding from the operators' perspective the opportunities and constraints for converting to eGSE at LAX.

I welcome and encourage your participation in this study as an active partner in the development of a viable and successful program for the conversion of GSE at LAX.

Thank you in advance for your participation in this effort. If you have any questions, please contact Mr. Jaideep Vaswani via email at jvaswani@lawa.org.

Sincerely,

Robert D. Freeman
Environmental Airport Manager II
Environmental Services Division
Los Angeles World Airports

RDF:JP:grg

Attachment: LAX Ground Service Equipment (GSE) Survey Questionnaire

Cc: Michael Feldman

Z:LETTERSANDMEMOS:022713

LAX GROUND SERVICE EQUIPMENT (GSE) SURVEY QUESTIONNAIRE

As noted in the attached cover letter, a key first step in completing the LAX eGSE Feasibility Study is to develop a comprehensive inventory of GSE currently operating at LAX. On behalf of LAWA, I thank you in advance for your cooperation and timely response to this request, and ask that **the information being requested herein be submitted to LAWA no later than March 15, 2013**.

Data & Information Needs

For the purposes of this inventory, GSE are defined to include motorized vehicles and equipment, with engines of 25 hp or greater, that is either designated as "off-road" or "street legal" and is intended for use on the "airside" of airport operations. Also included in this category are all electric-powered GSE of any horsepower rating. Enclosed is a listing of various categories of GSE typically associated with airside operations. This listing provides a guide for you to use in reporting the GSE that you own or operate at LAX.

The information requested for each piece of GSE with an engine of 25 hp or greater (along with all electric-powered GSE) basically includes:

- Respondent contact information
- GSE category
- Fuel type
- Engine horse power
- GSE Manufacturer
- Equipment Identification Number
- Engine model year
- Typical activity level
- Primary area(s) where operated

LAWA has developed an electronic spreadsheet, in Microsoft Excel, that must be used to submit the requested information. An electronic copy of the spreadsheet is attached to the e-mail transmitting this notification letter. Much of the spreadsheet has been customized to facilitate your entry of the information, including the ability to use "drop-down" menus for entering certain information. ***If you have any difficulty accessing, downloading or opening the file, please notify immediately either of the contact people below.***

Contact Information

As noted in the spreadsheet, contact information for your firm is being requested so that we may contact the most appropriate individual(s) in your firm for this effort.

Lastly, questions and comments regarding this inventory can be directed to either of the following; please e-mail your completed survey questionnaire to both parties:

Ms. Jignasha Pandya
LAWA, Environmental Services Division
(424) 646-5714
JPandya@lawa.org

Mr. Juan Ramirez
CDM Smith
(949) 752-5452
RamirezJJ@cdmsmith.com

“Ground Support Equipment,” “Ground Service Equipment,” or “GSE” means any vehicle or portable equipment if:

- The unit is powered by an electric motor, internal combustion engine (ICE), or alternative-power source;
- The equipment is used to support airfield operations, and can generally be classified using the categories defined below.
- For conventional gasoline, CNG/LPG, and diesel units, only units twenty-five (25) horsepower or greater (ICE equivalent) are included in the GSE inventory (electric and alternative-powered units included in one of the categories below are still considered GSE); *and*
- The GSE is operated on the airfield, aircraft or GSE maintenance areas, or aircraft or GSE storage areas, and *not* exclusively for airline passenger transport (*i.e.*, ground access vehicles are *not* considered GSE).

The following table lists, for each GSE type, a brief description, reference model, picture, and/or distinction from other similar categories. The reference models and descriptions are provided as a guide, and are not intended to be exhaustive or restrictive. GSE units that fall within a category based on design, engine selection, and duty cycle should be categorized as such (i.e., rather than as “Other”) wherever possible.

#	GSE Category	Description	Reference Model/ Picture
1	Air Conditioner	PORTABLE; either on skids, carts, or on the back of truck beds, that provide conditioned air to aircraft	 ACE 802: www.fsm-vienna.at

#	GSE Category	Description	Reference Model/ Picture
			 ACE 804: www.fsm-vienna.at
2	Air Start	PORTABLE; that provide high air flow to start aircraft jet engines; can be IC engines or turbine engines (must be specified in survey if turbine); bottle-starts (compressed air) are not included in survey	 ACE 300/400: www.fsm-vienna.at
3	Aircraft Tractor	Includes wide-body, narrow-body, push-back, and long-haul or maintenance tractors used to move aircraft (aka paymover); conventional and towbarless; (mounted GPU engines should be reported as a separate unit under “Ground Power Unit”)	 S&S/TUG GT-35: www.ssss.com
			 S&S/TUG MC: www.ssss.com
			 Douglas TBL-180: www.douglas-tugmaster.co.uk

#	GSE Category	Description	Reference Model/ Picture
			 Douglas TBL-400: www.douglas-tugmaster.co.uk
			 S&S/TUG GT-50G: www.ssss.com
			 S&S/TUG T-750: www.ssss.com
4	Baggage Tractor	Hitched to a series of carts to transport luggage between the aircraft and the terminal; distinguished from cargo tractor by drawbar (3,000 lbs. vs. 5,000 lbs. for cargo tractor), tow capacity (30,000 lbs. vs. 50,000 lbs.) and duty cycle (intermittent vs. 6-12 hrs. non-stop) (see also “Cargo Tractor” description)	 S&S/TUG MA-50: www.ssss.com

#	GSE Category	Description	Reference Model/ Picture
5	Belt Loader	Used to load baggage into aircraft	 S&S TUG 660: www.ssss.com
6	Bobtail	ORE	 Eagle Bobtail F350: www.eagleindustrialtruck.com
7	(Cabin Service Truck)	ORE; classify as "Catering Truck" (same duty cycle, emissions)	 Hi-Way/TUG 660 chassis: www.tescohilift.com
			 Hi-Way F650 chassis: www.tescohilift.com

#	GSE Category	Description	Reference Model/ Picture
8	Cargo Loader	Loads cargo in aircraft via a platform that is loaded then launched up to the deck level	 FMC Commander 15: www.fsm-vienna.at
			 FMC Commander 30: www.airport-technology.com
9	Cargo Tractor	Hauls heavy cargo loads in carts; distinguished from baggage tractors by drawbar (4,000-12,000 lbs. vs. 3,000-3,500 lbs. for baggage tractors), tow capacity (50,000-60,000 lbs. vs. 30,000 lbs.) and duty cycle (6-12 hrs. non-stop vs. intermittent); also, cargo tractors frequently use a side hitch (see also description of "Baggage Tractor")	 S&S/TUG MT: www.ssss.com
10	Cart	Include only self-propelled carts (e.g., personnel carts, some lavatory carts and hydrant carts) in the inventory; do *not* include baggage carts, cargo carts, hydrant carts, etc., that are towed.	 Taylor Dunn: www.taylor-dunn.com

#	GSE Category	Description	Reference Model/ Picture
11	Catering Truck	ORE; include cabin service trucks of all types in this category	 Hi-Way/TUG 660 chassis: www.tescohilift.com
			 Hi-Way F650 chassis: www.tescohilift.com
12	Deicer	Used to spray deicing fluid on aircraft; list both engines in the inventory	 FMC LMD, Dual engines: www.airport-technology.com
			 FMC Tempest II, single engine: www.fsm-vienna.at

#	GSE Category	Description	Reference Model/ Picture
13	Fork Lift	All fork lifts are included in this category, including aircraft engine fork lifts	 Toyota 5,000 lb: www.loadstarmhe.com
14	Fuel Truck	ORE	 F750, DART: www.dukestransportation.com
			 DART 10,000 gal: www.dukestransportation.com
15	Generator	PORTABLE; includes welders, light stands, etc.; only include portable generators in the inventory; stationary emergency backup generators, shop generators, and handheld generators smaller than the threshold cutoff should not be listed	 MD-3: www.victorygse.com

#	GSE Category	Description	Reference Model/ Picture
16	Ground Power Unit	PORTABLE; provides electrical power to aircraft located in remote areas, when the APU is not operational, or when the gate does not supply power	 TLD GPU-4000: www.tld-gse.com
			 TLD ACE: www.tld-gse.com
			 TLD GPU-4090: www.tld-gse.com
17	Hydrant Truck	ORE; do not include non-motorized hydrant carts	Ford F250/F350 chassis

#	GSE Category	Description	Reference Model/ Picture
18	Lavatory Truck	ORE; you all know what this one is	 TLD ACE-1410: www.tld-gse.com
			 Wollard TLS-770/F350 chassis: www.gseservices-llc.com
19	Lift		 ML15-20: www.tescohilift.com
20	Passenger Stand	ORE; indicate in the survey if the unit is ORE or not	 Wollard CMPS170/228: www.nmc-wollard.com

#	GSE Category	Description	Reference Model/ Picture
21	Service Truck	ORE; this category is broad, but does *not* include passenger cars, vans, or buses (those units should be classified as “Other ORE”)	 Ford F250/F350: www.contentedits.com
22	Sweeper	Street and shop sweepers	 Tennant: www.tennantco.com
23	Water Truck	ORE	 Wollard TWS-402, F250/F350 chassis: www.nmc-wollard.com
24	Other	Anything that absolutely does not fit into a category listed above; do *not* include ORE in this category (see “Other ORE”)	Only categorize it as “Other” if it does not fit into another category.
25	Other ORE	ORE; any ORE that absolutely does not fit into a category listed above (e.g., cars, buses, vans)	Only categorize it as “Other” if it does not fit into another category. Examples include: Ford E350 vans, passenger cars, Blue Bird buses, etc.

Owner/Operator:	Airline 1
Contact:	Operator
Address:	LAX
	Mailstop
	Los Angeles, CA ZIP
Phone:	(310) 555-1212
E-mail:	mymail@lax.com

Survey current as of:	1/1/2006

Notes or Comments:	

LAX Los Angeles World Airports

Operator Equipment ID	GSE Category	Engine Specifications				On-road Equivalent	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
		Manufacturer	Model Year	Fuel Type	Power (BHP)				
EXAMPLE 1	**Belt Loader**	**Deutz**	**1997**	**diesel**	**60**	**No**	**Gates 40 thru 46**	**Air Freight 8 Building**	*[Can enter up to 255 characters]*
EXAMPLE 2	**Cargo Loader**	**TUG**	**1986**	**diesel**	**210**	**No**	**Fed Ex Cargo Ramp**	**Fed Ex Maint. Bldg**	*[Can enter up to 255 characters]*

Equipment Group	Fuel Type	Number of Units	Notes and Comments
generators/lights/welders	gasoline	17	(EXAMPLE 1)
eGSE Charger(s)	electric	4	(EXAMPLE 2) PosiCharge 2500 IGBT-24V-220A located under T-4

GSE Categories	Small Equipment Groups	ORE	Fuel Types
Air Conditioner	landscaping equipment	No	diesel
Air Start - ICE	pumps/compressors	Yes - Other	gasoline
Air Start - Turbine	generators/lights/welders	Yes - Light Duty Truck	CNG
Aircraft Tractor	utility carts	Yes - Passenger Car	LPG
Baggage Tractor	eGSE Charger(s)	Yes - Bus	electric
Belt Loader	other		diesel/elec hybrid
Bobtail			gas/elec hybrid
Cargo Loader			CNG/elec hybrid
Cargo Tractor			petrol fuel cell
Cart			H2 fuel cell
Catering Truck			Hydrogen ICE
Deicer			*alt1 - specify*
Fork Lift			*alt2 - specify*
Fuel Truck			
Generator			
Ground Power Unit			
Hydrant Truck			
Lavatory Truck			
Lift			
Passenger Stand			
Service Truck			
Sweeper			
Water Truck			
Other			
Other ORE			

Attachment B

Distribution List for 2013 LAX GSE Inventory Survey Questionnaire

Company Name	First Name	Last Name	Title	Phone	Email
Ground Handler Managers					
ASIG	Rick	Cortez	Staiton Manager	(671) 642-5244 x122	rick.cortez@asig.com
ASIG	Guillermo	Marron	Cargo Manager	(310) 641-3424 x221	guillermo.marron@asig.com
ASIG	Larry	McMahon	VP, Fuel Consortiums LAXFuel	310-646-1202	lawerence.mcmahhon@asig.com
Evergreen	Gilbert	Rodriguez	Manager	(310) 654-2060	grodriguez@evergreen-eagle.com
IAS Integrated Airlines Inc.	Juan	Reyes	Station Manager	310-242-5104	jureyes@iasair.com
Menzies	Frank	Dobbelsteijn	VP Ground Handling	310-685-7189	frank.dobbelsteijnmenziesaviation.com
Menzies	Mike	Youlten	GM narrow/wide	(650) 219-3183	mike.youlten@menziesaviation.com
Servisair	Lynn	Murray	Station Manager	(310) 646-1942 x215	lynn.murray@am.servisair.com
Servisair	Jose	Najera	Operations Manager	(310) 670-3895	jose.najera@am.servisair.com
Swissport	Dion	Fatafehi	Station Manager	(310) 910-9560	dion.fatafehi@swissport.com
Swissport	David	Lopez	Ramp Manager	(310) 646-1435	david.lopez@swissport.com
Swissport	Dawn	Oakley		703-742-4329	dawn.oakley@swissport.com
Los Angeles Air Cargo Service Managers Association					
Aero Port Services	Robert	Yim	Chief Operating Officer	310-623-8230	robertyim@aeroportservices.com
Aero Port Services	Jim	Kawashima		310-623-8230	jkawashima@aeroportservices.com
Aerounion (6R)	Luis	Ramos		941-737-1671	lramosc@aerounion.com.mx
Aerounion (6R)	Jorge	Rivera		310-649-0069	jrivera@aerounion.com.mx
Aerounion (6R)	Nelio	Da Matta			ndematta@aerounion.com.mx
Air Canada Cargo (AC)	Cynthia	Cichy		310-646-4942	cynthia.cichy@aircanada.ca
Air Canada Cargo (AC)	Faizal	Buksh		310-646-4942	faizal.buksh@aircanada.ca
Air France Airlines (AF)	Jack	McAllister		310-646-3623 x808	jamcallister@airfrance.fr
Air France Airlines (AF)	Cathy	Altazin		310-646-3623 x806	caaltazin@airfrance.fr
Air New Zealand (NZ)	Kevin	Murchan		310-646-8204	kevin.murchan@airnz.com
Air New Zealand (NZ)	Jack	Holman			jack.holman@airnz.com
American Airlines (AA)	Andrew	Baum		310-646-7115	andrew.baum@aa.com
American Airlines (AA)	Laurie	Barragan		310-646-5527	laurie.barragan@aa.com
American Airlines (AA)	Bebelyn	Asturias		310-642-6805	bebelyn.asturias@aa.com
American Airlines (AA)	Mohamed	Niazi		310-642-6806	mohamed.niazi@aa.com
Asiana Airlines (OZ)	Woon	Do Han		310-642-0310	laxkkf@flyasiana.com
Asiana Airlines (OZ)	Jay	Yim			jaeyi@flyasiana.com
Aviation Safeguards	Joe	Conlon		310-981-4530	jconlon@aviationsafeguards.com
Aviation Safeguards	Casey	Neale		310-642-7600	cneale@aviatonsafeguards.com
Cargolux (CV)	Michael	Lourey		310-215-8491	michael.lourey@cargolux.com
Cargolux (CV)	Walter	Calzadilla		310-215-4678	walter.calzadilla@cargolux.com
Cargolux (CV)	Rudy	Hernandez			rodolfo.hernandez@cargolux.com
Cargolux (CV)	Jim	Helvey			jim.helvey@cargolux.com
Cathay Pacific (CX)	Ringo	Sin		310-417-0052 x1	laxris@cathaypacific.com
Cathay Pacific (CX)	Ning	Liu			laxliu@cathaypacific.com
Cathay Pacific (CX)	Kenneth	Kong			laxkkk@cathaypacific.com
China Airlines, LTD. (CI)	Kevin	Lou	Cargo Services Manager	310-646-4230 x110	kevin.lou@china-airlines.com
China Airlines, LTD. (CI)	Terry Sue	Aikens		310-646-4230 x109	terry.sue.aikens@china-airlines.com
China Cargo Airlines (CK)	Peter	Cheng		310-649-6688	peter-cheng@ckair.com
China Eastern Airlines (MU)	Joe	Lahorra			joe-lahorra@ckair.com
Customs Air Warehous, Inc.	Billy G.	Cathcart		310-216-7593	billy.cathcart@customair.com
Customs Air Warehous, Inc.	Abel	Lopez		310-216-3041 x850	abel@customair.com
Customs Air Warehous, Inc.	Dan	Cathcart		310-216-7593	dan.cathcart@customair.com
DHL Express USA (DO)	Peter	Bardens			peter.bardens@dhl.com
DHL Express USA (DO)	Vincent	Martinez		424-223-6350	vincente.martinez@dhl.com
DHL Express USA (DO)	Alex	Jauregui		424-223-6355	alex.jauregui@dhl.com

Company Name	First Name	Last Name	Title	Phone	Email
Delta Cargo (DL)	Sue	Conlon		310-258-6070	susan.m.conlon@delta.com
Delta Cargo (DL)	Kelvin	Wimbish		310-258-6029	kelvin.d.wimbish@delta.com
Delta Cargo (DL)	Sandy	Deatherage		310-258-6031	sandy.deatherage@delta.com
Delta Cargo (DL)	Errick D.	Walker		310-258-6008	errick.d.walker@delta.com
Emirates Sky Cargo (EK)	Siegfried	Meyer		310-279-7306	siegfried.meyer@emirates.com
Emirates Sky Cargo (EK)	Alfredo	Limon		310-338-0023 x203	alfredo.limon@emirates.com
Emirates Sky Cargo (EK)	Anna	Brown		310-338-0023	anna.brown@emirates.com
FedEx Express (FX)	Cal	Anderson		310-364-3000	cranderson1@fedex.com
FedEx Express (FX)	Delora	Colley		310-563-4440	dacolley@fedex.com
FedEx Express (FX)	Steve	Hornstra		310-348-2188	sjhornstra@fedex.com
Integrated Airlines Services, Inc.	Justyna	Hazard		310-670-4930	jhazard@iasair.com
Integrated Airlines Services, Inc.	Ken	Katchen		303-748-6647	kkatchen@iasair.com
Integrated Airlines Services, Inc.	Paul	Henshaw		503-997-1455	pthenshaw@iasair.com
Integrated Airlines Services, Inc.	Juan	Reyes		310-670-4930	jureyes@iasair.com
Japan Airlines Co., LTD. (JL)	Eddie	Matsumoto		310-646-3640	eddie.matsumoto@jal.com
Japan Airlines Co., LTD. (JL)	Yutaka	Matsumoto			yutaka.matsumoto@jal.com
Jet Pets	David	Hasenauer		310-823-8901 x4	david@jetpets.com
Jet Pets	Lindley	Hasenauer		310-823-8901 x5	lindley@jetpets.com
Kalitta Air LLC (K4)	Tanja	Janfruechte		310-645-2178	tj@pacificaircargo.com
Kalitta Air LLC (K4)	Beti	Ward			beti.ward@pacificaircargo.com
Korean Air (KE)	John	Song		310-417-5235	jgsong@koreanair.com
Korean Air (KE)	Kevin	Mun		310-417-5256	kmun@koreanair.com
Korean Air (KE)	Ismael	Merino		310-417-5288	imerino@koreanair.com
Korean Air (KE)	Dong	Lee		310-417-5260	donglee@koreanair.com
Lufthansa German Airlines (LH)	Todor	Todorov		310-242-2480	todor.todorov@dlh.de
Lufthansa German Airlines (LH)	Rigo	Cabrera		310-242-2430	rigo.cabrera@dlh.de
Lufthansa German Airlines (LH)	Veli	Polat		310-242-2490	veli.polat@dlh.de
Malaysia Airlines Cargo (MH)	Julie	Johansson		310-215-8201	jjohansson@malaysiaairlines.com
Malaysia Airlines Cargo (MH)	Avtar	Singh		800-233-5597	cargosales@malaysiaairlines.com
Menzies Aviation	Julio	Glavez		310-670-0567	julio.galvez@menziesaviation.com
Menzies Aviation	Jamila	Alemzay		310-404-7396	jamila.alemzay@menziesaviation.com
Mercury Air Cargo	Richard	Stumpp		310-646-1108; 310-703-7244	rstumpp@mercuryair.com
Mercury Air Cargo	John	Peery		503-0370	jpeery@mercuryair.com
Mercury Air Cargo	Sean	Toyomura			stoyomura@mercuryair.com
Nippon Cargo Airlines (KZ)	Nelson	Carrera		310-342-2424	nelson.carrera@nca.aero
Nippon Cargo Airlines (KZ)	Julio	Ceron		310-417-0820	julio.ceron@nca.aero
Polar Air Cargo (PO)	Andrew	Senchyshyn	Station/Terminal Manager	310-568-4552	
Polar Air Cargo (PO)	Eddie	Nagahashi		310-215-4677	eddie.nagahashi@polaraircargo.com
Servisair	Jesse	Hernandez		310-678-1483	jesse.hernandez@am.servisair.com
Singapore Airlines (SQ)	Jason	Wong		310-951-1954	jason_wong@singaporeair.com.sg
Singapore Airlines (SQ)	Felipe	Morello		310-420-7434	felipe_more@singaporeair.com.sg
Swissport Cargo Services	Mark	Wood		310-910-9541	mark.wood@swissport.com
Swissport Cargo Services	Miles	Mosca		0320	miles.mosca@swissport.com
Swissport Cargo Services	Diana	Avila		310-910-9543	diana.avila@swissport.com
Thai Airways International LTD.	Geoff	Gilbert		310-670-8591	geoff.g@thaiairwaysusa.com
Thai Airways International LTD. (TG)	John	Devins		310-670-8582	thaicargo@thaiairwaysusa.com
Total Airport Services	Tim	Harvey		310-342-0136; 310-818-9566	tim.harvey@tasinc.aero
Total Airport Services	George	Williams		951-775-7056	george.williams@tasinc.aero
United / Continental Airlines (UA)	Michael	Cerletti	Area Manager Cargo	424-789-5560	michael.cerletti@united.com
United / Continental Airlines (UA)	John	Kaiser		6112	john.kaiser@united.com
United / Continental Airlines (UA)	Todd	Couper	Laxfuel Corp	773.749-0186	todd.couper@united.com
United Parcel Service (5X)	David	Miyakawa		310-670-3699	dmiyakawa@ups.com
United Parcel Service (5X)	William	Cunningham		323-217-5057	wxcunningham@ups.com

Company Name	First Name	Last Name	Title	Phone	Email
Worldwide Flight Services	John	Oh		310-864-8140	joh@worldwideflight.com
Worldwide Flight Services	Keith	Beaudet		310-414-9863	kbeaudet@worldwideflight.com
Association	Judy	Grimsman		310-863-5877	judychb@gmail.com
Association	Wayne	Wagner		8627	wayne_wagner@ftn.fedex.com
Federal Aviation Administration	Robert	Cassidy	Manager, LA Security Field Office		Robert.Cassidy@faa.gov
Federal Aviation Administration	Karen	Yoneda	Hazardous Materials Specialist	310-725-3984	karen.yoneda@faa.gov
Federal Bureau of Investigation	Kevin	Hogg		310-477-6565	kevin.hogg@ic.fbi.gov
Measures	Dave	Cassidy		526-622-0425	dcassidy@acwm.lacouny.gov
Measures	Warren	Dias		562-622-0423	wdias@acwm.lacounty.gov
Los Angeles Police Department	Cpt. Raymond	Maltez		310-646-2255	23219@lapd.lacity.org
Los Angeles Police Department	Lt. Synthia	Lee			25806@lapd.lacity.org
LAX Crime Task Force	Det III Sup Ray	Terrones		310-577-3445	23589@lapd.lacity.org
LAX Crime Task Force	Off. Jesse	Ortiz		310-577-3485	27067@lapd.lacity.org
Transportation Security Administration	Carlene	Boisselle		310-242-2357	carlene.boisselle@tsa.dhs.gov
Customs and Border Protection	Todd	Hoffman		310-215-2618	todd.hoffman@dhs.gov
Customs and Border Protection	Scott T.	Jackson	Assistant Port Director	(310) 348-4642	SCOTT.T.JACKSON@CBP.DHS.GOV
USDA Plant Inspection Station	David	Gabriel		310-725-1925	david.f.gabriel@aphis.usda.gov
USDA Plant Inspection Station	Todd	Pitlik		7528	todd.j.pitlik@aphis.usda.gov
Immigration and Customs Enforcement	Alison	Levine		310-335-5933	alison.levine@dhs.gov
Immigration and Customs Enforcement	Scott	Maekawa	Acting ASAC		Scott.S.Maekawa@ice.dhs.gov
Immigration and Customs Enforcement	Matthew	Ciesla		310-335-5944	Matthew.ciesla@dhs.gov
US Food and Drug Administration	Chiquita	McClelland		310-215-2373	cmcclell@ora.fda.gov
US Food and Drug Administration	Sylvia	Thomas		310-215-2040 x110	sylvia.thomas@fda.gov
US Fish and Wildlife Service	Eddie	Newcomer		310-328-1516 x225	ed_newcomer@fws.gov
US Fish and Wildlife Service	Erin	Dean		310-328-1516 x211	erin_dean@fws.gov
US Fish and Wildlife Service	Mike	Osborn		310-328-1516 x206	walter_osborn@fws.gov
US Post Office	John W.	Holden		310-337-8700	john.w.holden@usps.gov
US Post Office	Joe	Ford	Transportation Mgr	310-337-8720	joe.n.ford@usps.gov
US Post Office	Chris	Sioures	Postal Inspector	310-337-8835	casiouris@uspis.gov
US Post Office	Regenia	Sebree	Postal Inspector	310-649-7463	rlsebree@uspis.gov
CDC Public Health	Kimberly	Crocker		310-348-6481	krcrocker@cdc.gov
CDC Public Health	Keysha	Ross			kdr6@cdc.gov
CDC Public Health	Perry	Camagong			pec2@cdc.gov
County Public Health Vet Svc	Dr. Karen	Ehnert		213-989-7060	kehnert@ph.lacounty.gov
County Public Health Vet Svc	Jackie	Chapman			jchapman@ph.lacounty.gov
Air Carrier Operating Permit (ACOP)					
ABX Air Inc	Jeremy	Heard	Manager Airport Affairs	937-366-2114; c: 937-655-	Jeremy.Heard@ABXAir.com;
Aeroflot-Russian Airlines	Irina	Poberejskaya	Assistant of General Manager	310-281-5305 x108	ipoberejskaya@aeroflot-lax.com
Aerologic	Todor	Todorov	Gateway Handling Manager	310-242-2480	todor.todorov@dlh.de
AeroUnion	Luis	Ramos Cabrero	Gateway Manager	310-649-0069	lramosc@aerounion.com.mx;
MAS Air	Juan Carlos	Mencio	Corporate Counsel	786-265-6091	jmencio@lan.com; jackie.lefort@lan.com;
Aeromexico Airlines	Jorge	Silva	Station Manager	310-646-0338 x11	jsilva@aeromexico.com
Matrix Aviation / Air Berlin	Borseen	Oushana	Station Manager	310-993-7671	borseen@matrix-aviation.com
Matrix Aviation / Air Berlin	Jan R.	Steinwald	Direct Business Development	310-993-7672	jan@matrix-aviation.com
Air Canada	Sylvette	Chung Lim	Real Estate Manager	514-422-4225	lee.chunglim@aircanada.ca
Air China Cargo	Charles	Tong	Station Manager	310-348-9908	tongcheng@airchinacargo.com
Air China Cargo	Ji peng	Zhang	Cargo Supervisor	310-348-9908	jipeng.zhang@airchina.com
Air China	Barry	Mann	Station Manager	310-215-1188	barry.mann@airchina.us
Air New Zealand	Sheila	O'Neil	Airport Manager the Americas	310-665-3980	sheila.oneil@airnz.com
Air Pacific	Len	Sloper	RGM Airports	310-568-8676	len.sloper@airpacific.com
Air Tahiti Nui	Brian	Kay	Station Manager	310-989-7080	brian.kay@airtahitinui-usa.com
AirTran Airways Inc	Klaus	Goersch	EVP Ops & Customer Service	407-318-5106	joseph.rector@airtran.com
AirTran Airways Inc	Dave	Bailey		310.665.5760	dave.bailey@wnco.com

Company Name	First Name	Last Name	Title	Phone	Email
Alaska Airlines	Celley	Buchanan	General Manager	310-665-1450	celley.buchanan@alaskaair.com
Alitalia	Maria	Sacconi	VP Sales NAM	212-903-3439	sacconi.maria@alitalia.it;
ANA	Richard	Ide	Station Manager	310-646-1490	r.ide@fly-ana.com; m.sakai@fly-ana.com
Allegiant Air	Thayne	Klingler	Manager Airports	702-589-8113	thayne.Klingler@allegiantair.com
American Airlines and American Eagle	Steve R.	Holt	Principal	817-931-8798	steven.holt@AA.com
Ameriflight	Dave	DeRose	Executive Vice President/ CFO	818-847-0000	vdean@ameriflight.com
Ameriflight	Paul	Halter		(818) 847-0000 Ext. 117	phalter@ameriflight.com
Asiana Airlines	Ralph	Myers	General Manager	310-642-0301	rmyers@flyasiana.com
Atlas Air Inc	Kevin	Clark	Manager Facilities	914-701-8523	Kevin.Clark@atlasair.com
British Airways	Ken	Deming	Manager Properties Americas	212-716-0355	ken.deming@ba.com
Cargolux Airlines	Michael	Lourey	Regional Manager	310-215-8491	michael.lourey@cargolux.com
Cathay Pacific	Carrie E.	Sullivan	Airport Services Manager	310-417-0243	carrie_sullivan@cathaypacific.com
China Airlines	Spencer	Lee	Station Manager	310-215-5657	spencer.lee@china-airlines.com; schiu@china-
China Cargo Airlines LTD	Rozky	Lou	Accounting Manager	773-894-3540	ljs@ckair.com
China Eastern Airlines	Huaxin	Zhang	Managing Director/North America	626-583-1511	hxzhang66@gmail.com
China Southern Airlines	Zhang Jin	Lan	Accounting Manager	323-653-8088	zhangjinlan@CSAir.com
Delta Connection	John A.	Coffield	GM, Customer Service	612-713-6768	john.coffield@compassairline.com
Volaris	Ramez	Reno	Airport Manager	310-670-0326	ramez.reno@volaris.com
Copa Airlines	Cesar	Pina	Station Manager	424-789-5271	cpina@copaair.com
Delta Air Lines	Jim	Boucher	General Manager Properties	404-773-6922	jim.boucher@delta.com
El Al Israel Airlines Ltd	Dan	Idy	Station Manager	310-646-2909	didy@elalusa.com
Emirates	Paul Daniel	Tuite	Airport Services Manager	310-645-9044	paul.tuite@emirates.com
Eva Airways Corporation	Bernie	Lin	Station Manager	310-646-9821	bernielin@evaair.com
Evergreen International Airlines, Inc.	Fawn	Schuch	Director Operations Control	503-472-0011 x4375	fawn.schuch@evergreenaviation.com
Federal Express	Teri	Kerichenko	Airport Relations & Develoment	901-434-9649	tmkerichenko@fedex.com
Florida West	Gustavo	Alberty	Director of Flight Control	786-265-0383	gaalberty@fwia.com
Air Atlanta Icelandic	Magnus	Sigurdsson	V.P. Flight Operations	354-458-4000	magnus.sigurdsson@airatlantic.com
Frontier Airlines Inc	Greg	Broemer	P&F Manager	414-294-5157	greg.broemer@rjet.com;
Great Lakes Airlines	Charles	Howell, IV	CEO	307-432-7020	chowell@flygreatlakes.com
Gulf & Caribbean Cargo	Sandra	Miracle	Flight Operations Manager	248-666-5910 (9630)	smiracle@iflgroup.com
Hawaiian Airlines	Sarah	Richardson	Category Manager - Properties	808-838-5531	Sarah.Richardson@hawaiianair.com
Horizon Air	Celley	Buchanan	General Manager	310-665-1450	celley.buchanan@alaskaair.com
Iberia Airlines of Spain	Carol	Guerrero	Accounting Department	305-267-7747 x3048	miakk@iberia.es; BMOYA@IBERIA.ES
IFL Group Inc	Sandra	Miracle	Flight Operations Manager	248-666-9713	smiracle@iflgroup.com
Japan Airlines	Frank	Fujii	Station Manager	310-646-5640	frank.fujii@jal.com
JetBlue Airlines	Michael	Graci	Manager Airport Affairs		Michael.graci@jetblue.com
Kalitta Air LLC	DC	Sanderlin	VP/GM	734-484-0088	psanderlin@kalittaair.com
KLM Royal Dutch Airlines	Lee	Wong	Station Manager	310-216-7279	lee.wong@klm.com
Korean Airlines	Min Young	Choi	Station Manager	310-417-5290	minychoi@koreanair.com
Lan Airlines, Lan Cargo S.A., Lan Peru SA	Jacqueline	LeFort	Station Manager	310-646-1954 x2	jackie.lefort@lan.com;
LACSA	Carlos	Olmedo	Station Manager	310-337-3103	carlos.olmedo@taca.com
Lufthansa German Airlines	Arthur	Molins	General Counsel	516-296-9234	Arthur.Molins@dlh.de
Malaysian Airlines	Zainu Rizam	Zawawi	Area Vice President/Customer	310-646-9376	zainul@malaysiaairlines.com
Mesa Airlines	Valerie	Hardy	Manager of Properties and	602-685-4082	valerie.hardy@mesa-air.com
Sun Country Airlines	John	Frederickson	VP, General Counsel	651-681-3900	john.frederickson@suncountry.com
National Airlines	Nancy	Hardy	Mgr. of Ground Operations	800-451-3174	nhardy@nationalairlines.aero
Nippon Cargo Airlines	Hiroshi	Ikeya	General Manager	310-342-2400	hiroshi.ikeya@nca.aero
North American Airlines, Inc.	Roy	Morello	Manager, Ground Operations	770-632-8161	rmorello@gssops.com; TSchwabe@gssops.com
OJSC Transaero Airlines	Kostadin	Botev	Regional Mgr, North America	718-751-3560	kbotev@transaero.ru
Philippine Airlines	Adrian	Ingles	Country Manager	415-217-3130	ingles77@aol.com
Qantas Airlines	Vijay	Sundaram	VP-Airports/The Americas	310-348-0702	vsundaram@qantas.com
Singapore Airlines Cargo	Michael	Wang	Manager SW USA	310-646-6200	Michael_wang@singaporeair.com.sg
Singapore Airlines Limited	Muhd	Mustapha	Station Manager	310-646-6203	muhd_mustapha@singaporeair.com.sg;
Skywest Airlines	Seth	Thompson	Financial Analyst	435-634-3426	seth.thompson@skywest.com
Air France	Ziya	Akbas	Station Manager	424-646-4670	ziakbas@airfrance.fr; jamalot@airfrance.fr
Southern Air Inc	Thomas	Killian	Director, Cargo Services	203-847-6000	tkillian@southernair.com

Company Name	First Name	Last Name	Title	Phone	Email
Southwest Airlines	Steve	Hubbell	Properties Manager	214-792-5169	steve.hubbell@wnco.com
Spirit Airlines Inc	Kathleen	Barrett	Manager, Corporate Real Estate	954-681-6887	kathleen.barrett@spirit.com;
Spirit Airlines Inc	Jake	Filene		954-447-8113	Jake.Filene@spiritair.com
SWISS	Erin K.	Sweeney	General Counsel- USA	516-296-9577	erin.sweeney@swiss.com;
TACA El Salvador	Carlos	Olmedo	Station Manager	310-337-3103	carlos.olmedo@taca.com
Xtra Airways	Lisa	Dunn	President	208-333-9872	Ldunn@xtraairways.com
Thai Airways International Ltd	Sutsveta	Svetasobhana	General Manager	310-640-0097 x703	laxaatg@thaiairwaysusa.com
ArkeFly	Hans	Vans De Velde	Director Operations	31-20-892-1312	planning@arkefly.nl;
Turkish Airlines Inc.	Cem	Ciraci	Station Manager	310-414-8145	cciraci@tklax.com
United / Continental Airlines (UA)	Jim	Hanselmann	General Manager	310-342-8100	Jim.Hanselmann@United.com
United Parcel Service, Co.	Trey	Hettinger	Airport Properties Manager	502-329-3992	hjhettinger@ups.com
US Airways	David J.	Anderson	Director, Properties	480-693-3630	david.anderson2@usairways.com
US Airways	Clint	Schlundt	Manager, GSE Support-Airport	480-693-2844; 480-619-7652	Clint.Schlundt@usairways.com
USA Jet Airlines	Amy	Swek	Managing Director of Air	734-547-7251; c:734-740-	aswek@usajet.aero
Virgin America Inc.	Jim	Smith	Manager, Corporate Real Estate	650-734-2133	jim.smith@virginamerica.com
Virgin Atlantic	Gary	Barnhart	Contract Services Manager	203-750-2191	gary.barnhart@fly.virgin.com
Virgin Australia International Airlines PTY	Leigh	Balderson	Airport Planning & Pricing	011 61 3295 5027	Leigh.Balderson@virginaustralia.com.au
Westjet	Mike	Ehrentraut	Operations Manager	403-539-7450	mehrentraut@westjet.com
World Airways Inc	Tom	Cross		770-632-8130	tcross@woa.com
World Airways Inc	Brian	Gillman	Sr. Vice President	770-632-8295	cwatson@glah.com
Yangtze River Express Airlines Co Ltd	Kevin	Lou	Cargo Services Manager	310-646-4230x6	kevin.lou@china-airlines.com; aaron@china-
AAAC Airlines					
Aerovias de Mexico SA de CV (Aeromexico)	Jorge F.	Silva		310-646-0338; 404-397-4531	jsilva@aeromexico.com
Hawaiian Airlines	Sarah	Richardson		808-835-3064; 808-351-6084	sarah.richardson@hawaiianair.com
Hawaiian Airlines	Lisa	Jones		310-417-0201; 351-729-7234	lisa.jones@hawaiianair.com
AIR CANADA	Josephine	Pietracupa		514-422-5144	josephine.pietracupa@aircanada.ca
AIR CANADA	Chantal	Longchamp		514/422-5563	chantal.longchamp@aircanada.ca
AIR CANADA	Sylvette	Chung Lim		514/422-4225	lee.chunglim@aircanada.ca
AIR CANADA	Mark	Fleetham		905/612-2137	Mark.Fleetham@aircanada.ca
AIR CANADA	Alioune	Sow	AirServ	310-646-3918	alioune.sow@aircanada
AIR FRANCE	Ziya	Akbas		424 646 4670; 310 500 6066	ziakbas@airfrance.fr
Air New Zealand	Sheila	O'Neil		1 310 665-3980; 1 529-5858	sheila.oneil@airnz.com
Air Pacific	Leonard	Sloper		310 568 8676 x231; 310 849	Len.Sloper@airpacific.com
Alaska Airlines	Scott	Kimball			Scott.Kimball@AlaskaAir.com
ALITALIA	Gaetano	Messina		718 751 1600; 718-709-7314;	messina.gaetano@alitalia.it
ALITALIA	Graziella	Cracchiolo		310-693-6303; 310-242-1669	CRACCHIOLO.GRAZIELLA@ALITALIA.IT
All Nippon Airways Co.. Ltd.	Richard	Ide	Station Manger	310-646-1490	r.ide@fly-ana.com
Allegiant Travel Company	Thayne	Klingler		702.589.8113; 702.430.3291	thayne.klingler@allegiantair.com
Allegiant Travel Company	Edward	Jacob		630.282.4730; 630.282.4730	ed.jacob@allegiantair.com
American Airlines	Steven R.	Holt		817-931-8798; 817-974-2483	steven.holt@aa.com
British Airways Plc	Ken	Deming	Mgr, Properties, Americas	212-716-0355; 646-541-0456	ken.deming@ba.com
China Airlines	SPENCER	LEE		310-215-5657; 310-923-3888	spencer.lee@china-airlines.com
China Eastern Airlines	Huaxin	Zhang		626 583-1511; 626 589-6988	hxzhang66@gmail.com
Delta Air Lines	Jim	Boucher		404 773 6922; 404 310 0089	jim.boucher@delta.com
EL AL Israel Airlines	Dan	Idy	Station Manager	310 646 2909; 310 560 5623	didy@elalusa.com
EVA Airways	Bernie	Lin		310-6469821; 310-7299266	bernielin@evaair.com
Federal Express	Teri	Kerichenko		901-434-9649; 901-604-7155	tmkerichenko@fedex.com
Frontier Airlines	Greg	Broemer		4142945157; 4147939607	greg.broemer@rjet.com
JetBlue Airways	Michael	Graci		347-572-4679; 347-572-4679	michael.graci@jetblue.com
KLM	Ziya	Akbas		424 646 4670; 310 500 6066	ziakbas@airfrance.fr
Korean Air	Jamie	Newsom		310 417 5252; 818 800 9836	jjchoo@koreanair.com
LAN	JACQUELINE	LE-FORT		(310)343-4853; (310)902-	jackie.lefort@lan.com
LAN	ANDREA	GLASER		(310)343-4853	andrea.glaser@lan.com
LAN	ALEKSANDRA	CUPRYS		(786)265-6088	aleksandra.cuprys@lan.com
Lufthansa German Airlines	Stefan	Lau		310 646 3949; 310 466 1937	stefan.lau@dlh.de

Company Name	First Name	Last Name	Title	Phone	Email
Qantas	Vijay	Sundaram		310-348-0702; 310-562-5127	vsundaram@qantas.com
Singapore Airlines	Muhd	Mustapha		310 646 6203; 310 562 2496	muhd_mustapha@singaporeair.com.sg
SkyWest Airlines	Steve	Dwiggins		435-634-3496	sdwiggins@skywest.com
Spirit Airlines	Kathleen	Barrett		954-447-8065; 954-681-6887	kathleen.barrett@spirit.com
Sun Country	Teddy	Curri		310-641-5137; 651-245-4605	Teddy.Curri@SunCountry.Com
Swiss International Air Lines Ltd.	Erin K.	Sweeney		(516) 296-9577; (516) 607-	erin.sweeney@swiss.com
United / Continental Airlines (UA)	Matt	Shelby		312-997-8514; 832-524-2502	matt.shelby@united.com
UPS	Trey	Hettinger		(502) 329-3992	hjhettinger@ups.com
US Airways, Inc.	David J. (DJ)	Anderson		(480) 693-3630; (480) 544-	david.anderson2@usairways.com
Virgin America	Jim	Smith		646-734-2133; 646-734-2133	jim.smith@virginamerica.com
Virgin Atlantic	Gary	Barnhart		203-750-2191; 203-919-3106	gary.barnhart@fly.virgin.com
WestJet	Mike	Ehrentraut		(403) 539-7450; 403-585-	mehrentraut@westjet.com
WestJet	Dave	Bolstad		(403) 539-7434	dbolstad@westjet.com
Cathay Pacific Airways	Carrie E.	Sullivan		310 417 0242; 310 721 7364	laxcas@cathaypacific.com
Aeroflot Russian Airlines	Alexey	Aleksandrov		310-281 5305 ext 107; 310-	aleksandrov@aerofot-lax.com
Aeroflot Russian Airlines	Irina	Poberejskaya		310-281 5305 ext 108	ipoberejskaya@aeroflot-lax.com
Thai Airways	Sutsveta	Svetasobhana		310-640-0097 ext 703	laxaatg@thaiairwaysusa.com
Thai Airways	Suravudhi	Kosoltrakul	Airport Service Manager	310-646-3095	laxkktg@thaiairwaysusa.com
TBITEC Membership Roster					
American Airlines	Jeff	Plant	Managing Director	310-646-4553	jeff.plant@aa.com
American Airlines	Andy	Garcia	Manager Operations	310-646-2582	andy.garcia@aa.com
Air Berlin PLC & Company	Borseen	Oushana	Matrix Aviation	310-337-2919; 310-993-7671	borseen@matrix-aviation.com
Air France	Ziya	Akbas	Station Manager	424-646-4671; 310-500-6066	ziakbas@airfrance.fr
British Airways	Kristine	Morley		310-845-2005	kristine.morley@ba.com
EVA Airways	Bernie	Lin	Station Manager	310-646-9898	bernielin@evaair.com
Eva Airways	Linda	Gann	Assistant of General Manager	310-646-9898	lindagann@evaair.com
China Airlines	Spencer	Lee	Station Manager	310-215-5657	spencer.lee@china-airlines.com
Cathay Pacific Airways Limited	Carrie	Sullivan	Airport Services Manager	310-417-0243	carrie_sullivan@cathaypacific.com
China Southern	Xiang be	Fang	Station Manager	310-410-1318; 310-593-3368	fang@csair.us
China Southern	Max	Zhang	Airport Assistant	310-410-1318	max@csair.us
Delta Airlines	Anthony	Klekas	Field Director	310-417-7373	tony.klekas@delta.com
Delta Airlines	David	Allend	Department Manager	310-417-7456	david.allen@delta.com
Emirates Airline	Paul	Daneil-Tuite	Airport Services Manager	310-645-9044; 310-570-0880	paul.tuite@emirates.com
Air Pacific	Len	Sloper	Region Manager Airports	310-849-8061	Len.Sloper@airpacific.com
Air Pacific	Niall	Mulcahy	Airport Manager LAX	310-628-7005	niall.mulcahy@airpacific.com
Iberia Airlines of Spain	Kristine	Morley		310-845-2005	kristine.morley@ba.com
Japan Airlines	Turner H.	Maynor	Vice President Airport Operations	310-606-6557	turner.maynor@jal.com
Japan Airlines	Frank	Fujii	Station Manager	310-646-5640	frank.fujii@jal.com
Korean Airlines	Jamie	Newsom	Senior Manager	310-417-5252	jjchoo@koreanair.com
LAN Airlines	Jacqueline	LeFort	Manager	310-646-1954 x2; 310-902-1306	jackie.lefort@lan.com
Lufthansa German Airlines	Stefan	Lau	Station Manager	310-646-3949; 310-466-1937	stefan.lau@dlh.de
Lacsa	Carlos	Olmedo	Station Manager	310-337-3103; 213-804-3271	carlos.olmedo@aviancataca.com
Swiss International Air Lines Ltd.	Robert	Bedrick	Station Manager	310-348-1302; 213-804-3855; 310-215-7283	robert.bedrick@swiss.com
El Al Israel Airlines	Dan	Idy	Station Manager	310-646-2909	didy@elalusa.com
Malavsian Airlines System	Zainul Rizam	Zawawi	Area Vice President North	310-646-0095	zainul@malaysiaairlines.com

Company Name	First Name	Last Name	Title	Phone	Email
China Eastern	Huaxin	Zhang	General Manager - USA	626-583-1511	hxzhang66@gmail.com
China Eastern	Annie	Lu	Assistant of General Manager	310-989-2880	annielu822@yahoo.com
All Nippon Airways Co.. Ltd.	Richard	Ide	Customer Service Manager	310-646-1490	r.ide@fly-ana.com
Air New Zealand	Sheila	O'Neil	Airport Manager The Americas	310-665-3980; 310-529-5858	sheila.oneil@airnz.com
Asiana Airlines	Ralph	Myers	General Manager	310-642-0301	rmyers@flyasiana.com
Philippine Airlines	Rex	Aldanese	Station Manager	310-646-2411	rex_aldanese@pal.com.ph
Qantas Airway Limited	Vijay	Sundaram	Vice President Airport Operations The Americas	310-348-0702; 310-562-5127	vsundaram@qantas.com.au
Singapore Airlines	Mohamed Rafi	Mar	VP Southwest Division	310-647-1922 x734	mohdrafi_mar@singaporeair.com
Singapore Airlines	Muhd	Mustapha	Station Manager - LAX	310-646-6203	muhd_mustapha@singaporeair.com
Aeroflot Russian Airlines	Alexey	Aleksandrov	General Manager	310-756-5579	aleksandrov@aerofot-lax.com
Taca International Airlines	Carlos	Olmedo	Station Manager	310-337-3103; 213-804-3271	carlos.olmedo@aviancataca.com
Thai Airways International LTD.	Suravudhi	Kosoltrakul	Airport Services Manager	310-646-3095	laxkktg@thaiairwaysusa.com
Turkish Airlines Inc.	Fatma	Yuceler	General Manager, Western USA	310-640-8999	fyuceler@tklax.com
Turkish Airlines Inc.	Cem	Ciraci	Station Manager	310-408-1366	cciraci@tklax.com
Air Tahiti Nui	Brian	Kay	Station Manager	310-662-1864; 310-989-7080	briank@airtahitinui-usa.com
United / Continental Airlines (UA)	Jim	Hanselmann	Managing Director - USA	310-342-8100	Jim.Hanselmann@United.com
Virgin Australia International Airlines PTY	Kirk	Demers	Airport Leader	310-417-7738	Kirk.demers@virginaustralia.com
Virgin Australia International Airlines PTY	Roy	Bricker	Service Delivery Manager	310-417-7733	roy.bricker@virginaustralia.com
Crew Transport					
CPS	Ken	Suyama	Owner	310-787-9324	cps@kotobukiyausa.com
Pacific Aviation	Leo	Vallone	Flight Operations Manager	310-646-1167	lvallone@pacificaviation.com
Pacific Aviation	Robert	Wall	Transportation Manager	310-646-1167	rwall@pacificaviation.com
Pacific Aviation	Victor	Mena		310-322-6290	vmena@pacificaviation.com
Catering					
Flying Foods	Damon	Dalgleish	General Manager	310-670-3944 (LAX); 310-646 0164 (LAP); 310-534-3888 (Harbor City)	ddalgleish@flyingfood.com
LSG Sky Chefs	Fabio M.	DelCore	Account Manager	424-789-8345	fabio.delcore@lsgskychefs.com
LSG Sky Chefs	Dale	Reighter	Area General Manager	424-789-8350; 310-420-1668	Dale.Reighter@lsgskychefs.com
Hacor Inc.	Coby	Gonzalez	Ramp/Safety Manager	310-645-9011	coby@hacorinflight.com
Hacor Inc.	Sam	Curameng	Operation Director	310-645-9011 x2631	samcurameng@hacorinflight.com
Hacor Inc.	Cedric	Kim	General Manager	310-645-9011	cedric@hacorinflight.com
Gate Gourmet	Chauncey	Davis	General Manger	310-670-1749	cdavis@gategourmet.com
Gate Gourmet	Rick	Deshon	Regional Managing Director	310-670-1749	rdeshon@gategourmet.com
Gate Gourmet	Roy	Ostrovitz		310-665-8957	rostrovitz@gategourmet.com
Flight Planning & Passenger/Baggage Service					
Hallmark Aviation Services	Sal	Gonzalez			salvadorgonzalez@hallmark-aviation.com
Hallmark Aviation Services	Carmen	Carson		310-215-0701	carmencarson@hallmark-aviation.com
Fueling/Maintenance Services					
PLH Aviation	Michael	Knezevich	General Manager, LAWTFC Fuel Operation	310-417-0118	Michael.Knezevich@asig.com; mknezevich@plhaviation.com
F&E Aircraft Maint DBA Global Maintenance Technologies	Mike	Luster	GMT Manager	310-818-6401	mluster@feaircraft.com

Company Name	First Name	Last Name	Title	Phone	Email
F&E Aircraft Maint DBA Global Maintenance Technologies	Constantine	Burjakowsky	Station Manager	310-916-8241	cburjakowsky@gmt.aero
World Service West (Aircraft Cleaning Services)		Stalter	Manager	310-538-7000	cstalter@worldservicewest.com
World Service West (Aircraft Cleaning Services)	Joe	Mrozewski		281-999-4191	
Other LAX Tenants					
American Eagle	Ronald	Hofrichter		972-425-1580	ronald.hofrichter@aa.com
Miami Air International	Steve	Andreocci		305-876-3635	
Miami Air International	Randy	Chrismon		310-617-5041	rocketman75@aol.com
Prologis/AMB Property Corporation	Martin	Coyne	SVP & Regional Manager	415-733-9539; 415-394-9000	mcoyne@amb.com; rantrobius@amb.com; sdiaz@amb.com; ksnyder@amb.com;
Calop Aeroground Services	YY	Park		310-641-6996	yypark@calopaeroground.com
CalPortland Company	Nadine	Heinrich		626-852-6208	nheinrich@calportland.com
Chevron USA Inc	Steven R.	Wahrenbrock		714-228-1507	steven.wahrenbrock@chevron-pipeline.com;
ConocoPhillips Company	Gerry	Tintle	Consultant	562-290-1518; 562-906-7557	Gerry.Tintle@conocophillips.com; Dennis.Doherty@conocophillips.com; Stanley.V.Brown@conocophillips.com;
Crimson California Pipeline LP	April	Harvey		562-285-4112; 562-285-4100	Amorales@crimsonpl.com; lwalexander@crimsonpl.com;
Destination Shuttle Services LLC	Brian	Lott		310-338-9466	blott@dss-lax.com
DTG Operations Inc	Tammy	Braham		918-669-2471; 918-660-7700	tammy.braham@dtag.com
ExxonMobil Oil Corporation	Donald	Peloquin		703-849-4053	donald.j.peloquin@exxonmobil.com
Raytheon Company	Chanea	Banks		310-647-2498	cmbanks@raytheon.com
Rock-It-Cargo USA	David C.	Bernstein	Chief Executive Officer	800-973-1529	beverlya@rockitcargo.com; nancya@rockitcargo.com; jamela@rockitcargo.com; dcb@rockitcargo.com; jbrandow@rockitcargo.com; edb@rockitcargo.com; soniac@rockitcargo.com; annec@rockitcargo.com; bayani@rockitcargo.com; rond@rockitcargo.com; andyd@rockitcargo.com; marianae@rockitcargo.com; bridgetf@rockitcargo.com; gusg@rockitcargo.com;
StandardAero Business Aviation Services LLC	Ron	Larson	Manager	818-781-1170; 818-851-8962	ron.larson@standardaero.com; Patrick.Conroy@StandardAero.com
Production Storage Group Inc	Manuel	Parodi		818-512-8472; 310-581-8079	Prodstoragegroup@aol.com
Shell California Pipeline Company LLC	Michael	Elmore		310-816-2208	michael.elmore@shell.com
SIA Engineering (USA) Inc	Freddy Cheng	Hian Tan		310-227-6132; 310-665-9015	freddy_tan@siaecusa.com
Western States Maintenance	Cathy	Landers		310-646-2956	wsme@pacbell.net

Attachment *I*

2013 LAX GSE Inventory Survey - Consolidated Results

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
AERIAL PLATFORM	GROVE	1991	ELEC		No		Terminal 5	GSE Shop	
AERIAL PLATFORM	JLG	2001	ELEC		No		Terminal 5	GSE Shop	
AERIAL PLATFORM	SKY JACK	2010	ELEC		No		Terminal 5	GSE Shop	
AERIAL PLATFORM	SKY JACK	2010	ELEC		No		Terminal 5	GSE Shop	
Air Conditioner	TLD	2008	diesel		No				
Air Conditioner	JBT aero tec	2011	diesel		No		remote pad	CAS maint area	used on the remote pad for all RON aircraft
Air Conditioner	CUMMINS	2008	diesel	135	No				
Air Conditioner	Cummins	2008	diesel	135					
Air Conditioner	Cummins	1996	diesel	260					
Air Conditioner	Deutz	2005	diesel	363					
AIR CONDITIONING	TLD AMERICA	2008	DIESEL	319	No		Terminal 5	GSE Shop	
AIR CONDITIONING	TRILECTRON	1998	DIESEL		No		Terminal 5	GSE Shop	
AIR CONDITIONING	TRILECTRON	1998	DIESEL		No		Terminal 5	GSE Shop	
AIR CONDITIONING	TRILECTRON	1998	DIESEL		No		Terminal 5	GSE Shop	
AIR START	DEVTEC	1997	DIESEL		No		Terminal 5	GSE Shop	
AIR START	TLD AMERICA	2005	DIESEL		No		Terminal 5	GSE Shop	
AIR START	DEVTEC	1997	DIESEL		No		Terminal 5	GSE Shop	
AIR START	TLD AMERICA	2010	DIESEL		No		Terminal 5	GSE Shop	
Air Start	Cummins, QSL 8.9	2009	diesel	190	No		Terminal 1	Terminal 1	
AIR START	TRILECTRON	2000	DIESEL	550	No		Terminal 1	Same	
AIR START	ARROW TANK	1986	DIESEL	200	No		ICC 1-10	AEROUNION YARD	
Air Start - ICE	Stewart & Stevenson	2000	diesel	330	No		Gates 40 thru 49	Gates 40 thru 49	
Air Start - ICE	Stewart & Stevenson	2000	diesel	330	No		Gates 40 thru 49	Gates 40 thru 49	
Air Start - ICE	Other	1989	Diesel	460	No		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Air Start - ICE	Tug S&S	1999	Diesel	710	No		DHL Ramp / HG1	DHL Ramp / HG1	
Air Start - ICE	TRLCT	1997	Diesel	710	No				
Air Start - ICE	TRLCT	1999	Diesel	710	No				
Air Start - ICE	TRLCT	1997	Diesel	710	No				
Air Start - ICE	TRLCT	1997	Diesel	710	No				
Air Start - ICE	Detroit	2006	Diesel	500			Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	
Air Start - ICE	TLD	2004	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Air Start - ICE	DETROIT	1994	diesel	390	No				
Air Start - ICE	DETROIT	2008	diesel	665	No				
Air Start - ICE	Detroit Diesel	2006	diesel	630					
Air Start - ICE	Detroit Diesel	2006	diesel	665					
Air Start - ICE	Detroit Diesel	2000	diesel	500					
Air Start - ICE	Detroit Diesel	1999	diesel	585					
Air Start - ICE	Detroit Diesel	2000	diesel	500					
Air Start - ICE	Stewart-Stevenson	1997	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	
Air Start - Turbine	Garrett	1961	diesel	352	No		Hangar	Hangar	
Air Start - Turbine	Garrett	1962	diesel	352	No		Hangar	Hangar	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Air Start - Turbine	Garrett	1976	diesel	352	No		Hangar	Hangar	
Air Start - Turbine	SSTUG	1999	diesel		No		Terminal 2	Terminal 2	
Air Start - Turbine	SSTUG	1997	diesel		No		Terminal 2	Terminal 2	
Air Start - Turbine	TUG	2004	diesel	200	No		Terminal 7, 8 and at the remote box.	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Air start units generally are used less than 80 hours per YEAR.
Air Start - Turbine	SkyWest	2008	diesel	240	No		Terminal 7, 8 and at the remote box.	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Air start units generally are used less than 80 hours per YEAR.
AIR START-CC	FORD	2000	DIESEL	210	No		Terminal 1	Same	
AIR START-CONTINUOUS	STEWART + STEVENSON	1999	diesel		No		44		Horsepower ratings are not recorded in or system
AIRCRAFT TOW TRACTOR	LEKTRO, INC	2007	ELEC		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	LEKTRO, INC	2007	ELEC		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1969	DIESEL	165	No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1975	DIESEL	165	No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1980	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1964	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1966	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1975	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1977	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1979	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1965	DIESEL	165	No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1981	DIESEL	165	No		Terminal 5	GSE Shop	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
AIRCRAFT TOW TRACTOR	Stewart & Stevenson	1987	DIESEL	152	No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	Stewart & Stevenson	1990	DIESEL	300	No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	Stewart & Stevenson	1995	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	TUG TECHNOLOGIES	1996	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1978	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	HOUGH	1969	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	STEWART & STEVENSON	1986	DIESEL	152	No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	FMC	1995	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR		2000	DIESEL		No		Terminal 5	GSE Shop	
AIRCRAFT TOW TRACTOR	TUG TECHNOLOGIES	2008	DIESEL	268	No		Terminal 5	GSE Shop	
Aircraft Tractor	Stewart-Stevenson	1996	diesel	100	No		ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	heavy tug
Aircraft Tractor	Hough	1969	diesel	260	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Hough	1972	diesel	343	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Hough	1972	diesel	343	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Stewart & Stevenson	1981	diesel	170	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Stewart & Stevenson	1982	diesel	256	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Stewart & Stevenson	1984	diesel	256	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Douglas	1999	diesel	110	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Douglas	1999	diesel	110	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Tracma	1999	diesel	280	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Stewart & Stevenson	1999	diesel	168	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Stewart & Stevenson	1999	diesel	168	No		Gates 40 thru 49	Gates 40 thru 49	
Aircraft Tractor	Stewart & Stevenson	1999	diesel	168	No		Hangar	Hangar	
Aircraft Tractor	Stewart & Stevenson	2000	diesel	168	No		Hangar	Hangar	
Aircraft Tractor	Stewart & Stevenson	2000	diesel	168	No		Hangar	Hangar	
Aircraft Tractor	Tracma	2000	diesel	280	No		Hangar	Hangar	
Aircraft Tractor	Tracma	2001	diesel	265	No		Hangar	Hangar	
Aircraft Tractor	Goldhofer	2005	diesel	400	No		Hangar	Hangar	
Aircraft Tractor	Goldhofer	2005	diesel	400	No		Hangar	Hangar	
Aircraft Tractor	Goldhofer	2005	diesel	400	No		Hangar	Hangar	
Aircraft Tractor	Hough	1972	diesel	343	No		Hangar	Hangar	
Aircraft Tractor	Hough	1973	diesel	343	No		Hangar	Hangar	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Aircraft Tractor	Other	1984	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Aircraft Tractor	Other	1985	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Aircraft Tractor	Perkins &Engines	1985	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Aircraft Tractor	Other	1988	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Aircraft Tractor	Other	2002	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Aircraft Tractor	Other	2002	Diesel	25	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Aircraft Tractor	FMCXX	1997	Diesel	265	No				
Aircraft Tractor	FMCXX	1997	Diesel	265	No				
Aircraft Tractor	FMCXX	2002	Diesel	265	No				
Aircraft Tractor	FMCXX	2008	Diesel	190	No				
Aircraft Tractor	FMCXX	2008	Diesel	190	No				
Aircraft Tractor	FMCXX	1999	Diesel	265	No				
Aircraft Tractor	STWST	1996	Diesel	265	No				
Aircraft Tractor	TLDXX	2005	Diesel	265	No				
Aircraft Tractor	TLDXX	2004	Diesel	265	No				
Aircraft Tractor	Deutz	2006	Diesel	88			Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	
Aircraft Tractor	Deutz	2006	Diesel	88			Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	
Aircraft Tractor	stewart & stevens	1982	diesel		No		TBIT,ICC	iCC, MAINT YARD	
Aircraft Tractor	hugh paymover	1970	diesel		no		n/a	gse yard	none perform,ing asset used for parts t800
Aircraft Tractor	hugh paymover		diesel		No		TBIT,ICC	ICC, MAINT YARD	
Aircraft Tractor	stewart & stevens	1985	diesel		No		TBIT,ICC	MAINT yard	
Aircraft Tractor	hugh paymover		diesel		No		TBIT,ICC	ICC, MAINT YARD	
Aircraft Tractor	DETROIT	1982	diesel	85	No		TERMINAL 6		
Aircraft Tractor	Deutz	1999	diesel	87	No		TERMINAL 6		
Aircraft Tractor	Deutz	2001	diesel	87	No		TERMINAL 6		
Aircraft Tractor	DETROIT	1976	diesel	228	No		KOREA WH		
Aircraft Tractor	DETROIT	1996	diesel	450	No		ICC		
Aircraft Tractor	Deutz	2001	diesel	87	No		TERMINAL 6		
Aircraft Tractor	Deutz	2001	diesel	262	No		ICC		
Aircraft Tractor	DETROIT	1982	diesel	85	No		TERMINAL 6		
Aircraft Tractor	DETROIT	1986	diesel	228	No		KOREA WH		
Aircraft Tractor	Deutz	1994	diesel	300	No		TBIT		
Aircraft Tractor	Deutz	2004	diesel	299	No		TBIT		
Aircraft Tractor	Deutz	2004	diesel	299	No		TBIT		

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Aircraft Tractor	Deutz	2007	diesel	100	No		TERMINAL 3 BAGRM		
Aircraft Tractor	Deutz	2007	diesel	100	No		TERMINAL 3 BAGRM		
Aircraft Tractor	Deutz	2007	diesel	100	No		TERMINAL 3 BAGRM		
Aircraft Tractor	Lektro	2007	electric		No		TERMINAL 6		
Aircraft Tractor	Lektro	2007	electric		No		TERMINAL 6		
Aircraft Tractor	Deutz	2008	diesel	268	No		TBIT		
Aircraft Tractor	Deutz	2008	diesel	268	No		ICC		
Aircraft Tractor	Deutz	2007	diesel	100	No		TERMINAL 3 BAGRM		
Aircraft Tractor	Deutz	2009	diesel	268	No		TBIT		
Aircraft Tractor	Deutz	2011	diesel	89	No		TERMINAL 6		
Aircraft Tractor	CUMMINS	2011	diesel	290	No		TBIT		
Aircraft Tractor	MERCEDEZ	2012	diesel	563	No		TBIT		
Aircraft Tractor	MERCEDEZ	2012	diesel	563	No		TBIT		
Aircraft Tractor	TLD	2006	diesel		No		TBIT	Storage by 96th St	
Aircraft Tractor	KRAU	1998	diesel		No		TBIT	Storage by 96th St	
Aircraft Tractor	SSTUG	1997	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	FMC	1999	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	FMC	1999	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	TUGTECH	2005	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	SSTUG	1997	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	SSTUG	1998	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	FMC	1999	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	SSTUG	2000	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	TLD	2004	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	TUGTECH	2008	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	TUGTECH	2008	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	TLD	2007	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	TLD	2008	diesel		No		Terminal 2	Storage by 96th St	
Aircraft Tractor	Lektro	2002	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2008	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Aircraft Tractor	Lektro	2003	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2003	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2000	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2005	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2006	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2003	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2005	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Aircraft Tractor	Lektro	2000	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2002	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2011	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Lektro	2011	electric	25	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our pushback tugs usually average between 50 and 100 hours per YEAR.
Aircraft Tractor	Tug	1995	Diesel		No		South Pads	NCA Cargo Building	
Aircraft Tractor	Stewart Stevens - tug	1999	diesel	190					
Aircraft Tractor	HOUGH	1988	electric	170					
Aircraft Tractor	TUG	2007	diesel	100					
Aircraft Tractor	TUG	1979	diesel	131					
Aircraft Tractor	TUG	2007	diesel	190					
Aircraft Tractor	TUG	2003	diesel	88					
Aircraft Tractor	TUG	2000	diesel	255					
Aircraft Tractor	STWSV	1983	electric	100					
Aircraft Tractor	STWSV	1984	electric	100					
Aircraft Tractor	STWSV	1984	electric	100					
Aircraft Tractor	STWSV	1986	electric	100					
Aircraft Tractor	STWSV	1983	electric	100					
Aircraft Tractor	STWSV	1989	electric	100					
Aircraft Tractor	STWSV	1996	electric	100					
Aircraft Tractor	STWSV	1987	electric	100					
Aircraft Tractor	STWSV	1982	electric	100					
Aircraft Tractor	STWSV	1983	electric	100					
Aircraft Tractor	STWSV	1986	electric	205					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Aircraft Tractor	STWSV	1988	diesel	205					
Aircraft Tractor	STWSV	1986	electric	100					
Aircraft Tractor	STWSV	1996	electric	255					
Aircraft Tractor	STWSV	1990	diesel	230					
Aircraft Tractor	STWSV	1991	diesel	300					
Aircraft Tractor	STWSV	1994	diesel	375					
Aircraft Tractor	STWSV	2006	diesel	265					
Aircraft Tractor	STWSV	2006	diesel	210					
Aircraft Tractor	STWSV	1997	diesel	450					
Aircraft Tractor	DOUGL	2012	diesel	255					
Aircraft Tractor	STWSV	1990	electric						
Aircraft Tractor	STWSV	1988	electric						
Aircraft Tractor	STWSV	1990	diesel						
Aircraft Tractor	DOUGL	2012	diesel						
Aircraft Tractor	DOUGL	2012	diesel						
AUTOMOBILE	FORD	1996	GAS		No		Terminal 5	GSE Shop	
AUTOMOBILE	FORD TRANSIT CONN	2010	GAS						CAR403
AUTOMOBILE	FORD TRANSIT CONN	2010	GAS						CAR403
AUTOMOBILE	FORD EXPLORER	2013	GAS						CAR404 (S.GOMEZ)
AUTOMOBILE	FORD CROWN VIC	1998	GAS						CAR006
AUTOMOBILE	FORD CROWN VIC	2001	GAS						CAR014
AUTOMOBILE	FORD ESCAPE	2009	GAS						CAR402
BAG TRACTOR	CHARLATTE	1996	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	1996	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	1996	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	1998	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	1999	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	1996	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	TAYLOR-DUNN	1977	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR	CLUB CAR	1978	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR	E-Z-GO	1993	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR	E-Z-GO	1990	electric		No		44		Horsepower ratings are not recorded in or system

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BAG TRACTOR	CHARLATTE	2000	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2000	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2002	electric		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR	TAYLOR-DUNN	2002	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR	TAYLOR-DUNN	2002	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2000	electric		No		Terminal 1	Same	
BAG TRACTOR	CHARLATTE	2001	electric		No		Terminal 1	Same	
BAG TRACTOR	TUG	1999	GAS	107	No		Terminal 1	Same	
BAG TRACTOR	TUG	1999	GAS	107	No		Terminal 1	Same	
BAG TRACTOR	TUG	1999	GAS	107	No		Terminal 1	Same	
BAG TRACTOR	WOLLARD	1992	GAS	107	No		Terminal 1	Same	
BAG TRACTOR	EAGLE/FORD	1989	Propane	107	No		Terminal 1	Same	
BAG TRACTOR	EAGLE/FORD	1987	Propane	107	No		Terminal 1	Same	
BAG TRACTOR (MTX)	WESTINGHOUSE ELECTRIC CO	1973	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR (MTX)	E-Z-GO	1993	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR (MTX)	TAYLOR-DUNN	2002	electric		No		44		Horsepower ratings are not recorded in or system
BAG TRACTOR-HIGH SPEED	TUG INC	2008	gasoline		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR-HIGH SPEED	TUG INC	1995	LPG		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
BAG TRACTOR-HIGH SPEED SWEPCO 6/28/12	TUG INC	2008	gasoline		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2008	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2011	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2011	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2011	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2011	electric		No		Terminal 1	Terminal 1	
Bag Tug	GE	2011	electric		No		Terminal 1	Terminal 1	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Bag Tug Hybrid Electric	Tug	2004	Electric		NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2002	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2002	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2004	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	Diesel	42	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	Diesel	42	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	Diesel	42	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BAGGAGE - TUG	AGCO	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BAGGAGE - TUG	Other	2007	LPG	42	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1987	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1997	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1998	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1998	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1998	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1998	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
Baggage Tractor	Charlatte	1999	electric	25	No		Gates 40 thru 49	Gates 40 thru 49	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	1997	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	1997	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	1997	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	1997	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	2005	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	2005	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	CHARLATTE	2005	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1996	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2010	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2011	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2011	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2011	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2011	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2011	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	2011	ELEC		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1998	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2000	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2001	DIESEL		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1991	GAS		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	1999	GAS		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1993	GAS		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	S & S TUG	2002	GAS		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1992	GAS		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	GAS		No		Terminal 5	GSE Shop	
BAGGAGE TRACTOR	TUG TECHNOLOGIES	1995	GAS		No		Terminal 5	GSE Shop	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	1994	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	1999	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug S&S	2001	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug S&S	2001	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug S&S	2001	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2004	Gasoline		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2002	Gasoline		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	Tug	2004	Gasoline		No		DHL Ramp / HG1	DHL Ramp / HG1	
Baggage Tractor	TUGMN	2011	Gasoline	65	No				
Baggage Tractor	TUGMN	2011	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2004	Gasoline	65	No				
Baggage Tractor	TUGMN	2006	Gasoline	65	No				
Baggage Tractor	TUGMN	2003	Electric	40	No				
Baggage Tractor	TUGMN	2003	Electric	40	No				
Baggage Tractor	TUGMN	2003	Electric	40	No				
Baggage Tractor	TUGMN	2003	Electric	40	No				

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2008	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2009	Gasoline	65	No				
Baggage Tractor	TIGER	2010	Gasoline	65	No				
Baggage Tractor	Harland	1999	gasoline	120	No		T64 thru T67	T6	
Baggage Tractor	Ford	2006	LPG	90	Yes		Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Light Duty Truck
Baggage Tractor	Ford	2006	LPG	90	Yes		Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Light Duty Truck
Baggage Tractor	Ford	2006	LPG	90	Yes		Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Light Duty Truck
Baggage Tractor	Ford	2006	LPG	90	Yes		Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Light Duty Truck
Baggage Tractor	TUG	1992	lpg		No				

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	TUG	1982	gasoline		No				
Baggage Tractor	TUG	1985	gasoline		No				
Baggage Tractor	TUG	2000	gasoline		No				
Baggage Tractor	TUG	1996	gasoline		No				
Baggage Tractor	TUG	1996	gasoline		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUG	1998	gasoline		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUG	1996	lpg		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUG	1999	gasoline		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUG	1979	lpg		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUG	1998	lpg		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUg	1986	lpg		No		TBIT,ICC	ICC, MAINT YARD	
Baggage Tractor	TUG	1982	gasoline		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	1996	lpg		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	1985	gasoline		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	1995	lpg		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	2000	gasoline		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	1999	gasoline		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	1987	lpg		No		TBIT,ICC	iCC, MAINT YARD	
Baggage Tractor	TUG	1988	gasoline		NO		RAMP	W/H	
Baggage Tractor	TUG	2007	gasoline		NO		RAMP	W/H	
Baggage Tractor	FORD	1997	LPG	95	No		QANTAS WH	QANTAS WH	
Baggage Tractor	FORD	1997	LPG	95	No		ICC		
Baggage Tractor	FORD	1997	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	1997	LPG	95	No		ICC		
Baggage Tractor	FORD	1997	LPG	95	No		TBIT		
Baggage Tractor	FORD	1997	LPG	95	No		TBIT		
Baggage Tractor	FORD	1995	LPG	95	No		TBIT		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	1996	LPG	95	No		TBIT		
Baggage Tractor	FORD	1995	LPG	95	No		TBIT		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	1998	LPG	95	No		TBIT		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	1994	LPG	95	No		TBIT		
Baggage Tractor	FORD	1998	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	1998	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	1998	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	1998	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2011	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	1998	LPG	95	No		TBIT		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	FORD	1997	LPG	95	No		TBIT		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	1997	LPG	95	No		TBIT		
Baggage Tractor	FORD	1995	LPG	95	No		TBIT		
Baggage Tractor	FORD	1997	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	1998	LPG	95	No		TBIT		
Baggage Tractor	FORD	2001	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2001	LPG	95	No		TBIT		
Baggage Tractor	FORD	2001	LPG	95	No		TBIT		
Baggage Tractor	FORD	2001	LPG	95	No		ICC		
Baggage Tractor	FORD	2011	LPG	95	No		TBIT		
Baggage Tractor	FORD	1984	LPG	95	No		TBIT		
Baggage Tractor	FORD	1993	LPG	95	No		TBIT		
Baggage Tractor	FORD	2002	gasoline	95	No		ICC		
Baggage Tractor	FORD	2002	gasoline	95	No		ICC		
Baggage Tractor	FORD	2006	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2006	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2006	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2006	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	1998	LPG	95	No		ICC		
Baggage Tractor	FORD	2001	LPG	95	No		ICC		
Baggage Tractor	FORD	1994	LPG	95	No		ICC		
Baggage Tractor	FORD	2004	gasoline	95	No		ICC		
Baggage Tractor	FORD	2004	gasoline	95	No		ICC		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2007	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2007	LPG	95	No		TERMINAL 6		
Baggage Tractor	FORD	2008	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2008	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2008	electric		No		TERMINAL 3		
Baggage Tractor	Deutz	2008	diesel	77	No		ICC		
Baggage Tractor	Deutz	2008	diesel	77	No		ICC		
Baggage Tractor	Deutz	2008	diesel	77	No		ICC		
Baggage Tractor	FORD	2008	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2008	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2008	electric		No		TERMINAL 3		

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	FORD	2009	LPG	95	No		ICC		
Baggage Tractor	FORD	2009	LPG	95	No		ICC		
Baggage Tractor	FORD	2009	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2009	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2009	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2009	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2009	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2010	LPG	95	No		ICC		
Baggage Tractor	FORD	2010	LPG	95	No		ICC		
Baggage Tractor	FORD	2011	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2011	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2011	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2011	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2011	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2011	electric		No		TERMINAL 3		
Baggage Tractor	FORD	2007	LPG	95	No		LAX249	LAX249	
Baggage Tractor	FORD	1995	LPG	95	No		TERMINAL 3 BAGRM		
Baggage Tractor	FORD	1995	LPG	95	No		TERMINAL 3 BAGRM		
Baggage Tractor	TUGTECH	2008	Propane				TBIT	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				TBIT	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				TBIT	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				TBIT	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				TBIT	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				TBIT	Storage by 96th St	
Baggage Tractor	SSTUG	2000	Propane				TBIT	Storage by 96th St	
Baggage Tractor	SSTUG	2000	Propane				TBIT	Storage by 96th St	
Baggage Tractor	SSTUG	1998	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	1999	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2005	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2005	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2005	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2005	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2005	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2005	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2004	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane				Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2008	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2009	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2009	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2009	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2010	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2010	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	TUGTECH	2010	Propane		No		Terminal 2	Storage by 96th St	
Baggage Tractor	SSTUG	2004	Propane		No		ALASKA CARGO WAREHOUSE	ALASKA CARGO WAREHOUSE	
Baggage Tractor	Charlatte	2006	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2006	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2006	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	Charlatte	2006	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2006	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2007	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Tiger	2000	diesel	85	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. This tug gets little use and averages about 70 hours per YEAR.
Baggage Tractor	Charlatte	2006	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2010	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2010	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	Charlatte	2010	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2010	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2011	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2011	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2011	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2011	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Charlatte	2011	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	Charlatte	2011	electric	40	No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop. Our baggage tractor fleet usually average just under 1000 hours per YEAR.
Baggage Tractor	Tug	2012	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor	Tug	2012	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor	Tug	2012	Gasoline		No		ICC	Lufthansa Cargo	
Baggage Tractor	Tug	2012	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor	Tug	2012	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor	United Tractor	1978	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor	Tug	2012	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor	United Tractor	1978	Gasoline		No		South Pads	NCA Cargo Building	
Baggage Tractor		2003	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2006	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor		2008	electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	CHARL	2008	Electric	93					
Baggage Tractor	NVSTR	2000	diesel						
Baggage Tractor	TUG	2011	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Baggage Tractor	TUG	2011	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Baggage Tractor	TUG	2011	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Baggage Tractor	TUG	2011	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Baggage Tractor	TUG	2001	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Baggage Tractor	TUG	2012	gasoline	168	No		5600 W. Century Blvd	5600 W. Century Blvd	
Baggage Tractor	TUG	2012	gasoline	168	No		5600 W. Century Blvd	5600 W. Century Blvd	
Baggage Tractor	TUG	2012	gasoline	168	No		5600 W. Century Blvd	5600 W. Century Blvd	
BELT LOADER	Other	2006	Diesel	44	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BELT LOADER	TUG	1989	DIESEL	180	NO		ICC 1-10	AEROUNION YARD	
BELT LOADER	TUG	1990	DIESEL	180	NO		ICC 1-10	AEROUNION YARD	
Belt Loader	Charlatte	1996	electric	95	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1998	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1998	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1998	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1998	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1998	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	2000	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Charlatte	1999	electric	16	No		Gates 40 thru 49	Gates 40 thru 49	
Belt Loader	Other	1988	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1988	LPG	49	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1988	LPG	49	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1988	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1988	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1988	LPG	49	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1992	diesel	49	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1996	LPG	49	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	1996	LPG	49	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	AGCO	2002	LPG	86	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	2006	Diesel	44	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	AGCO	2006	Diesel	44	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Belt Loader	Other	2006	Diesel	44	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
BELT LOADER	TUG TECHNOLOGIES	2005	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2005	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2006	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2006	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2006	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2000	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2000	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2006	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2006	ELEC		No		Terminal 5	GSE Shop	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BELT LOADER	TUG TECHNOLOGIES	2006	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1997	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2002	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	S & S TUG	2001	ELEC		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	1997	DIESEL	60	No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2001	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2001	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2001	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	WOLLARD	2000	DIESEL		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	2008	GAS		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	1997	GAS		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	1991	GAS		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	1997	GAS		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	1997	GAS		No		Terminal 5	GSE Shop	
BELT LOADER	TUG TECHNOLOGIES	1997	GAS		No		Terminal 5	GSE Shop	
BELT LOADER	S & S TUG	1999	GAS		No		Terminal 5	GSE Shop	
Belt Loader	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Belt Loader	Tug	2009	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Belt Loader	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Belt Loader	Tug S&S	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Belt Loader	Tug	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	TUGMN	2003	Electric	35	No				
Belt Loader	Tug Tech	2004	Elec	20			Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	
Belt Loader	Ford	2006	LPG	90	Yes		Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Light Duty Truck

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Belt Loader	Ford	2006	LPG	90	Yes		Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Light Duty Truck
Belt Loader	TUG	1987	lpg		NO				
Belt Loader	TUG	1984	lpg		No				
Belt Loader	TUG	1984	lpg		NO				
Belt Loader	TUG	1997	lpg		NO				
Belt Loader	TUG	1987	lpg		No				
Belt Loader	TLD	1990	diesel		No		RAMP	RAMP	
Belt Loader	TLD	2003	gasoline		No		RAMP	RAMP	
BELT LOADER	FORD	2003	gasoline	95	No		TBIT		
BELT LOADER	FORD	1997	LPG	95	No		TBIT		
BELT LOADER	FORD	1987	gasoline	95	No		TBIT		
BELT LOADER	FORD	1997	LPG	95	No		TBIT		
BELT LOADER	FORD	2001	gasoline	95	No		ICC		
BELT LOADER	FORD	2001	diesel	77	No		TBIT		
BELT LOADER	FORD	2001	diesel	77	No		ICC		
BELT LOADER	FORD	2000	gasoline	95	No		TBIT		
BELT LOADER	FORD	2006	LPG	95	No		ICC		
BELT LOADER	FORD	2006	LPG	95	No		ICC		
BELT LOADER	FORD	1987	gasoline	95	No		TBIT		
BELT LOADER	FORD	2007	diesel	77	No		TBIT		
BELT LOADER	FORD	2007	diesel	77	No		TBIT		
BELT LOADER	FORD	1989	gasoline	95	No		TBIT		
BELT LOADER	FORD	1990	gasoline	95	No		TBIT		
Belt Loader	TUGTECH		Propane		No		TBIT	Storage by 96th St	
Belt Loader	TUGTECH	2005	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2005	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2005	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2005	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2005	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2008	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH		Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2009	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2009	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2009	Propane		No		Terminal 2	Terminal 2	
Belt Loader	TUGTECH	2009	Propane		No		Terminal 2	Terminal 2	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Belt Loader	TUG	2003	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2003	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2004	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2003	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2004	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2004	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2003	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2004	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2004	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2004	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	TUG	2007	electric	25	No		Terminal 7 and 8, all gates.	Terminal 7 and 8, all gates.	All service performed at Continental Hangar, SkyWest GSE shop.
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2007	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2008	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2008	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2009	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2010	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2010	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Belt Loader	GE	2010	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	1994	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2009	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2009	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2010	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2010	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2011	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	1994	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2012	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2011	electric		No		Terminal 1	Terminal 1	
Belt Loader	GE	2011	electric		No		Terminal 1	Terminal 1	
BELT LOADER	TUG INC 660	1999	GAS						CBL151
BELT LOADER	TUG 660-1	2000	GAS						CBL152
BELT LOADER	TUG 660-1	2000	GAS						CBL155
BELT LOADER	TUG 660-1	2000	GAS						CBL155
BELT LOADER	TUG 660-1	2000	GAS						CBL156
BELT LOADER	TUG 660-1	2000	GAS						CBL156
BELT LOADER	TUG 660-1	2000	GAS						CBL153
BELT LOADER	TUG 660-1	2000	GAS						CBL153
BELT LOADER	TUG 660-1	2000	GAS						CBL153
BELT LOADER	TUG 660-1	2000	GAS						CBL154
BELT LOADER	TUG 660-1	2000	GAS						CBL154
BELT LOADER	TUG 660-1	2000	GAS						CBL154
Belt Loader	Tug	1992	Gasoline		No		South Pads	NCA Cargo Building	
Belt Loader	CAS	1979	Gasoline		No		South Pads	NCA Cargo Building	
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader		2001	electric	84					
Belt Loader	TUGXX	1995	electric	59					
Belt Loader	TUGXX	1995	electric	59					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Belt Loader	TUGXX	1995	electric	59					
Belt Loader	TUGXX	1995	electric	59					
Belt Loader	TUGXX	1995	electric	59					
Belt Loader	TUGXX	1995	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	1999	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2000	electric	59					
Belt Loader	TUGXX	2007	electric	59					
Belt Loader	TUGXX	1995	electric						
Belt Loader	TUGXX	2000	electric						
Belt Loader	TUG	1992	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Belt Loader	TUG	1992	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Belt Loader	WASP	1995	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
BELT LOADER	CHARLATTE	1996	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	1998	electric		No		44		Horsepower ratings are not recorded in or system

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BELT LOADER	CHARLATTE	2001	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	2006	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	2000	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	2000	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	2000	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	2000	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	1999	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	CHARLATTE	2002	electric		No		44		Horsepower ratings are not recorded in or system
BELT LOADER	WOLLARD	1988	DIESEL	56	No		Terminal 1	Same	
BELT LOADER	NMC-WOLLARD	2000	DIESEL	45	No		Terminal 1	Same	
BELT LOADER	NMC-WOLLARD	2000	DIESEL	45	No		Terminal 1	Same	
BELT LOADER	NMC-WOLLARD	2000	DIESEL	45	No		Terminal 1	Same	
BELT LOADER	WOLLARD	1988	electric		No		Terminal 1	Same	
BELT LOADER	WOLLARD	1988	electric		No		Terminal 1	Same	
BELT LOADER	WOLLARD	1988	electric		No		Terminal 1	Same	
BELT LOADER	WOLLARD	1990	electric		No		Terminal 1	Same	
BELT LOADER	TUG	2002	GAS	85	No		Terminal 1	Same	
BELT LOADER	TUG	2002	GAS	85	No		Terminal 1	Same	
Bobtail	Ford	1997	gasoline	175	No		Cargo	Cargo	
Bobtail	Ford	1997	gasoline	175	No		Cargo	Cargo	
Bobtail	Ford	1987	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Bobtail	EAGLE	2002	gasoline		No		RAMP	RAMP	
Bobtail	EAGLE	2007	gasoline		No		RAMP	RAMP	
Bobtail	EAGLE	2011	diesel		Yes		Terminal 2	Terminal 2	Light Duty Truck
Bobtail	EAGLE	2007	diesel		Yes		Terminal 2	Terminal 2	Light Duty Truck
Bobtail	EAGLE	2007	diesel		Yes		Terminal 2	Terminal 2	Light Duty Truck
Bobtail	EAGLE	2007	diesel		Yes		Terminal 2	Terminal 2	Light Duty Truck
Bobtail	EAGLE	2009	diesel		Yes		Terminal 2	Terminal 2	Light Duty Truck
Bobtail	NMC	1999	diesel		Yes		ALASKA CARGO WAREHOUSE	ALASKA CARGO WAREHOUSE	Light Duty Truck
Bobtail	NMC	1996	diesel		Yes		ALASKA CARGO WAREHOUSE	ALASKA CARGO WAREHOUSE	Light Duty Truck
BOBTAIL	FORD F350	2011	DIESEL						CTT291
BOBTAIL	FORD F700	1999	GAS						CTT285
BOBTAIL	FORD 800	1999	DIESEL						CTT286

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
BOBTAIL	FORD 800	1998	DIESEL						CTT288
BOBTAIL	FORD 800	1999	DIESEL						CTT287
BOBTAIL	INTERN'L 4700	2001	DIESEL						CTT289
Bobtail	Dodge	1989	Diesel		Yes		ICC	NCA Cargo Building	Light Duty Truck
Bobtail	EAGLE	2010	gasoline	300	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Bobtail	EAGLE	2011	gasoline	300	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
BOOM LIFT	JLG	2000	Propane	82	No		Terminal 1	Same	
BOOM LIFT	JLG	2000	Propane	82	No		Terminal 1	Same	
BOX VAN	FORD E350	1984	GAS						VAN921
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2002	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2002	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2002	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2001	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
BUS	NABI	2000	diesel		No		40 thru 46		Horsepower ratings are not recorded in or system
CAB SVC LIFT TRUCK	FORD	1997	DIESEL	175	No		Terminal 5	GSE Shop	
CAB SVC LIFT TRUCK	FORD	1997	DIESEL	175	No		Terminal 5	GSE Shop	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
CAB SVC LIFT TRUCK	FORD	1991	GAS	230	No		Terminal 5	GSE Shop	
CAB SVC LIFT TRUCK	FORD	1991	GAS		No		Terminal 5	GSE Shop	
CAB SVC LIFT TRUCK	FORD	1992	GAS		No		Terminal 5	GSE Shop	
CAB SVC LIFT TRUCK	FORD	1986	GAS		No		Terminal 5	GSE Shop	
CAB SVC LIFT TRUCK	FORD	1986	GAS		No		Terminal 5	GSE Shop	
CAB SVC LIFT TRUCK	FORD	1991	GAS		No		Terminal 5	GSE Shop	
CABIN SERVICE VEHICLE	EVI	1995	electric		No		44		Horsepower ratings are not recorded in or system
CABIN SERVICE VEHICLE	EVI	1995	electric		No		44		Horsepower ratings are not recorded in or system
Car	Chevrolet, 2.8L	1985	gasoline		Yes		Terminal 1	Terminal 1	Passenger Car
Cargo Chugger	GE	1997	electric		No		Cargo	Cargo	
Cargo Chugger	GE	2005	electric		No		Cargo	Cargo	
Cargo Chugger	GE	2006	electric		No		Cargo	Cargo	
Cargo Chugger	GE	2007	electric		No		Cargo	Cargo	
CARGO LOADER	FMC	1990	DIESEL	380	NO		ICC 1-10	AEROUNION YARD	
CARGO LOADER	FMC	1994	DIESEL	285	NO		ICC 1-10	AEROUNION YARD	
CARGO LOADER	DEUTZ/TLD	1994	DIESEL	300	NO		ICC 1-10	AEROUNION YARD	
CARGO LOADER	FMC	1986	DIESEL	385	NO		ICC 1-10	AEROUNION YARD	
Cargo Loader	Lantis	1988	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1988	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1988	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1991	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1988	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1989	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1992	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	1992	diesel	86	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Lantis	2001	diesel	95	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Trepel	2007	diesel	68	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Trepel	2007	diesel	68	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Trepel	2007	diesel	68	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Trepel	2007	diesel	68	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	Trepel	2007	diesel	68	No		Gates 40 thru 49	Gates 40 thru 49	
Cargo Loader	AGCO	1989	Diesel	85	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	1989	Diesel	25	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	FMC / JBT	2000	Diesel	160	No		DHL Ramp / HG1	DHL Ramp / HG1	
Cargo Loader	TLD	2007	Diesel	138	No		DHL Ramp / HG1	DHL Ramp / HG1	
Cargo Loader	TLD	2007	Diesel	100	No		DHL Ramp / HG1	DHL Ramp / HG1	
Cargo Loader	FMCXX	2009	Diesel	110	No				
Cargo Loader	FMCXX	2009	Diesel	110	No				
Cargo Loader	FMCXX	2009	Diesel	110	No				

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Loader	FMCXX	2009	Diesel	110	No				
Cargo Loader	FMCXX	2009	Diesel	110	No				
Cargo Loader	FMCXX	2009	Diesel	110	No				
Cargo Loader	FMCXX	2009	Diesel	160	No				
Cargo Loader	FMCXX	2010	Diesel	160	No				
Cargo Loader	FMCXX	2009	Diesel	110	No				
Cargo Loader	FMCXX	2009	Diesel	175	No				
Cargo Loader	FMCXX	1998	Diesel	152	No				
Cargo Loader	FMCXX	1997	Diesel	138	No				
Cargo Loader	FMCXX	1996	Diesel	138	No				
Cargo Loader	FMCXX	2001	Diesel	152	No				
Cargo Loader	FMCXX	1989	Diesel	102	No				
Cargo Loader	FMCXX	1989	Diesel	99	No				
Cargo Loader	FMCXX	1989	Diesel	87	No				
Cargo Loader	FMCXX	1989	Diesel	102	No				
Cargo Loader	FMCXX	1989	Diesel	87	No				
Cargo Loader	FMCXX	1989	Diesel	87	No				
Cargo Loader	FMCXX	1989	Diesel	87	No				
Cargo Loader	FMCXX	1989	Diesel	87	No				
Cargo Loader	TLD Lantis	1998	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	TLD Lantis	1997	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	Lantis	1984	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	Lantis	1984	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	fmc	1992	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	fmc	2010	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	Lantis	1988	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	TLD Lantis	1997	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	TLD Lantis	1998	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	FMC	1995	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Cargo Loader	FMC	1989	diesel		No		RAMP	RAMP	
Cargo Loader	TLD	2002	diesel		No		RAMP	RAMP	
Cargo Loader	FMC	2006	diesel		No		RAMP	RAMP	
Cargo Loader	FMC	1996	diesel		No		RAMP	RAMP	
Cargo Loader	FORD	1977	LPG		No		ICC		
Cargo Loader	Deutz	1997	diesel	146	No		ICC		
Cargo Loader	FORD	1977	gasoline		No		ICC		
Cargo Loader	Deutz	1997	diesel	131	No		KOREA WH		
Cargo Loader	Deutz	2007	diesel	138	No		ASIANA CARGO		
Cargo Loader	Deutz	2008	diesel	138	No		ICC		
Cargo Loader	PERKINS	2000	diesel	85	No				
Cargo Loader	PERKINS	2000	diesel	91	No				
Cargo Loader	PERKINS	2000	diesel	85	No				
Cargo Loader	PERKINS	2000	diesel	85	No				

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Loader	Deutz	2004	diesel	87	No				
Cargo Loader	Deutz	2004	diesel	100	No				
Cargo Loader	Deutz	2004	diesel	100	No		ICC		
Cargo Loader	Caterpillar	2008	diesel	110	No				
Cargo Loader	Caterpillar	2008	diesel	110	No				
Cargo Loader	Caterpillar	2008	diesel	110	No		ICC		
Cargo Loader	Deutz	2008	diesel	100	No				
Cargo Loader	Deutz	2008	diesel	100	No				
Cargo Loader	Deutz	2011	diesel	100	No				
Cargo Loader	Deutz	2011	diesel	100	No				
Cargo Loader	Deutz	2011	diesel	100	No				
Cargo Loader	Deutz	2012	diesel	100	No				
Cargo Loader	Deutz	2012	diesel	100	No				
Cargo Loader	Deutz	2012	diesel	100	No				
Cargo Loader	FMC	1999	diesel		No		Terminal 2	Storage by 96th St	
Cargo Loader	FMC	1999	diesel		No		Terminal 2	Storage by 96th St	
Cargo Loader	FMC	2004	diesel		No		Terminal 2	Storage by 96th St	
Cargo Loader	FMC	1998	diesel		No		Terminal 2	Storage by 96th St	
Cargo Loader	FMC	1996	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	1995	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	1999	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	1999	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	1999	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	1999	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	2000	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	2005	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	TLD	1997	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	2008	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	2008	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	2008	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	2008	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	JBT	2011	diesel		No		Terminal 2	Terminal 2	
Cargo Loader	FMC	1985	Diesel		No		South Pads	NCA Cargo Building	
Cargo Loader	FMC	2000	Diesel		No		South Pads	NCA Cargo Building	
Cargo Loader	FMC	1990	Diesel		No		South Pads	NCA Cargo Building	
Cargo Loader	FMC	1994	Diesel		No		South Pads	NCA Cargo Building	
Cargo Loader	JBT	1993	diesel	88					
Cargo Loader	JBT	1993	electric	88					
Cargo Loader	JBT	2000	diesel	88					
Cargo Loader	JBT	1999	diesel	88					
Cargo Loader	FMCXX	1998	electric	87					
Cargo Loader	FMCXX	1998	electric	87					
Cargo Loader	FMCXX	1998	electric	87					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Loader	FMCXX	1998	electric	87					
Cargo Loader	FMCXX	1996	electric	88					
Cargo Loader	FMCXX	1996	electric	87					
Cargo Loader	FMCXX	1996	electric	87					
Cargo Loader	FMCXX	1996	electric	87					
Cargo Loader	FMCXX	1997	electric	87					
Cargo Loader	FMCXX	1997	electric	87					
Cargo Loader	FMCXX	1997	electric	87					
Cargo Loader	FMCXX	1998	electric	87					
Cargo Loader	Lantis	1998	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Loader	Lantis	1996	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Loader	TLD	2006	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Loader	AGCO	1996	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	1993	Diesel	85	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	1997	Diesel	131	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	1997	Diesel	131	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	1999	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	2000	Diesel	131	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	2000	Diesel	131	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	2002	Diesel	131	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp,	
Cargo Loader	AGCO	2003	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO.	2005	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	Perkins &Engines	2005	Diesel	90	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Loader	AGCO	2005	Diesel	25	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
CARGO LOADER	AGCO	1998	Diesel	86	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	TUG	2008	gasoline	79	no		Aeromexpress Cargo	Aeromexpress Cargo	
Cargo Tractor	TUG	2008	gasoline	79	no		Aeromexpress Cargo	Aeromexpress Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2009	electric	40	no		all terminals	APS Cargo	
Cargo Tractor	TUG	2010	electric	40	no		APS Cargo	APS Cargo	
Cargo Tractor	TUG	2010	electric	40	no		APS Cargo	APS Cargo	
Cargo Tractor	TUG	2012	electric	40	no		APS Cargo	APS Cargo	
Cargo Tractor	TUG	2012	electric	40	no		Aeromexpress Cargo	Aeromexpress Cargo	
Cargo Tractor	TUG	2012	electric	40	no		Aeromexpress Cargo	Aeromexpress Cargo	
Cargo Tractor	Other	2002	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	Other	2004	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	Other	2004	Diesel	25	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	Other	2004	Diesel	80	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	Perkins &Engines	2005	Diesel	86	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	Perkins &Engines	2005	Diesel	86	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	Perkins &Engines	2005	Diesel	86	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Tractor	Perkins &Engines	2005	Diesel	86	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	DEUTZ-AG	2006	Diesel	80	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo Tractor	DEUTZ-AG	0	Diesel	80	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
CARGO TRACTOR	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1999	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	2000	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	2000	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	2000	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	2001	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	2001	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	TUG TECHNOLOGIES	2007	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	TUG TECHNOLOGIES	2007	DIESEL		No		Terminal 5	GSE Shop	
CARGO TRACTOR	TUG TECHNOLOGIES	2011	DIESEL	75	No		Terminal 5	GSE Shop	
CARGO TRACTOR	TUG TECHNOLOGIES	2011	DIESEL	75	No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1996	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1996	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1997	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	TUG TECHNOLOGIES	1986	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	FORD	1996	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1995	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	FORD	1990	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1997	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	WOLLARD	1997	GAS		No		Terminal 5	GSE Shop	
CARGO TRACTOR	FORD	1990	GAS		No		Terminal 5	GSE Shop	
Cargo Tractor	FORD	1999	gasoline		No		QANTAS WH	QANTAS WH	
Cargo Tractor	FORD	2006	diesel	215	No		Airport wide		
Cargo Tractor	FORD	2006	diesel	325	No		Airport wide		
Cargo Tractor	FORD	2006	diesel	325	No		Airport wide		
Cargo Tractor	FORD	2008	diesel	325	No		Airport wide		
Cargo Tractor	FORD	2008	diesel	240	No		Airport wide		
Cargo Tractor	FORD	2010	diesel	240	No		Airport wide		
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	2001	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Tractor	TUG	2007	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	2011	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	2010	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	2012	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	TUG	1999	LPG		Yes		Ramp delivery to OAL	warehouse	
Cargo Tractor	Stewart Stevenson	1987	Gasoline	210	No		ICC Cargo Ramp	Air Freight Building	
Cargo Tractor	Stewart Stevenson	1989	Gasoline	210	No		ICC Cargo Ramp	Air Freight Building	
Cargo Tractor	Tiger	2000	Gasoline		No		ICC	Lufthansa Cargo	
Cargo Tractor	CHARL	1997	electric	55					
Cargo Tractor	CHARL	1997	electric	55					
Cargo Tractor	CHARL	1997	electric	55					
Cargo Tractor	CHARL	1996	electric	55					
Cargo Tractor	CHARL	1996	electric	55					
Cargo Tractor	CHARL	1996	electric	55					
Cargo Tractor	CHARL	1993	electric	55					
Cargo Tractor	CHARL	1989	electric	86					
Cargo Tractor	CHARL	1983	electric	67					
Cargo Tractor	CHARL	1983	electric	67					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1992	electric	55					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1994	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	CHARL	1995	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	2008	electric	55					
Cargo Tractor	TOYOT	1996	electric	67					
Cargo Tractor	TOYOT	1996	electric	55					
Cargo Tractor	TOYOT	1996	electric	55					
Cargo Tractor	TOYOT	2000	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	TOYOT	2002	electric	55					
Cargo Tractor	CLARK	1970	gasoline						
Cargo Tractor	TUGXX	1987	gasoline						
Cargo Tractor	CLARK	1979	gasoline						
Cargo Tractor	TUGXX	1990	LPG						
Cargo Tractor	TUGXX	1993	LPG						

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cargo Tractor	TUGXX	1993	LPG						
Cargo Tractor	CHARL	1996	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TOYOT	2000	electric						
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	TUG	1999	LPG	95					
Cargo Tractor	S&S Tug	2004	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Tractor	S&S Tug	2004	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Tractor	TUG	2006	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Tractor	TUG	2006	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Tractor	TUG	2008	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Tractor	TUG	2008	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Cargo Tractor	NWM	2010	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Cargo Tractor	NWM	2012	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Cargo Tractor	NWM	2001	gasoline	98	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Cargo Tractor	NWM	2010	diesel	67	No		5758 W. Century Blvd	5758 W. Century Blvd	serviced at 5600 W. Century Blvd
Cargo tractor	FORD	1985	Diesel	61	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Cargo tractor	FORD	1992	Diesel	170	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
CARGO VAN	FORD	2001	DIESEL		No		Terminal 5	GSE Shop	
Cart	Taylor Dunn	1996	electric		No				
Cart	Taylor Dunn	2002	electric		No				
Cart	Taylor Dunn	2009	electric		No				
Cart	Taylor Dunn	2011	electric		No				
Cart	Yamaha	1989	electric		No				
Cart	Textron Corp	2007	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Cart	Textron Corp	2011	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Cart	Mortec		Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cart	Taylor Dunn	?	electric	10	No		T64 thru T67	T6	
Cart	Taylor Dunn	1991	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	Taylor Dunn	2007	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	Taylor Dunn	2007	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	Taylor Dunn	2007	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	Taylor Dunn	2007	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	Taylor Dunn	1991	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	Taylor Dunn	2011	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
Cart	EZGO	1992	electric	55					
Cart	EZGO	1992	electric	55					
Cart	EZGO	1992	electric	55					
Cart	EZGO	1992	electric	55					
Cart	EZGO	1999	electric	55					
Cart	EZGO	1999	electric	55					
Cart	CUSHMAN	1985	electric	55					
Cart	EZEGO	1997	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1994	electric						
Cart	EZEGO	1994	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1995	electric						
Cart	EZEGO	1988	electric						
Cart	EZEGO	1988	electric						
Cart	EZEGO	1988	electric						
Cart	EZEGO	1989	electric						

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cart	EZEGO	1989	electric						
Cart	EZEGO	1990	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1998	electric						
Cart	TAYDN	1988	gasoline						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1991	electric						
Cart	EZEGO	1996	electric						
Cart	EZEGO	1996	electric						
Cart	EZEGO	1996	electric						
Cart	UALXX	1993	electric						
Cart	UALXX	1993	electric						
Cart	EZEGO	1993	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1993	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	1993	electric						
Cart	EZEGO	1993	electric						
Cart	EZEGO	1993	electric						
Cart	EZEGO	1993	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1999	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	2000	electric						
Cart	EZEGO	1997	electric						

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Cart	TAYDN	2001	electric						
Cart	TAYDN	2001	electric						
Cart	TAYDN	2001	electric						
Cart	TAYDN	2001	electric						
Cart	TAYDN	2001	electric						
Cart	TAYDN	2001	electric						
Cart	TAYDN	2001	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	1997	electric						
Cart	EZEGO	2002	electric						
Cart	INGRN	2008	electric						
Cart	INGRN	2008	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	EZEGO	1998	electric						
Cart	TAYLO	1980	Electric	55					
Cart	TAYLO	1985	Electric	55					
Cart	KARRI	1986	Electric	55					
Cart	EZEGO	1996	electric						
Cart	EZEGO	1994	electric						
Cart	EZEGO	2006	electric						
Catering Truck	Ford	1988	Unleaded	F-700	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Int'l	1998	Diesel	4,700	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Int'l	1998	Diesel	4,700	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Int'l	1998	Diesel	4,700	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Int'l	2001	Diesel	4,700	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Int'l	2001	Diesel	4,700	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Ford	2006	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Ford	2007	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Ford	2007	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Ford	2007	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Catering Truck	Ford	2010	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Ford	2011	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	Ford	2011	Diesel	F-750	Yes		T-2, T3, T4, TBIT	5807 W. 98th St.	FFG is located outside the AOA
Catering Truck	IZUZU	2010	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	IZUZU	2010	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	IZUZU	2010	diesel	200	NO		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2008	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2007	diesel	215	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2008	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2009	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2007	diesel	215	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2012	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F650	2012	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	2011	diesel	220	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	2002	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-750	2007	diesel	215	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-750	2007	diesel	215	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-800	1997	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-750	2009	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-800	1996	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	2001	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1992	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-750	2008	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-750	2008	diesel	200	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1993	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	1993	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD F-800	1998	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	2000	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	INTERNAITONAL	2000	diesel	175	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	F-800	1991	diesel	170	No		AOA RAMP/GATES	6701 W IMPERIAL HWY	
Catering Truck	FORD	2000	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2000	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2001	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2001	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Catering Truck	INTERNATIONAL	2003	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2003	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2006	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2006	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2004	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2008	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2008	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2011	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2011	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2011	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2009	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2012	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2012	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2012	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2013	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	INTERNATIONAL	2013	DIESEL	250	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Catering Truck	FORD	2000	diesel	210	No		Gate 1 thru 69	LSG sky chefs building	
Catering Truck	FORD	1988	diesel	200	No		Gate 1 thru 69		
Catering Truck	FORD	2000	diesel	210	No		Gate 1 thru 69		
Catering Truck	FORD	2000	diesel	210	No		Gate 1 thru 69		
Catering Truck	GMC	1997	diesel	210	No		Gate 1 thru 69		
Catering Truck	FORD	1991	diesel	429	No		Gate 1 thru 69		
Catering Truck	FORD	1991	diesel	429	No		Gate 1 thru 69		
Catering Truck	FORD	1991	diesel	429	No		Gate 1 thru 69		
Catering Truck	FORD	1988	diesel	200	No		Gate 1 thru 69		
Catering Truck	FORD	1987	diesel	370	No		Gate 1 thru 69		
Catering Truck	FORD	1995	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1995	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1995	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1995	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1995	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1993	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1987	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1993	gasoline	370	No		Gate 1 thru 69		
Catering Truck	FORD	1993	gasoline	370	No		Gate 1 thru 69		
Catering Truck	FORD	1991	gasoline	370	No		Gate 1 thru 69		
Catering Truck	FORD	1991	gasoline	370	No		Gate 1 thru 69		
Catering Truck	FORD	1991	gasoline	370	No		Gate 1 thru 69		
Catering Truck	INT	2009	diesel	230	No		Gate 1 thru 69		
Catering Truck	INT	2009	diesel	230	No		Gate 1 thru 69		
Catering Truck	INT	2008	diesel	230	No		Gate 1 thru 69		
Catering Truck	INT	2008	diesel	230	No		Gate 1 thru 69		
Catering Truck	FORD	2003	diesel	330	No		Gate 1 thru 69		

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Catering Truck	FORD	1998	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1998	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1998	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1998	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1998	diesel	175	Yes		Gate 1 thru 69		
Catering Truck	FORD	1998	diesel	175	No		Gate 1 thru 69		
Catering Truck	FORD	1997	diesel	175	No		Gate 1 thru 69		
Catering Truck	A lafrance	2009	diesel	450	No		Gate 1 thru 69		
Catering Truck	A lafrance	2011	diesel	450	No		Gate 1 thru 69		
Catering Truck	RJ Tug	No Year	gasoline	145	No		Gate 1 thru 69		
Catering Truck	RJ Tug	No Year	gasoline	145	No		Gate 1 thru 69		
Catering Truck	FORD	1988	diesel	200	No		Gate 1 thru 69		
Catering Truck	FORD	2012	diesel	200	Yes		Gate 1 thru 69		
CONTAINER LOADER	FMC	1996	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	1996	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	1997	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	1997	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	1997	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	1998	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	1999	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	2000	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	2000	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER LOADER	FMC	2002	DIESEL		No		Terminal 5	GSE Shop	
CONTAINER TRANSPORT	TLD AMERICA	1996	DIESEL	304	No		Terminal 5	GSE Shop	
CONTAINER TRANSPORT	TLD AMERICA	1996	DIESEL	304	No		Terminal 5	GSE Shop	
CRANE	JLG	1980	DIESEL		No		Terminal 5	GSE Shop	
DE-ICE CART	TRUMP	1988	GAS		No		Terminal 5	GSE Shop	
Deicer	FMC	1990	gasoline	10	No		Hangar	Hangar	
ELECTRIC CART (AA-FAC)	TAYLOR-DUNN	1996	electric		No		44		Horsepower ratings are not recorded in or system
ELECTRIC CART-MNTC (MTX)	TAYLOR-DUNN	1996	electric		No		44		Horsepower ratings are not recorded in or system
ELECTRIC CART-MNTC (MTX)	E-Z-GO	1986	electric		No		44		Horsepower ratings are not recorded in or system
ELECTRIC CART-MNTC (MTX)	E-Z-GO	1986	electric		No		44		Horsepower ratings are not recorded in or system
Electric Gem Cart	GE	2000	electric		No		Terminal 1	Terminal 1	
ERJ CUSTOMER LIFT	RAMCI	1994	electric		No		44		Horsepower ratings are not recorded in or system
F250 Swepco	FORD	1993	gasoline		Yes		GSE shop/Gate 40thur46		Light Duty Truck; installed 6/29/12

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
F350 Stake bed	FORD	1990	gasoline		Yes		GSE shop/Gate 40thur46		Horsepower ratings are not recorded in or system
FLOOR SCRUBBER	TENNANT	1990	electric		No		44		Horsepower ratings are not recorded in or system
FLUID CART	BENTZ	1987	NONE		No		Terminal 1	Same	
FLUID CART	BENTZ	1990	NONE		No		Terminal 1	Same	
Fork Lift	TOYOTA	2008	gasoline	51	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2008	gasoline	51	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2008	gasoline	51	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2008	gasoline	51	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2008	gasoline	51	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2008	gasoline	51	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2008	gasoline	91	No		Aeromexpress Cargo	Aeromexpress Cargo	
Fork Lift	TOYOTA	2006	gasoline	91	No		APS Cargo	APS Cargo	
Fork Lift	TOYOTA	2010	gasoline	96	No		APS Cargo	APS Cargo	
Fork Lift	TOYOTA	2007	gasoline	91	No		APS Cargo	APS Cargo	
Fork Lift	TOYOTA	2005	gasoline	91	No		APS Cargo	APS Cargo	
Fork Lift	TOYOTA	2005	gasoline	91	No		APS Cargo	APS Cargo	
Fork Lift	TOYOTA	2005	gasoline	91	No		APS Cargo	APS Cargo	
Fork Lift	Toyota	2008	electric	44	No				
Fork Lift	Toyota	2008	electric	44	No				
Fork Lift	Clark	1988	diesel		No				
Fork Lift	Hyster	1970	LPG	225	No		Cargo	Cargo	
Fork Lift	Toyota	2007	LPG	42	No		Cargo	Cargo	
Fork Lift	Blue Giant	1979	electric	75	No		Cargo	Cargo	
Fork Lift	Hyster	1980	diesel	200	No		Cargo	Cargo	
Fork Lift	Clark	1989	LPG	82	No		Cargo	Cargo	
Fork Lift	Clark	1989	gasoline	110	No		Cargo	Cargo	
Fork Lift	Hyster	1991	LPG	94	No		Cargo	Cargo	
Fork Lift	Hyster	1992	LPG	94	No		Cargo	Cargo	
Fork Lift	Toyota	2006	LPG	44	No		Cargo	Cargo	
Fork Lift	Toyota	2006	LPG	44	No		Cargo	Cargo	
Fork Lift	Toyota	2006	LPG	33	No		Cargo	Cargo	
Fork Lift	Toyota	2006	LPG	33	No		Cargo	Cargo	
Fork Lift	Clark		electric	66	No		Cargo	Cargo	
Fork Lift	Toyota	2007	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2007	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2007	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2007	LPG	10	No		Cargo	Cargo	
Fork Lift	Toyota	2008	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2007	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2008	LPG	38	No		Cargo	Cargo	
Fork Lift	Toyota		LPG	38	No		Cargo	Cargo	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	Toyota	2008	diesel	80	No		Cargo	Cargo	
Fork Lift	Toyota	2009	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2009	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2009	LPG	42	No		Cargo	Cargo	
Fork Lift	Toyota	2008	LPG	51	No		Cargo	Cargo	
Fork Lift	Toyota	2011	LPG	90	No		Cargo	Cargo	
Fork Lift	Hyster	1975	gasoline	100	No		Cargo	Cargo	
Fork Lift	Hyster	1970	diesel	167	No		Cargo	Cargo	
Fork Lift	Toyota	2001	electric	75	No		Cargo	Cargo	
Fork Lift	Toyota	2001	electric	75	No		Cargo	Cargo	
Fork Lift	Toyota	2001	electric	75	No		Cargo	Cargo	
Fork Lift	Hyster	1980	electric	80	No		Cargo	Cargo	
Fork Lift	Hyster	1980	electric	100	No		Cargo	Cargo	
Fork Lift	Big Joe	1990	electric	10	No		Cargo	Cargo	
Fork lift	Toyota	1989	Propane		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	TOYOT	2005	LPG	51	No				
Fork Lift	TOYOT	2011	LPG	55	No				
Fork Lift	TOYOT	2011	LPG	85	No				
Fork Lift	TOYOT	2009	LPG	89	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2008	Gasoline	51	No				
Fork Lift	TOYOT	2009	Gasoline	51	No				
Fork Lift	HELI	2011	Diesel	200	No				
Fork Lift	HYSTR	1996	Electric	30	No				
Fork Lift	ROYAL	2003	Diesel	190	No				
Fork Lift	TAYLR	1994	Diesel	160	No				
Fork Lift	CTRPL	1989	Diesel	150	No				
Fork Lift	mitsubishi	1990	LPG		No		TBIT,ICC	ICC, MAINT YARD	
Fork Lift	caterpillar	1995	LPG		No		TBIT,ICC	ICC, MAINT YARD	
Fork Lift	HYSTER	1998	LPG		No		W/H	W/H	
Fork Lift	HYSTER	1998	LPG		No		W/H	W/H	
Fork Lift	HYSTER	2001	LPG		No		W/H	W/H	
Fork Lift	HYSTER	2001	LPG		No		W/H	W/H	
Fork Lift	HYSTER	2001	LPG		No		W/H	W/H	
Fork Lift	HYSTER	2001	LPG		No		W/H	W/H	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	HYSTER	1984	diesel		No		RAMP	RAMP	
Fork Lift	HYSTER	2005	diesel		No		RAMP	RAMP	
Fork Lift	CLARK	1988	diesel		No		RAMP	RAMP	
Fork Lift	HYSTER	1991	LPG		No		RAMP	RAMP	
Fork Lift	TOYOTA	1993	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2005	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2005	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2005	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2007	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2007	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2007	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2013	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2013	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2013	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2013	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2013	LPG		No		W/H	W/H	
Fork Lift	TOYOTA	2013	LPG		No		W/H	W/H	
Fork Lift	Komatsu		LPG		No		HANGER 1	HANGER 1	
Fork Lift	Komatsu		LPG		No		HANGER 1	HANGER 1	
Fork Lift	Toyota	2012	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2012	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2012	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2012	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2007	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2007	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2007	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2008	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2007	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2007	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2012	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2010	LPG		No		Warehouse	warehouse	
Fork Lift	Toyota	2009	electric		No		Warehouse	warehouse	
Fork Lift	Toyota	2009	electric		No		Warehouse	warehouse	
Fork Lift	Toyota	2009	electric		No		Warehouse	warehouse	
Fork Lift	Toyota	2009	electric		No		Warehouse	warehouse	
Fork Lift	Yale	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Yale	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Yale	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Yale	2011	LPG		No		Warehouse	warehouse	
Fork Lift	Hyster	1998	diesel		No		Warehouse	warehouse	
Fork Lift	Hyster	1999	LPG	220	No		Air Freight Building	Air Freight Building	
Fork Lift	Yale	2006	LPG	160	No		Air Freight Building	Air Freight Building	
Fork Lift	Yale	2006	LPG	160	No		Air Freight Building	Air Freight Building	
Fork Lift	Yale	2006	LPG	160	No		Air Freight Building	Air Freight Building	
Fork Lift	Yale	2006	LPG	160	No		Air Freight Building	Air Freight Building	
Fork Lift	Toyota	2008	CNG		No		7001 W Imperial Highway	NA	General Purpose
Fork Lift	Linde	2008	electric		No		Terminal 8	Terminal 8	All service performed at Continental Hangar, SkyWest GSE shop. Our forklifts usually are used around 100 hours per YEAR.
Fork Lift	Linde	2008	electric		No		Continental hangar, SkyWest GSE and COMMO shops	Continental hangar, SkyWest GSE and COMMO shops	All service performed at Continental Hangar, SkyWest GSE shop. Our forklifts usually are used around 100 hours per YEAR.
Fork Lift	GE	2008	electric		No		Terminal 1	Terminal 1	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	Toyota, 4Y	2002	gasoline		No		Cargo	Cargo	
Fork Lift	Toyota, 4Y	2002	gasoline		No		Cargo	Cargo	
Fork Lift	Toyota, 4Y	2002	gasoline		No		Cargo	Cargo	
Fork Lift	Toyota, 4YECS	2011	LPG		No		Cargo	Cargo	
Fork Lift	Toyota, 4YECS	2011	LPG		No		Cargo	Cargo	
Fork Lift	Toyota, 4YECS	2008	LPG		No		Terminal 1	Terminal 1	
Fork Lift	Toyota, 4YECS	2008	LPG		No		Provisioning	Provisioning	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Nissan	2010	LPG	55	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Caterpiller	2009	LPG	92	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Caterpiller	2009	LPG	92	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Caterpiller	2009	LPG	92	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Caterpiller	2009	LPG	92	No		Cargo Warehouse	Cargo Warehouse	
Fork Lift	Hyster	2008	Diesel		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Hyster	2010	LPG		No		South Pads	NCA Cargo Building	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	Toyota	2012	LPG		No		ICC	Lufthansa Cargo	
Fork Lift	EZEGO	1994	electric						
Fork Lift	TAYLR	1994	electric						
Fork Lift	TAYDN	1994	electric						
Fork Lift	TAYDN	1994	electric						
Fork Lift	TAYDN	1994	electric						
Fork Lift	TAYDN	1994	electric						
Fork Lift	TAYDN	2008	electric						
Fork Lift	TAYDN	2008	electric						
Fork Lift	TAYDN	2008	electric						
Fork Lift	TAYDN	2008	electric						
Fork Lift	EZEGO	2008	electric						
Fork Lift	EZEGO	2008	electric						
Fork Lift	EZEGO	2008	electric						
Fork Lift	EZEGO	2008	electric						
Fork Lift	EZEGO	1988	LPG						
Fork Lift	TAYDN	1990	LPG						
Fork Lift	CLBCR	1993	LPG						
Fork Lift	TAYLR	2001	LPG						
Fork Lift	INGRN	2001	LPG						
Fork Lift	INGRN	2005	LPG						
Fork Lift	CUSHM	2006	LPG						
Fork Lift	TAYDN	1982	gasoline						
Fork Lift	TAYDN	1978	gasoline						

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	TAYDN	1996	electric						
Fork Lift	TAYDN	1997	electric						
Fork Lift	TAYDN	1999	electric						
Fork Lift	TAYDN	1999	electric						
Fork Lift	EZEGO	1993	LPG						
Fork Lift	EZEGO	1993	LPG						
Fork Lift	EZEGO	1987	LPG						
Fork Lift	STINR	1997	LPG						
Fork Lift	STINR	1997	LPG						
Fork Lift	STINR	1999	LPG						
Fork Lift	NORDC	1998	LPG						
Fork Lift	NORDC	1998	LPG						
Fork Lift	STINR	2001	LPG						
Fork Lift	WOLLD	2001	LPG						
Fork Lift	WOLLD	1996	LPG						
Fork Lift	HYSTR	1972	diesel	127					
Fork Lift	HYSTR	1997	diesel	42					
Fork Lift	Clark	1996	gasoline		No		UPS Cargo Ramp	UPS Cargo Ramp	
Fork Lift	HYSTER	2012	diesel	95	No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	diesel	95	No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	YALE	2006	diesel		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5600 W. Century Blvd	5600 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2012	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	TOYOTA	2006	electric		No		5600 W. Century Blvd	5600 W. Century Blvd	
Fork Lift	TOYOTA	2006	electric		No		5600 W. Century Blvd	5600 W. Century Blvd	
Fork Lift	HYSTER	2011	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2011	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2011	electric		No		5758 W. Century Blvd	5758 W. Century Blvd	
Fork Lift	HYSTER	2011	electric		No		5600 W. Century Blvd	5600 W. Century Blvd	
Fork Lift	AGCO	2002	LPG	25	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Fork Lift	Other	2002	Diesel	90	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Fork Lift	Other	2002	Diesel	170	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Fork Lift	CLACK	2002	Diesel	170	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fork Lift	AGCO	2002	Diesel	170	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Fork Lift	NISSAN-INDUSTRIAL	2005	LPG	62	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Fork Lift	CATERPILLAR	1991	ELEC		No		Terminal 5	GSE Shop	
Fork Lift	CATERPILLAR	1997	ELEC		No		Terminal 5	GSE Shop	
Fork Lift	CATERPILLAR	1990	ELEC		No		Terminal 5	GSE Shop	
Fork Lift	TOYOTA	1998	ELEC		No		Terminal 5	GSE Shop	
Fork Lift	TAYLOR DUNN	1991	DIESEL		No		Terminal 5	GSE Shop	
Fork Lift	TOYOTA	1996	DIESEL		No		Terminal 5	GSE Shop	
Fork Lift	NISSAN	1998	LP		No		Cargo	GSE Shop	
Fork Lift	NISSAN	1997	LP		No		Cargo	GSE Shop	
Fork Lift	NISSAN	1997	LP		No		Cargo	GSE Shop	
Fork Lift	NISSAN	1997	LP		No		Cargo	GSE Shop	
Fork Lift	NISSAN	1999	LP		No		Cargo	GSE Shop	
Fork Lift	TUSK	2009	LP	-	No		Cargo	GSE Shop	
Fork Lift	TUSK	2009	LP	-	No		Cargo	GSE Shop	
Fork Lift	TUSK	2009	LP	-	No		Cargo	GSE Shop	
Fork Lift	TUSK	2009	LP	-	No		Cargo	GSE Shop	
Fork Lift	HYSTER	2011	LP	46	No		Cargo	GSE Shop	
Fork Lift	HYSTER	2011	LP	46	No		Cargo	GSE Shop	
Fork Lift	HYSTER	2011	LP	46	No		Cargo	GSE Shop	
Fork Lift	HYSTER	2011	LP	46	No		Cargo	GSE Shop	
Fork Lift	HYSTER	2011	LP	46	No		Cargo	GSE Shop	
Fork Lift	Toyota	2000	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Hyster	1997	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Toyota	1993	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Komatsu		Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Crown	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Toyota	1998	LPG		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Crown	2005	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Toyota	2000	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Crown	2007	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Toyota	2011	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	Toyota	2011	Electric		No		DHL Ramp / HG1	DHL Ramp / HG1	
Fork Lift	NISSAN CPH01A15	2005	Propane						FLU006
Fork Lift	HYSTER H155XL	1999	Propane						FLU004
Fork Lift	TOYOTA 6000 LB LPG	1997	Propane						FLU009
Fork Lift	CLARK	1982	Propane	46	No		Terminal 1	Same	
Fork Lift	CLARK	1990	Propane	107	No		Terminal 1	Same	
Fork Lift	HYSTER	2001	Propane	42	No		Terminal 1	Same	
Fork Lift	YALE	1989	Propane	42	No		Terminal 1	Same	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
FORK LIFT (MTX)	TOYOTA	1986	LPG		No		GSE shop		Horsepower ratings are not recorded in or system
FORKLIFT	TOYOTA	1986	LPG		No		GSE shop		Horsepower ratings are not recorded in or system
Fuel Truck	REFUELER JET	1992	Diesel	25	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	Ramp start	1997	Diesel	90	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	DART	1998	Diesel	25	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	Other	2000	Diesel	25	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	Volvo-Construction	2000	Diesel	25	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Fuel Truck	MITSUBISHI MOTORS	2007	Diesel	90	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	AGCO	2007	Diesel	25	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	AGCO	2007	Diesel	25	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	MITSUBISHI MOTORS	2007	Diesel	90	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	INTERNATION TRUCK	2007	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	MITSUBISHI MOTORS	2008	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fuel Truck	MITSUBISHI MOTORS	2008	Diesel	175	NO		Terminal 2,3,5,6,7,8 ICC, remote, UPS, FEDEX	United Maintenance bay	
Fuel Truck	Caterpillar	2007	diesel	261	Yes		Airport wide	E-13	Verified as self-contained; the truck is strictly used to fuel GSE only, not meant to fuel aircraft
Fuel Truck	INTERNATIONAL	1986	diesel	300					INTERNATIONAL; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	1999	diesel	215					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	1999	diesel	215					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	1999	diesel	215					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	2001	diesel	215					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	2001	diesel	215					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	2004	diesel	235					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	2005	diesel	235					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	2005	diesel	220					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	E3	2005	diesel	235					TYPE E AVS; 10,000 USG tanker; verified as self-contained
Fuel Truck	BOSSERMAN	2007	diesel	235					RF10,000SC-800; 10,000 USG tanker; verified as self-contained

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Fuel Truck	Ford	2009	Diesel		Yes		T1,T2,T3, Fedex	NCA Cargo Building	Fuel Vacuum truck used to perform hydrant fuel pit maintenance at T1, T2, T3, and FedEx Fuel System; verified as self-contained
Fuel Truck	FORD	1974	LPG	95					Verified as fuel truck; hauls propane
Generator	Honda	1990	gasoline	10	No		Auto Shop	Auto Shop	
Generator	Honda	1990	gasoline	10	No		Auto Shop	Auto Shop	
Generator	Honda	1990	gasoline	10	No		Auto Shop	Auto Shop	
Generator	Dayton	1999	gasoline		No		Auto Shop	Auto Shop	
Generator			gasoline		No		Auto Shop	Auto Shop	
Generator	Coleman	1989	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Portable Light Unit
Generator	Magnum	2006	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Portable Light Unit
Generator	Magnum	2006	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Portable Light Unit
Generator	Magnum	2012	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Portable Light Unit
Golf Cart	GE	1998	electric		No		Terminal 1	Terminal 1	
Golf Cart	GE	1998	electric		No		Terminal 1	Terminal 1	
Golf Cart	FUJI,EH 29C	1992	gasoline		No		Provisioning	Provisioning	
Golf Cart	Robin, 295cc	1999	gasoline		No		Terminal 1	Terminal 1	
Golf Cart	Briggs&Stratton, 2 Cyl	2000	gasoline		No		Terminal 1	Terminal 1	
Golf Cart	Robin, 295cc	2000	gasoline		No		Terminal 1	Terminal 1	
Golf Cart	Robin, 295cc	2000	gasoline		No		Terminal 1	Terminal 1	
Golf Cart	Robin, 295cc	2000	gasoline		No		Terminal 1	Terminal 1	
Golf Cart	Robin, 295cc	2000	gasoline		No		Terminal 1	Terminal 1	
GPU RECTIFIER	HOBART	2001	electric		No		44		
GPU RECTIFIER (MTX)	HOBART	2001	electric		No		44		
Ground Power	DETRIOT	2000	DIESEL	180	NO		ICC 1-10	AEROUNION YARD	
Ground Power	CUMMINS	1998	DIESEL	152	NO		ICC 1-10	AEROUNION YARD	
Ground Power	S/S	2004	DIESEL	173	No		Terminal 1	Same	
Ground Power	TRILECTRON	1999	DIESEL	152	No		Terminal 1	Same	
Ground Power	S/S	2004	DIESEL	173	No		Terminal 1	Same	
Ground Power Unit	HOBART	2001	electric		No		44		28V - 37.5KVA - TOWABLE
Ground Power Unit	HOBART	2000	electric		No		44		28V - 45KVA - TOWABLE (MTX)
Ground Power Unit	DAVCO	1999	diesel		No		44		28V - TOWABLE (Avail)
Ground Power Unit	HOBART	2011	electric		No		44		400HZ - 60KVA - TOWABLE
Ground Power Unit	HOBART	2011	electric		No		44		400HZ - 60KVA - TOWABLE
Ground Power Unit	HOBART	2011	electric		No		44		400HZ - 60KVA - TOWABLE
Ground Power Unit	JETWAY SYSTEMS	1985	electric		No		44		400HZ - 90KVA - FACILITY

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Ground Power Unit	TLD AMERICA	2007	DIESEL	240	No		Terminal 5	GSE Shop	
Ground Power Unit	TRILECTRON	1999	DIESEL	200	No		Terminal 5	GSE Shop	
Ground Power Unit	TRILECTRON	2001	DIESEL	200	No		Terminal 5	GSE Shop	
Ground Power Unit	TRILECTRON	2001	DIESEL	152	No		Terminal 5	GSE Shop	
Ground Power Unit	TLD AMERICA	2007	DIESEL	220	No		Terminal 5	GSE Shop	
Ground Power Unit	HOBART	2008	DIESEL		No		Terminal 5	GSE Shop	
Ground Power Unit	HOBART	2010	DIESEL	220	No		Terminal 5	GSE Shop	
Ground Power Unit	HOBART	2010	DIESEL	220	No		Terminal 5	GSE Shop	
Ground Power Unit	Deutz BF6M1013 EC	2006	diesel	190	No		Terminal 1	Terminal 1	
Ground Power Unit	Deutz BF6M1013 EC	2005	diesel	65	No		Terminal 1	Terminal 1	
Ground Power Unit	Hobart	2002	diesel	100	No		Gate 23	Next to Gate 23	
Ground Power Unit	TLD	2009	diesel		No				
Ground Power Unit	TLD	2009	diesel		No				
Ground Power Unit	TLD	2009	diesel		No				
Ground Power Unit	TLD	2009	diesel		No				
Ground Power Unit	TLD	2012	diesel	155	No				
Ground Power Unit	tld	2009	diesel		No		remote pad	CAS maint area	used on the remote pad for all RON aircraft
Ground Power Unit	Other	1984	Diesel	145	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	Other	2003	Diesel	217	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	AGCO	2003	Diesel	174	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	Other	2003	Diesel	98	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	DEUTZ-AG	2005	Diesel	218	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	DEUTZ-AG	2005	Diesel	218	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	DEUTZ-AG	2005	Diesel	218	NO		Tibit, T3, T6	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Ground Power Unit	Arvico	2000	Diesel	116	No		DHL Ramp / HG1	DHL Ramp / HG1	
Ground Power Unit	Arvico	2000	Diesel	152	No		DHL Ramp / HG1	DHL Ramp / HG1	
Ground Power Unit	Arvico	2000	Diesel	152	No		DHL Ramp / HG1	DHL Ramp / HG1	
Ground Power Unit	HOBRT	2008	Diesel	170	No				
Ground Power Unit	HOBRT	2008	Diesel	170	No				
Ground Power Unit	HOBRT	2008	Diesel	170	No				
Ground Power Unit	HOBRT	2008	Diesel	170	No				
Ground Power Unit	HOBRT	2008	Diesel	170	No				
Ground Power Unit	HOBRT	2001	Diesel	168	No				
Ground Power Unit	HOBRT	1999	Diesel	165	No				

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Ground Power Unit	Cummins	2006	Diesel	173			Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	
Ground Power Unit	stemco	1980	diesel		No		n/a	gse yard	non performing asset red tagged not in service
Ground Power Unit	arvco	2007	diesel		no		n/a	gse yard	non performing asset red tagged not in service
Ground Power Unit	TLD	2007	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Ground Power Unit	TLD	2007	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Ground Power Unit	davco	2000	diesel		No		TBIT,ICC	ICC, MAINT YARD	
Ground Power Unit	Hobart	2010	diesel	155	No		Southpad ramp	Pacific Air Cargo	8 hours per day 2 days per week
Ground Power Unit	HOBART	2001	diesel		NO		RAMP	RAMP	
Ground Power Unit	HOBART	2004	diesel		NO		RAMP	RAMP	
Ground Power Unit	CUMMINS	2003	diesel	240	No		ICC		
Ground Power Unit	CUMMINS	2006	diesel	217	No		ICC		
Ground Power Unit	CUMMINS	2007	diesel	104	No				
Ground Power Unit	CUMMINS	2008	diesel	220	No				
Ground Power Unit	CUMMINS	2008	diesel	302	No				
Ground Power Unit	CUMMINS	2008	diesel	302	No				
Ground Power Unit	CUMMINS	2010	diesel	220	No		KOREA WH		
Ground Power Unit	Hobart	1995	Diesel	386	No		ICC Cargo Ramp	Air Freight Building	
Ground Power Unit	TUGTECH	2008	diesel		No		Terminal 2	Terminal 2	
Ground Power Unit	TUGTECH	2008	diesel		No		Terminal 2	Terminal 2	
Ground Power Unit	TUGTECH	2008	diesel		No		Terminal 2	Terminal 2	
Ground Power Unit	TUGTECH	2008	diesel		No		Terminal 2	Terminal 2	
Ground Power Unit	SkyWest	2007	diesel	132	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our Ground Power Units usually are used around 100 hours per YEAR.
Ground Power Unit	SkyWest	2008	diesel	99	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop. Our Ground Power Units usually are used around 100 hours per YEAR.
Ground Power Unit	Hobart	1995	Diesel		No		South Pads	NCA Cargo Building	
Ground Power Unit	Deutz	1999	diesel	119					
Ground Power Unit	Deutz	1999	diesel	194					
Ground Power Unit	Deutz	1996	diesel	194					
Ground Power Unit	Deutz	1999	diesel	194					
Ground Power Unit	Deutz	1999	diesel	194					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Ground Power Unit	Deutz	1999	diesel	194					
Ground Power Unit	Deutz	1996	diesel	194					
Ground Power Unit	Cummins	2010	diesel	220					
Ground Power Unit	Cummins	2010	diesel	220					
Ground Power Unit	Cummins	2012	diesel	305					
Ground Power Unit	Deutz	1997	diesel	184					
Ground Power Unit	Cummins	2008	diesel	325					
Ground Power Unit	Deutz	2000	diesel	181					
Ground Power Unit	Deutz	2000	diesel	181					
Ground Power Unit	Cummins	2001	diesel	260					
Ground Power Unit	Cummins	2011	diesel	220					
Ground Power Unit	Cummins	2008	diesel	217					
Ground Power Unit	Cummins	2011	diesel	220					
Ground Power Unit	Cummins	2009	diesel	220					
Ground Power Unit	Trilectron	1997	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	
Ground Power Unit	TLD	2006	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	
HIGH SPEED TUG	TUG INC	1992	LPG		No		40 thru 46		Horsepower ratings are not recorded in or system
HIGH SPEED TUG	TUG INC	2000	LPG		No		40 thru 46		Horsepower ratings are not recorded in or system
HIGH SPEED TUG	TUG INC	2000	LPG		No		40 thru 46		Horsepower ratings are not recorded in or system
HIGH SPEED TUG	TUG INC	2000	LPG		No		40 thru 46		Horsepower ratings are not recorded in or system
HIGH SPEED TUG	TUG INC	2000	LPG		No		40 thru 46		Horsepower ratings are not recorded in or system
HIGH SPEED TUG	TUG INC	2000	LPG		No		40 thru 46		Horsepower ratings are not recorded in or system
HIGH SPEED TUG	Deutz	2011	diesel	65	No		Terminal 1	Terminal 1	
HIGH SPEED TUG	Deutz	2011	diesel	54	No		Terminal 1	Terminal 1	
HIGH SPEED TUG	Deutz	2011	diesel	65	No		Terminal 1	Terminal 1	
HIGH SPEED TUG	Deutz	2011	diesel	120	No		Terminal 1	Terminal 1	
HIGH SPEED TUG	Deutz	2011	diesel	46	No		Terminal 1	Terminal 1	
HIGH SPEED TUG	Deutz	2011	diesel	155	No		Terminal 1	Terminal 1	
HIGH SPEED TUG	Deutz	2011	diesel	155	No		Terminal 1	Terminal 1	
HPU	AMERICAN LABS	2005	Electric		No		Terminal 1	Same	
Hydrant Truck	E3	1999	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2001	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2003	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2004	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2004	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2005	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	E3	2005	electric	96 VOLT	No				EC-6-02; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	BOSSERMAN	2008	electric	96 VOLT	No				31F; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	BOSSERMAN	2008	electric	96 VOLT	No				31F; electric hydrant carts designed specifically for fueling aircraft

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Hydrant Truck	BOSSERMAN	2011	electric	96 VOLT	No				31F; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	BOSSERMAN	2011	electric	96 VOLT	No				31F; electric hydrant carts designed specifically for fueling aircraft
Hydrant Truck	HUTCHINSON	1981	electric	97 VOLT	No				Electric hydrant carts designed specifically for fueling aircraft
JETPOWER-TRLR	JETWAY	1999	Electric		No		Terminal 1	Same	
Lavatory Truck	Ford, 300 4.9 CSG649	1993	gasoline		Yes		Terminal 1	Terminal 1	light duty truck; On road equivalent
Lavatory Truck	Ford, 5.4L	2002	gasoline		Yes		Terminal 1	Terminal 1	light duty truck; On road equivalent
Lavatory Truck	Ford, 5.4L	2002	gasoline		Yes		Terminal 1	Terminal 1	light duty truck; On road equivalent
Lavatory Truck	LIFT A LOFT APV/LAV	2001	GAS						LSU206
Lavatory Truck	PNX-TL600	2005	GAS						LSU777
Lavatory Truck	FORD/STINAR	2000	GAS	328	No		Terminal 1	Same	
Lavatory Truck	FORD/WOLLARD	1990	GAS	107	No		Terminal 1	Same	
Lavatory Truck	STINAR	1991	gasoline		No		44		Horsepower ratings are not recorded in or system
Lavatory Truck	STINAR	1991	gasoline		No		44		Horsepower ratings are not recorded in or system
Lavatory Truck	TLD	2000	gasoline		No		44		Horsepower ratings are not recorded in or system
Lavatory Truck	FORD	1999	GAS		No		Terminal 5	GSE Shop	
Lavatory Truck	FORD	2006	GAS		No		Terminal 5	GSE Shop	
Lavatory Truck	EVI	1999	electric		No		44		Horsepower ratings are not recorded in or system
Lavatory Truck	Vestergaard	2011	diesel	210	No		Hangar	Hangar	
Lavatory Truck	Vestergaard	2011	diesel	210	No		Hangar	Hangar	
Lavatory Truck	Vestergaard	2011	diesel	210	No		Hangar	Hangar	
Lavatory Truck	Vestergaard	2011	diesel	210	No		Hangar	Hangar	
Lavatory Truck	FORD	1994	Diesel	49	NO		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Lavatory Truck	INTERNATIONAL	2008	diesel	325	No		TBIT		
Lavatory Truck	FORD	1982	diesel	170	No		ICC		
Lavatory Truck	FORD	1998	gasoline	95	No				
Lavatory Truck	FORD	1996	gasoline	95	No				
Lavatory Truck	PERKINS	2007	diesel	51	No				
Lavatory Truck	GM	2008	diesel	250	No				
Lavatory Truck	NMC/WOLLA	1999	diesel		Yes		Terminal 2	Storage by 96th St	Light duty truck

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Lavatory Truck	NMC/WOLLA	1998	diesel		Yes		Terminal 2	Storage by 96th St	Light duty truck
Lavatory Truck	PHOENIX	2008	diesel		Yes		Terminal 2	Storage by 96th St	Light duty truck
Lavatory Truck	Charlatte	2006	electric		No		Terminal 8 and 7, any gate and at the United lav trichulator	Terminal 8 and 7.	All service performed at Continental Hangar, SkyWest GSE shop.
Lavatory Truck	Charlatte	2007	electric		No		Terminal 8 and 7, any gate and at the United lav trichulator	Terminal 8 and 7.	All service performed at Continental Hangar, SkyWest GSE shop.
Lavatory Truck	Charlatte	2007	electric		No		Terminal 8 and 7, any gate and at the United lav trichulator	Terminal 8 and 7.	All service performed at Continental Hangar, SkyWest GSE shop.
Lavatory Truck	NVSTR	1997	diesel						
Lavatory Truck	NVSTR	1997	diesel						
Lift	JLH - Ford Engine	1999	LPG	66	No		ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	LPG = Liquid Propane Gas
Lift	Ford	2001	gasoline		No				
Lift	Ford	2011	gasoline		No				
Lift	Genie	2009	electric		No				
Lift	Genie	2012	electric		No				
Lift	FORD	1991	diesel	180	No		JAL Cargo	JAL Cargo	
Lift	CHEVY	2000	gasoline	285	Yes	Yes	JAL Cargo	11160 Hindry Ave	Light duty truck
Lift	FORD	1998	diesel	180	Yes		JAL Cargo	JAL Cargo	Light duty truck
Lift	F750/Tesco	2011	diesel		No		Bay 344, 345	7001 W Imperial Highway	Aircraft Maintenance use
Lift	Ford250/Tesco	2012	gasoline		Yes	Yes	7001 West Imperial	7001 West Imperial	Aircraft Maintenance use
Lift	Lift a Loft	2007	diesel	88	No		Terminal 8 and 7, any gate or at remote box	Terminal 8 and 7, any gate or at remote box	All service performed at Continental Hangar, SkyWest GSE shop.
Lift	NVSTR	2000	diesel						
Lift	NVSTR	2000	diesel						
Lift	NVSTR	2000	diesel						
Lift	NMC	2007	electric	54					
Lift	JLG	2001	electric	114					
Lift	JLG	2004	electric	114					
Lift	JLG	2004	electric	114					
Lift	TESCO	2000	diesel	210					
Lift	WOLLD	1989	diesel	114					
Lift	LIFTA	2001	diesel	83					
Lift	JLGXX	1997	gasoline						
Lift	SNORK	1991	gasoline						
Lift	SNORK	1992	gasoline						
Lift	SNORK	1997	gasoline						
Lift	JLGXX	1998	gasoline						
Lift	COCHR	1961	gasoline						

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Lift	JLGXX	1997	LPG						
Lift	JLGXX	1997	LPG						
Lift	JLGXX	1998	electric						
Lift	JLGXX	1998	electric						
Lift	JLGXX	1995	LPG						
Lift	GROVE	1988	LPG	25					
Lift	JLG	2001	Electric	114					
Lift	JLG	2007	Electric	114					
Lift	JLG	2007	Electric	114					
Lift	FORDX	1993	diesel						
Lift	WASP	2001	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Elevator Lift Platform - ALTED
Lift	WASP	1999	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Elevator Lift Platform - ALTED
Lift	WASP	2006	diesel		No		UPS Cargo Ramp	UPS Cargo Ramp	Elevator Lift Platform - ALTED
LIFT TRUCK	NMC-WOLLARD	1999	DIESEL	45	No		Terminal 1	Same	
LIFT TRUCK	NMC-WOLLARD	2000	DIESEL	45	No		Terminal 1	Same	
LIFT TRUCK	MOTREC	2004	Electric		No		Terminal 1	Same	
LIFTING JACK	GRAY		electric		No		GSE shop		Horsepower ratings are not recorded in or system
LIGHT CART	BOSS CHAMBERS	2004	DIESEL	46	No		Terminal 1	Same	
LIGHT TOWER		1994	DIESEL		No		Terminal 5	GSE Shop	
LIGHT TOWER		1994	DIESEL		No		Terminal 5	GSE Shop	
LIGHT TOWER	COLEMAN ENGINEERING	1996	DIESEL		No		Terminal 5	GSE Shop	
MAIN DECK LOADER	LANTIS 929-224	1999	DIESEL						MDL802
MAINTENANCE BOOM	JLG	1997	ELEC		No		Terminal 5	GSE Shop	
MAINTENANCE BOOM	JLG	1998	LP		No		Terminal 5	GSE Shop	
MAINTENANCE LIFT	Ford, 1.1 L VSG411	2001	gasoline		No		Terminal 1	Terminal 1	
MAINTENANCE LIFT	Ford, 2.3L	2005	gasoline		No		Terminal 1	Terminal 1	
MAINTENANCE LIFT	Zenith 2.8L	2011	gasoline		No		Terminal 1	Terminal 1	
MAINTENANCE LIFT	FORD	1968	LPG	95					
MAINTENANCE LIFT	FORD	1969	LPG	95					
MAINTENANCE LIFT (MTX)	SNORKEL	1990	electric		No		44		Horsepower ratings are not recorded in or system
MAINTENANCE LIFT (MTX)	RAMCI	1990	electric		No		44		Horsepower ratings are not recorded in or system
MAINTENANCE LIFT-TRUCK (MTX)	TAYLOR-DUNN	1975	electric		No		44		Horsepower ratings are not recorded in or system
MANAGER PICKUP TRUCK-SWEPCO 7/30/12	FORD	1999	gasoline		Yes		Gates 40 thru 46		Light duty truck

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
MINI BUS	CHEVROLET	1998	DIESEL	280	NO		ICC 1-10	AEROUNION YARD	ALSO TRAVELS TO TOM BRADLEY
MINI VAN	CHRYSLER	1997	gasoline	195	NO		ICC 1-10	AEROUNION YARD	ALSO TRAVELS TO TOM BRADLEY
MISC ELEC CART	TEXTRON INDUSTRIES	1995	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TEXTRON INDUSTRIES	1995	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TEXTRON INDUSTRIES	1995	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TEXTRON INDUSTRIES	1995	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TAYLOR DUNN	2001	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TAYLOR DUNN	2001	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TAYLOR DUNN	2000	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TAYLOR DUNN	2000	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	TEXTRON INDUSTRIES	1995	Electric		No		Terminal 5	GSE Shop	
MISC ELEC CART	CLUB CAR	0	Electric		No		Terminal 5	GSE Shop	
MOBILE VEH LIFT	STERTIL/KONI	1999	Electric		No		Terminal 1	Same	
MOBILE VEH LIFT	STERTIL/KONI	1999	Electric		No		Terminal 1	Same	
MOBILE VEH LIFT	STERTIL/KONI	1999	Electric		No		Terminal 1	Same	
MOBILE VEH LIFT	STERTIL/KONI	1999	Electric		No		Terminal 1	Same	
MTC LIFT TRUCK	FORD	1991	DIESEL		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	FORD	1991	DIESEL		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	WOLLARD	1998	DIESEL		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	WOLLARD	2000	DIESEL		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	WOLLARD	2000	DIESEL		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	FORD	1997	GAS		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	FORD	1990	GAS		No		Terminal 5	GSE Shop	
MTC LIFT TRUCK	FORD	2001	GAS		No		Terminal 5	GSE Shop	
Other	New Gem	2013	electric	25	Yes	Yes	all terminals	APS Cargo	Passenger car
Other	ct&e	2009	electric	25	Yes	No	all terminals	APS Cargo	Passenger car
Other	ct&e	2009	electric	25	Yes	No	all terminals	APS Cargo	Passenger car
Other	Ford	1999	gasoline			Yes			
Other	Ford	1999	gasoline			Yes			
Other	Ford	2000	gasoline			Yes			
Other	Ford	2005	gasoline			Yes			
Other	Ford	2006	gasoline			Yes			
Other	Ford	2006	gasoline			Yes			
Other	Ford	2006	gasoline			Yes			
Other	Ford	2006	gasoline			Yes			
Other	Ford	2007	gasoline			Yes			
Other	Ford	2000	gasoline	82	Yes	Yes	Terminal	Terminal	Light duty truck
Other	Jeep	1998	gasoline	180	Yes	Yes	Auto Shop	Auto Shop	Passenger car
Other	Dodge	1996	gasoline	107	Yes	Yes	Auto Shop	Auto Shop	Passenger car
Other	Ford	1995	gasoline	82	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	1994	gasoline	161	Yes	Yes	Cargo	Cargo	Light duty truck

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other	Dodge	1998	gasoline	97	Yes	Yes	Cargo	Cargo	Passenger car
Other	Dodge	1998	gasoline	97	Yes	Yes	Cargo	Cargo	Passenger car
Other	Ford	1993			Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	2003	gasoline	140	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	2000	gasoline	82	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Dodge	1999	gasoline	97	Yes	Yes	Cargo	Cargo	Passenger car
Other	Ford	1998	gasoline	220	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	2001	gasoline	140	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	2001	gasoline	107	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	2001	gasoline	173	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	1999	gasoline	107	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	1998	gasoline	220	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	1997	gasoline	107	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	1995	gasoline	82	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	1993	gasoline	82	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Ford	1996	gasoline	82	Yes	Yes	Cargo	Cargo	Light duty truck
Other	Chevorlet	1987	gasoline	174	Yes	Yes	Auto Shop	Auto Shop	Passenger Car
Other	Ford	1979	gasoline	100	Yes	No	Auto Shop	Auto Shop	Light duty truck
Other	GM	1999	gasoline	174	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	1998	gasoline	173	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	1989	gasoline		Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	GM	1990	gasoline	140	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	2001	gasoline	173	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	2001	gasoline	173	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	2006	gasoline	161	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	2001	gasoline	107	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Ford	2000	gasoline	161	Yes	Yes	Auto Shop	Auto Shop	Light duty truck
Other	Plymouth	2000	gasoline	125	Yes	Yes	Auto Shop	Auto Shop	Passenger Car
Other	Ford	2000	gasoline		Yes	Yes	Terminal	Terminal	Light Duty Truck
Other	Plymouth	2000	gasoline		Yes	Yes	Terminal	Terminal	Passenger Car
Other	Chrysler	2001	gasoline	125	Yes	Yes	Terminal	Terminal	Passenger Car
Other	Chevy	1988	gasoline		Yes	Yes	Terminal	Terminal	Light Duty Truck
Other	BMCXX	1996	Diesel	130	No				
Other	BMCXX	1996	Diesel	130	No				
Other	FORD E-350 VAN	2007	gasoline	255	Yes	Yes	6701 W IMP HWY	6701 W IMPERIAL HWY	EMPLOYEE BUS-USED TO P/UP EMP AT REMOTE PARKING
Other	FORD F-600	1987	gasoline	230	Yes	Yes	6701 W IMP HWY	6701 W IMPERIAL HWY	USED FOR TRUCK MAINTENANCE
Other	FORD F-250	1995	gasoline	150	Yes	Yes	6701 W IMP HWY	6701 W IMPERIAL HWY	USED FOR TRUCK MAINTENANCE
Other	FORD F250	2005	gasoline	300	Yes	Yes	6701 W IMP HWY	6701 W IMPERIAL HWY	USED FOR MAINTENANCE DEPARTMENT

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other	DODGE CARAVAN	2000	gasoline	158	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SAFETY VAN
Other	FORD RANGER	2000	gasoline	119	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	FORD E-350 VAN	2007	gasoline	255	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	FORD FREESTAR	2007	gasoline	201	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	FORD RANGER	2000	gasoline	119	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	FORD FREESTAR	2007	gasoline	201	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	FORD WINDSTAR	2001	gasoline	200	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	BUICK LACROSSE	2005	gasoline	200	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	FORD TAURUS	2005	gasoline	153	Yes	No	AOA RAMP/GATES	6701 W IMPERIAL HWY	SUPPORT VEH
Other	CHRSYLER JEEP	2012	gasoline	202	Yes	Yes	STREET-NO FIELD	6701 W IMPERIAL HWY	STREET SIDE VEHICLE
Other	CHRSYLER CARAVAN	2012	gasoline	283	Yes	Yes	STREET-NO FIELD	6701 W IMPERIAL HWY	STREET SIDE VEHICLE
Other	FORD	1995	gasoline	195	Yes	Yes	JAL Cargo, TBIT, Term. 2	11160 Hindry Ave	
Other	FORD	1995	gasoline	195	Yes	Yes	Terminal 2	Terminal 2	
Other	Tiger		diesel		No	Yes	TBIT,ICC	MAINT yard	None performing asset redtagged to be 86
Other	FORD	2006	gasoline		Yes	Yes	TBIT,ICC	ICC, MAINT YARD	passenger van
Other	FORD	2000	gasoline		Yes	Yes	AOA	office	passenger van
Other	FORD	2001	gasoline		Yes	Yes	AOA	office	passenger van
Other	FMC	1981	diesel		No	No	RAMP	RAMP	
Other	FMC	1994	diesel		No	No	RAMP	RAMP	
Other	TLD	2001	diesel		No	No	RAMP	RAMP	
Other	TLD	2002	diesel		No	No	RAMP	RAMP	
Other	TLD	2007	diesel		No	No	RAMP	RAMP	
Other	GENIE	2004	gasoline		No	No	RAMP/WAREHOUSE	W/H	
Other	Nissan Sentra	2009	Gasoline	122	Yes	Yes	T2, TBIT, Remote Ramp	T2	Passenger car
Other	Nissan Sentra	2009	gasoline	122	Yes	Yes		T2	Passenger car
Other	Deutz	2001	diesel	73	No		KOREA WH		
Other	Deutz	2001	diesel	73	No		KOREA WH		
Other	Deutz	2001	diesel	73	No		KOREA WH		
Other	Deutz	2008	diesel	100	No		KOREA WH		
Other	FORD	1999	diesel		No		Airport wide	HANGER 1	
Other	Dodge	1999	gasoline		No		Airport wide	HANGER 1	
Other	MERCEDEZ	2005	diesel	250	No		Airport wide	E-13	
Other	GM	1994	gasoline		No		Airport wide	HANGER 1	
Other	Dodge	2000	gasoline		Yes		Airport wide	HANGER 1	Light duty truck
Other	GM	1998	gasoline		No		TERMINALS 3 AND 6	HANGER 1	
Other	FORD	2003	gasoline	112	No		Airport wide		
Other	FORD	2004	gasoline	112	No		Airport wide	HANGER 1	
Other	FORD	2003	gasoline	112	No		Airport wide		
Other	FORD	2010	gasoline	115	Yes		Airport wide		Passenger car
Other	FORD	2009	gasoline		Yes		Airport wide		Passenger car
Other	FORD	2000	gasoline	130	Yes		ICC	LAX248	Passenger car
Other	FORD	1999	gasoline	150	Yes		ICC	LAX237	Passenger car

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other	FORD	2006	gasoline		Yes		ICC	LAX249	Light duty Truck
Other	FORD	1995	gasoline		Yes		KOREA WH	KOREA WARE	Light duty truck
Other	FORD	1995	gasoline		Yes				Light duty truck
Other	FORD	1995	gasoline		No		Airport wide	HANGER 1	
Other	FORD	1985	gasoline	122	No		HANGER 1	HANGER 1	
Other	FORD	1999	gasoline		Yes		Airport wide		Light duty truck
Other	FORD	2005	gasoline	175	Yes		Airport wide		Light duty truck
Other	FORD	2005	gasoline	175	Yes		Airport wide		Light duty truck
Other	FORD	2003	gasoline	225	Yes		Airport wide		Light duty truck
Other	FORD	2002	gasoline	112	Yes		Airport wide		Light duty truck
Other	FORD	2003	gasoline	112	Yes		Airport wide		Light duty truck
Other	FORD	2006	gasoline	112	Yes		Airport wide		Light duty truck
Other	FORD	1998	gasoline	260	Yes		Airport wide		Light duty truck
Other	FORD	1999	gasoline	260	Yes		Airport wide		Light duty truck
Other	FORD	2003	gasoline	260	Yes		Airport wide		Light duty truck
Other	FORD	1997	gasoline	260	Yes		Airport wide		Light duty truck
Other	Dodge	1997	gasoline	235	Yes		Airport wide	LAX248	Light duty truck
Other	Dodge	1994	gasoline	245	Yes		Airport wide	LAX249	Light duty truck
Other	Dodge	1999	gasoline	235	Yes		Airport wide	LAX237	Light duty truck
Other	FORD	2005	gasoline	420	Yes		Airport wide		
Other	Transact	1985	Diesel		No	No	South Pads	NCA Cargo Building	Cargo Transporter
Other	TLD	2001	Diesel		No	No	South Pads	NCA Cargo Building	Cargo Transporter
Other	Transact	1985	Diesel		No	No	South Pads	NCA Cargo Building	Cargo Transporter
Other	FMC	2005	Diesel		No	No	South Pads	NCA Cargo Building	Cargo Transporter
Other	TLD	2001	Diesel		No	No	South Pads	NCA Cargo Building	Cargo Transporter
Other	NVSTR	1995	diesel			No			
Other	AMLAB	1998	electric			No			
Other	INGRN	2001	diesel			No			
Other	INGRN	2001	diesel			No			
Other	TAYDN	2001	electric			No			
Other	TAYDN	2001	electric			No			
Other	TENNT	1999	electric			No			
Other	CANNO	1999	electric			No			
Other	WASP	1989	gasoline		No	No	UPS Cargo Ramp	UPS Cargo Ramp	towable, non-driveable, Container Sort Platform
Other	WASP	1990	gasoline		No	No	UPS Cargo Ramp	UPS Cargo Ramp	towable, non-driveable, Container Sort Platform
Other	WASP	1998	diesel		No	No	UPS Cargo Ramp	UPS Cargo Ramp	towable, non-driveable, Container Sort Platform
Other	WASP	2012	gasoline		No	No	UPS Cargo Ramp	UPS Cargo Ramp	towable, non-driveable, Container Sort Platform
Other	AGCO	2003	Diesel	0	NO		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	Light stands

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	Chevy	2000	gasoline	300	no		ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	truck with man-lift operated by vehicle battery, no separate power supply
Other ORE	Ford	2001	gasoline	235	Yes	Yes	ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	plated
Other ORE	Ford	1988	gasoline	145	Yes	Yes	ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	plated passenger car
Other ORE	Ford	2004	gasoline	193	Yes	Yes	ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	plated passenger car
Other ORE	Grumm	1998	diesel	250	No		ABX Air/DHL Express Cargo Ramp	ABX Air/DHL Building	Aircraft maintenance Van
Other ORE	TOYOTA	2009	gasoline	159	Yes	Yes	all terminals	APS Cargo	Light duty Truck
Other ORE	TOYOTA	2009	gasoline	159	Yes	Yes	Aeromexpress Cargo	Aeromexpress Cargo	Light duty Truck
Other ORE	TOYOTA	2010	gasoline	195	Yes	Yes	APS Cargo	BY GATE 106	Light duty Truck
Other ORE	Nissan	2003	gasoline	143	Yes	Yes	all terminals	APS Cargo	Light duty Truck
Other ORE	Kia	2005	gasoline	195	Yes	Yes	remote gates and TBIT gates	TBIT	Passenger car
Other ORE	Hyundai	2005	gasoline	104	Yes	Yes	all terminals	TBIT	Passenger car
Other ORE	Hyundai	2008	gasoline	250	Yes	Yes	Aeromexpress Cargo	APS Cargo	Passenger car
Other ORE	JEEP	2011	gasoline	130	Yes	Yes	RAMP	T2	Light duty Truck
Other ORE	CHRYSLER	2008	gasoline	90	Yes	Yes	RAMP	T2	Passenger car
Other ORE	CHRYSLER	2008	gasoline	90	Yes	Yes	RAMP	T2	Passenger car
Other ORE	TOYOTA COROLLA	2010	gasoline	110	Yes	Yes	RAMP	T2	Passenger car
Other ORE	NISSAN CUBE	2012	gasoline	85	Yes	Yes	RAMP	T2	Passenger car
Other ORE	FORD 150 VAN	2001	gasoline	125	Yes	Yes	RAMP	CARGO BLDG	Light duty truck
Other ORE	Jeep	2009	gasoline	210	Yes	Yes			Passenger car; Model: Grand Cherokee
Other ORE	Jeep	2006	gasoline	210	Yes	Yes			Passenger car; Model:Grand Cherokee
Other ORE	Jeep	2006	gasoline	210	Yes	Yes			Passenger car; Model: Grand Cherokee
Other ORE	Jeep	2006	gasoline	210	Yes	Yes			Passenger car; Model: Grand Cherokee
Other ORE	Ford	1993	gasoline	160	Yes	Yes			Mini van
Other ORE	Honda CR-V EX (2010)		diesel		Yes	Yes	Ramp	Outside Airport	Honda CRV car used for business in and out the airport
Other ORE	Ford	2005	gasoline		Yes	Yes	Cargo Ramp/Terminal Ramp	Delta Cargo Lot	Passenger car
Other ORE	Chevy	2009	gasoline		Yes	Yes	Cargo Ramp/Terminal Ramp	Delta Cargo Lot	Passenger car
Other ORE	Dodge	2011	gasoline		Yes	Yes	Cargo Ramp/Terminal Ramp	Delta Cargo Lot	Passenger car
Other ORE	Ford	2012	gasoline		Yes	Yes	Cargo Ramp/Terminal Ramp	Delta Cargo Lot	Passenger car
Other ORE	Chevy	2009	gasoline		Yes	Yes	FedEx Cargo Ramp	FedEx Parking Lot	Passenger car
Other ORE	Ford	2010	gasoline		Yes	Yes	TBIT	TBIT	Passenger car
Other ORE	Chevy	2004	gasoline		Yes	Yes	Terminal Ramp Area	Terminal 4	Passenger car

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	Chevy	2009	gasoline		Yes	Yes	Terminal Ramp Area	Terminal 4	Passenger car
Other ORE	Ford	2000	Gasoline		Yes	Yes		DHL Parking Lot	
Other ORE	Ford	2001	Gasoline		Yes	Yes		DHL Parking Lot	
Other ORE	Ford	2004	Gas	120	Yes	Yes	Terminal 6 / West Remote Gates	Between Gate 65A & 65B - Terminal 6	Van
Other ORE	CHEVY	2005	gasoline	285	Yes	Yes	JAL Cargo & Term. 2	11160 Hindry Ave	
Other ORE	FORD	2006	gasoline	225	Yes	Yes	Terminal 2	11160 Hindry Ave	
Other ORE	FORD	2010	gasoline	136	Yes	Yes	JAL Cargo, TBIT, Term. 2	11160 Hindry Ave	
Other ORE	FORD	1993	gasoline	135	Yes	Yes	Terminal 2	11160 Hindry Ave	
Other ORE	CHEVY	1984	gasoline	210	Yes	Yes	JAL Cargo & ICC	JAL Cargo	
Other ORE	FORD	1997	diesel	180	Yes	Yes	TBIT & Remotes	11160 Hindry Ave	
Other ORE	GMC	2000	gasoline	200	Yes	Yes	South Pads	11160 Hindry Ave	
Other ORE	CHEVY	1984	gasoline	210	Yes	Yes	JAL Cargo	JAL Cargo	
Other ORE	Chrysler Town Country	2006	gasoline		Yes	Yes	TBIT /Remote Gates	Gate 120 TBIT	Passenger car; 3.3 L 6 Cyl Lic Plate 8J82177
Other ORE	Chrysler Town Country	2006	gasoline		Yes	Yes	TBIT /Remote Gates	Gate 120 TBIT	Passenger car; 3.3 L 6 Cyl Lic Plate 8J82176
Other ORE	Dodge Caravan	2004	gasoline		Yes	Yes	TBIT /Remote Gates	Gate 120 TBIT	Passenger car; 3.3 L 6 Cyl Lic Plate 8J81962
Other ORE	Ford	2000	gasoline		Yes	Yes	TBIT/Remote Gates	Gate 119 TBIT	Passenger car; 3.3 L 6 Cyl Lic Plate 4MRZ716
Other ORE	Nissan Frontier	2003	gasoline		Yes	Yes	TBIT/Remote Gates	Gate 119 -120	Passenger car; 3.3 L 6 Cyl Lic Plate 8j82263
Other ORE	Chevrolet	1999	gasoline		Yes	Yes	T2 /Remote Gates	T2	Passenger car; 3.3 L 6 Cyl Lic Plate 6GNR694
Other ORE	Ford	2004	gasoline	300	Yes	Yes	Terminal2,Remote	off airport	This is a street legal vehicle (light duty truck) used on AOA
Other ORE	ISUZU	2010	diesel	200	Yes		Gate 1 thru 69		
Other ORE	ISUZU	2008	diesel	200	Yes		Gate 1 thru 69		
Other ORE	FORD	2002	diesel	112	Yes		Gate 1 thru 69		
Other ORE	FORD	1995	gasoline	112	No		Gate 1 thru 69		
Other ORE	FORD	1994	gasoline	112	No		Gate 1 thru 69		
Other ORE	FORD	1994	gasoline	112	Yes		Gate 1 thru 69		
Other ORE	FORD	1992	gasoline	300	No		Gate 1 thru 69		
Other ORE	CHEVY	2003	gasoline	190	Yes		Gate 1 thru 69		
Other ORE	CHEVY	2002	gasoline	190	Yes		Gate 1 thru 69		
Other ORE	FORD	2002	gasoline	202	Yes		Gate 1 thru 69		
Other ORE	CHEVY	2001	gasoline	193	No		Gate 1 thru 69		
Other ORE	CHEVY	2001	gasoline	193	No		Gate 1 thru 69		
Other ORE	CHEVY	2000	gasoline	193	No		Gate 1 thru 69		
Other ORE	FORD	1987	gasoline	112	No		Gate 1 thru 69		
Other ORE	CHEVY	2000	gasoline	193	No		Gate 1 thru 69		

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	CHEVY	2000	gasoline	193	No		Gate 1 thru 69		
Other ORE	DODGE	2008	gasoline	283	No		Gate 1 thru 69		
Other ORE	DODGE	2000	gasoline	283	No		Gate 1 thru 69		
Other ORE	FORD	1998	gasoline	200	No		Gate 1 thru 69		
Other ORE	CHEVY	1995	gasoline	210	No		Gate 1 thru 69		
Other ORE	CHEVY	1990	gasoline	193	No		Gate 1 thru 69		
Other ORE	FORD	2011	gasoline	225	Yes		Gate 1 thru 69		
Other ORE	DODGE	2011	gasoline	283	Yes		Gate 1 thru 69		
Other ORE	DODGE	2012	gasoline	283	Yes		Gate 1 thru 69		
Other ORE	DODGE	2012	gasoline	283	Yes		Gate 1 thru 69		
Other ORE	DODGE	2012	gasoline	283	Yes		Gate 1 thru 69		
Other ORE	FORD	1992	gasoline		No		REMOTE	REMOTE	
Other ORE	Ford	2001	Gasoline	185	No	Yes	Air Freight Building	Air Freight Building	White Ford truck (Ranger)
Other ORE	CHRYSTLER	2007	gasoline	205	Yes	Yes			Passenger car; Town & Country
Other ORE	GMC	2007	gasoline		Yes	Yes	7001 West Imperial	7001 West Imperial	Aircraft Maintenance use
Other ORE	Honda	2008	gasoline		Yes	Yes	7001 West Imperial	7001 West Imperial	Aircraft Maintenance use
Other ORE	Honda	2008	gasoline		Yes	Yes	7001 West Imperial	7001 West Imperial	Aircraft Maintenance use
Other ORE	F150	2006	gasoline		Yes	Yes	7001 West Imperial	7001 West Imperial	Aircraft Maintenance use
Other ORE	Chevy	2005	gasoline		Yes	Yes	7001 West Imperial	7001 West Imperial	Aircraft Maintenance use
Other ORE	Ford	2002	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Light duty truck; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	2002	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Light duty truck; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	2004	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Light duty truck; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	2001	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Light duty truck; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	2007	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Light duty truck; All service performed at Continental Hangar, SkyWest GSE shop.

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	Ford	1997	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Passenger car; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	1998	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Passenger car; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	1997	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Light duty truck; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	Ford	2000	gasoline		Yes	Yes	Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	Passenger car; All service performed at Continental Hangar, SkyWest GSE shop.
Other ORE	BROWN	1997	diesel			No			
Other ORE	WARDX	1978	diesel			No			
Other ORE	GMCXX	1997	diesel			No			
Other ORE	GILLG	1998	diesel			No			
Other ORE	FORDX	1998	diesel			No			
Other ORE	GILLG	1999	diesel			No			
Other ORE	FORDX	2005	diesel			No			
Other ORE	FORD	2001	diesel	210		No			
Other ORE	FORDX	2008	gasoline			No			
Other ORE	FORDX	2008	gasoline			No			
Other ORE	NVSTR	2007	gasoline			No			
Other ORE	JLG	2001	LPG	89		No			
Other ORE	JLG	2008	Electric	114		No			
Other ORE	FORDX	2011	gasoline			No			
Other ORE	CHAMP	1995	gasoline			No			
Other ORE	CHAMP	1995	gasoline			No			
Other ORE	FORDX	1984	gasoline			No			
Other ORE	GMCXX	1993	gasoline			Yes			
Other ORE	FORDX	1989	gasoline			Yes			
Other ORE	FORDX	1996	gasoline			Yes			
Other ORE	FORDX	1996	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	GMCXX	1997	gasoline			Yes			
Other ORE	DODGE	1999	gasoline			Yes			

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	DODGE	1999	gasoline			Yes			
Other ORE	FORDX	1998	gasoline			Yes			
Other ORE	FORDX	1998	gasoline			Yes			
Other ORE	FORDX	1998	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1991	gasoline			Yes			
Other ORE	FORDX	2006	gasoline			Yes			
Other ORE	FORDX	2008	gasoline			Yes			
Other ORE	FORDX	2013	gasoline			Yes			
Other ORE	FORDX	1999	CNG			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	2000	CNG			Yes			
Other ORE	FORDX	2000	CNG			Yes			
Other ORE	FORDX	2000	CNG			Yes			
Other ORE	FORDX	2000	CNG			Yes			
Other ORE	FORDX	2000	gasoline			Yes			
Other ORE	FORDX	2000	CNG			Yes			
Other ORE	FORDX	2001	gasoline			Yes			
Other ORE	FORDX	2012	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1995	gasoline			Yes			
Other ORE	FORDX	1995	gasoline			Yes			
Other ORE	FORDX	1988	gasoline			Yes			
Other ORE	GMCXX	1989	gasoline			Yes			
Other ORE	GMCXX	1990	gasoline			Yes			
Other ORE	FORDX	1992	gasoline			Yes			
Other ORE	GMCXX	1993	gasoline			Yes			
Other ORE	FORDX	1996	gasoline			Yes			
Other ORE	FORDX	1996	gasoline			Yes			
Other ORE	FORDX	1996	gasoline			Yes			
Other ORE	FORDX	1996	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			
Other ORE	FORDX	1997	gasoline			Yes			

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	GMCXX	1997	gasoline			Yes			
Other ORE	GMCXX	1997	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	1999	CNG			Yes			
Other ORE	FORDX	1999	CNG			Yes			
Other ORE	FORDX	1999	CNG			Yes			
Other ORE	FORDX	1999	CNG			Yes			
Other ORE	FORDX	2000	gasoline			Yes			
Other ORE	FORDX	2000	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	FORDX	2000	gasoline			Yes			
Other ORE	FORDX	2000	gasoline			Yes			
Other ORE	FORDX	2001	gasoline			Yes			
Other ORE	FORDX	2001	gasoline			Yes			
Other ORE	FORDX	2001	gasoline			Yes			
Other ORE	FORDX	2001	CNG			Yes			
Other ORE	FORDX	2001	CNG			Yes			
Other ORE	FORDX	2006	gasoline			Yes			
Other ORE	FORDX	2013	gasoline			Yes			
Other ORE	FORDX	2013	gasoline			Yes			
Other ORE	FORDX	1999	gasoline			Yes			
Other ORE	GMCXX	1987	gasoline			No			
Other ORE	GMCXX	1987	gasoline			No			
Other ORE	GMCXX	1988	gasoline			No			
Other ORE	FORDX	2012	gasoline			No			
Other ORE	FORDX	2012	gasoline			No			
Other ORE	GMCXX	1996	gasoline			No			
Other ORE	Ford	1997	gasoline		Yes	Yes	UPS Cargo Ramp	UPS Cargo Ramp	Passenger car
Other ORE	Ford	1997	gasoline		Yes	Yes	UPS Cargo Ramp	UPS Cargo Ramp	Employee Shuttle
Other ORE	Ford	1976	gasoline		Yes	Yes	UPS Cargo Ramp	UPS Cargo Ramp	Employee Shuttle
Other ORE	Ford	1979	gasoline		Yes	Yes	UPS Cargo Ramp	UPS Cargo Ramp	Employee Shuttle
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	320	No	no			Co-buses
Other ORE	CUMMINS	2006	CNG	280	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Cummins	1996	DIESEL	370	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other ORE	Mercedes-Benz AG	1996	DIESEL	136	No	no			Co-buses
Other-ORE	Ford Crown Victoria	2011	gasoline	240	No		At All Airfield Gates/Cargo/Private Aircraft Facilities	Terminal 2, Gate 21A	DHS-266002 Marked CBP Vehicle, GSE Category-Other-ORE, Passenger Vehicle, Gasoline
Other-ORE	Ford Explorer	2006	gasoline	210	No		At All Airfield Gates/Cargo/Private Aircraft Facilities	TBIT West, Gate 136	DHS-229787 Marked CBP Vehicle, GSE Category-Other-ORE, Passenger Vehicle, Gasoline
Other-ORE	Ford F450XL Tool Truck	2011	diesel	370	No		At All Airfield Gates/Cargo/Private Aircraft Facilities	Atlantic Aviation Private Aircraft Facility	DHS-229811 Marked CBP Vehicle, GSE Category-Other-ORE, Passenger/Utility Truck (Tool Truck), Diesel
Other-ORE	FECXX	1994	Electric	100	No				
Other-ORE	AAIAC	1999	Electric	100	No				
Other-ORE	AMLAS	1999	Electric	100	No				
Other-ORE	ford	E150 2010	gasoline		Yes		ramp	office off airport	Passenger car
Other-ORE	ford	escape 2011	gasoline		Yes		ramp	office off airport	Passenger car
PALLET LOADER	FMC COMMANDER	1999	DIESEL						LDL650
PALLET LOADER	FMC COMMANDER	2002	DIESEL						LDL650
PALLET LOADER	LANTIS TLC818-144	1999	GAS						LDL642
PALLET LOADER	LANTIS TLC818-144	1999	GAS						LDL641

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
PALLET LOADER	LANTIS TLC818-144	1999	GAS						LDL639
PALLET LOADER	LANTIS TLC818-144-125	1999	GAS						LDL645
PALLET LOADER	LANTIS TLC818-144	1999	GAS						LDL649
PALLET LOADER	FMC COMMANDER	1997	DIESEL						LDL633
PALLET LOADER	TLD 828	2006	DIESEL						LDL657
PARTS/BURDEN	GEM	2003	Electric		No		Terminal 1	Same	
PARTS/BURDEN	GEM	2003	Electric		No		Terminal 1	Same	
PARTS/BURDEN	GEM	2003	Electric		No		Terminal 1	Same	
PARTS/BURDEN	GEM	2004	Electric		No		Terminal 1	Same	
PARTS/BURDEN	TAYLOR DUNN	1985	Electric		No		Terminal 1	Same	
PARTS/BURDEN	GEM	2000	Electric		No		Terminal 1	Same	
Passenger Stairs	Deutz, F4M1011F	2002	diesel	155	No		Terminal 1	Terminal 1	
Passenger Stand	Wollard	1967	gasoline	165	No		Hangar	Hangar	
Passenger Stand	TLD	1986	electric	173	No		Hangar	Hangar	
Passenger Stand	Wollard	1988	gasoline	173	No		Hangar	Hangar	
Passenger Stand	Ford	2000	gasoline	173	No		Hangar	Hangar	
Passenger Stand	AGCO	1989	Diesel	180	No		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Passenger Stand	FORD	2004	Diesel	25	No		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Passenger Stand	FORD	1992	gasoline		No		TBIT,ICC	ICC, MAINT YARD	Portable stair truck
Passenger Stand	NOROCO	1974	gasoline		No		RAMP	RAMP	
Passenger Stand	STINAR	2001	gasoline		No		RAMP	RAMP	
Passenger Stand	WOLLD	1999	diesel	52					
Passenger Stand	WOLLD	1999	diesel	52					
Passenger Stand	FMCXX	2000	diesel	56					
Passenger Stand	WOLLD	1994	gasoline						
Passenger Stand	NORDC	1983	LPG	120					
PASSENGER STEPS	FORD	1976	gasoline		No		Terminal 5	GSE Shop	
PASSENGER STEPS	FORD	1986	gasoline		No		Terminal 5	GSE Shop	
PASSENGER STEPS	FORD	2011	gasoline	385	No		Terminal 5	GSE Shop	
PASSENGER STEPS	PHOENIX METAL PRODUCTS INC	2011	gasoline	-	No		Terminal 5	GSE Shop	
PASSENGER STEPS	FORD	2011	gasoline	385	No		Terminal 5	GSE Shop	
PASSENGER VAN	FORD	1990	gasoline	107	No		Terminal 1	Same	
PASSENGER VAN	FORD	1998	gasoline	295	No		Terminal 1	Same	
PASSENGER VAN	FORD	2001	gasoline	260	No		Terminal 1	Same	
PASSENGER VAN	FORD	1990	gasoline	225	No		Terminal 1	Same	
PASSENGER VAN	FORD	1990	gasoline	107	No		Terminal 1	Same	
PASSENGER VAN	FORD	2011	gasoline	260	No		Terminal 1	Same	
PAY MOVER	HOUGH	1986	DIESEL	340	No		ICC 1-10	AEROUNION YARD	
PAY MOVER	HOUGH	1986	DIESEL	340	No		ICC 1-10	AEROUNION YARD	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
PAY MOVER	HOUGH T500	1999	DIESEL						ATC905
PAY MOVER	TUG GT110	2000	DIESEL						ATC909
PAY MOVER	TUG GT110	2004	DIESEL						ATC910
PCA-GPU	DAVCO	1999	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2001	electric		No		44		Horsepower ratings are not recorded in or system
PCA-GPU	DAVCO	2000	electric		No		44		Horsepower ratings are not recorded in or system
Pickup truck	FORD	1980	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1986	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1986	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1986	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1988	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1991	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1997	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1998	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1998	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1998	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1998	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1999	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1999	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1999	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	CHEVROLET	1990	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1997	gasoline		No		Terminal 5	GSE Shop	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Pickup truck	FORD	1989	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	2003	gasoline		Yes		Terminal 5	GSE Shop	
Pickup truck	FORD	2001	gasoline		Yes		Terminal 5	GSE Shop	
Pickup truck	FORD	2001	gasoline		Yes		Terminal 5	GSE Shop	
Pickup truck	FORD	1989	gasoline		Yes		Terminal 5	GSE Shop	
Pickup truck	FORD	1992	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	1997	gasoline		Yes		Terminal 5	GSE Shop	
Pickup truck	FORD	1992	gasoline		No		Terminal 5	GSE Shop	
Pickup truck	FORD	2011	gasoline	385	Yes		Terminal 5	GSE Shop	Light duty truck
Pickup truck	FORD	2011	gasoline	385	Yes		Terminal 5	GSE Shop	Light duty truck
Pickup truck	FORD	2011	gasoline	360	Yes		Terminal 5	GSE Shop	Light duty truck
Pickup truck	FORD	2011	gasoline	385	Yes		Terminal 5	GSE Shop	Light duty truck
Pickup truck	FORD	2011	gasoline	411	Yes		Terminal 5	GSE Shop	Light duty truck
Pickup truck	FORD F150	2005	gasoline						PUT278
Pickup truck	FORD F150	2008	gasoline						PUT279
Pickup truck	Chevrolet, 5.7L	1991	gasoline		Yes		GSE	GSE	On road equivalent
Pickup truck	Ford, 5.4L	1998	gasoline		Yes		Terminal 1	Terminal 1	On road equivalent
Pickup truck	Ford, 460 C.I.D.	1975	gasoline		Yes		Cargo	Cargo	On road equivalent
Pickup truck	Chevrolet 6.0 vortec	2003	gasoline		Yes		GSE	GSE	On road equivalent
Pickup truck	Ford, 5.4L	2003	gasoline		Yes		Terminal 1	Terminal 1	On road equivalent
Pickup truck	Ford, 4.2L	2008	gasoline		Yes		Provisioning	Provisioning	On road equivalent
Pickup truck	Ford, 5.4L	2005	gasoline		Yes		Terminal 1	Terminal 1	On road equivalent
Pickup truck	Chevrolet, Vortec 2.9L I4	2010	gasoline		Yes		Terminal 1	Terminal 1	On road equivalent
Pickup truck	Chevrolet 6.0 vortec	2012	gasoline		Yes		GSE	GSE	On road equivalent
Pickup truck	Chevrolet, 4.8	2012	gasoline		Yes		Cargo	Cargo	On road equivalent
Pickup truck	FORD	1990	gasoline	100	No		Terminal 1	Same	
Pickup truck	CHEVROLET	1984	gasoline	260	No		Terminal 1	Same	
Pickup truck	FORD	1990	gasoline	350	No		Terminal 1	Same	
Pickup truck	FORD	1999	gasoline	260	No		Terminal 1	Same	
Pickup truck	FORD	2001	gasoline	260	No		Terminal 1	Same	
Pickup truck	FORD	2012	gasoline	302	No		Terminal 1	Same	
Pickup truck	FORD	1987	gasoline	107	No		Terminal 1	Same	
Pickup truck	FORD	2001	gasoline	260	No		Terminal 1	Same	
Pickup truck	TOYOTA	2004	gasoline	142	No		Terminal 1	Same	
Pickup truck	FORD F150	1995	gasoline						PUT274
Pickup truck	FORD F150	1998	gasoline						PUT276
Pickup truck	FORD F150	2001	gasoline						PUT272
PICKUP TRUCK	FORD	1998	gasoline		Yes		Gates 40 thru 46		(MTX) Swepco 8/15/12
PICKUP TRUCK	FORD	2004	gasoline		Yes		Gates 40 thru 46		(MTX) Swepco 8/15/12
PICKUP TRUCK	CHEVROLET	1991	gasoline		Yes		Gates 40 thru 46		(MTX) Swepco 9/20/12
PICKUP TRUCK	FORD	2003	gasoline		Yes		Gates 40 thru 46		(MTX)-Swepco installed 7/2/12

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
PLATFORM LIFT	JLG	2012	Electric		No		Terminal 1	Same	
PLATFORM LIFT	JLG	2012	Electric		No		Terminal 1	Same	
PLATFORM LIFT	JLG	2012	Electric		No		Terminal 1	Same	
PLATFORM LIFT	JLG	2012	Electric		No		Terminal 1	Same	
PLATFORM LIFT	JLG	2012	Electric		No		Terminal 1	Same	
PLATFORM LIFT (MTX)	MAYVILLE-MEC	1990	Electric		No		44		Horsepower ratings are not recorded in or system
POTABLE WATER CART	PHOENIX METAL	2002	Electric		No		44		Horsepower ratings are not recorded in or system
Provision truck	Mitsubishi, 6D16T4	1992	diesel	155	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	Mitsubishi, 6D16T4	1992	diesel	155	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1994	diesel	136	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1994	diesel	136	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1994	diesel	136	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1994	diesel	136	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1994	diesel	136	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1994	diesel	136	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1995	diesel	155	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1995	diesel	155	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	MitsubishI, 6D31	1995	diesel		Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	Mitsubishi, 300 C.I.D.	1995	diesel	155	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	Mitsubishi 4.899Turbo	2005	diesel	145	Yes		Provisioning	Provisioning	To be replaced with onroad 2012 gasoline engine
Provision truck	Zenith, 4.4L	2012	gasoline		Yes		Provisioning	Provisioning	
PSGR ELEC CART	TEXTRON INDUSTRIES	1988	ELEC		No		Terminal 5	GSE Shop	
PSGR ELEC CART	CLUB CAR	2010	ELEC		No		Terminal 5	GSE Shop	
PSGR ELEC CART	CLUB CAR	2010	ELEC		No		Terminal 5	GSE Shop	
PSGR ELEC CART	CLUB CAR	2010	ELEC		No		Terminal 5	GSE Shop	
Pushback	FMC	2000	Diesel	185	No		DHL Ramp / HG1	DHL Ramp / HG1	
Pushback	FMC	2000	Diesel	185	No		DHL Ramp / HG1	DHL Ramp / HG1	
Pushback	GE	2009	electric		No		Terminal 1	Terminal 1	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Pushback	GE	2009	electric		No		Terminal 1	Terminal 1	
Pushback	GE	2009	electric		No		Terminal 1	Terminal 1	
Pushback	GE	2009	electric		No		Terminal 1	Terminal 1	
Pushback	GE	2009	electric		No		Terminal 1	Terminal 1	
Pushback	Cummins, 3.3	1991	diesel	155	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Cummins, 3.3	1993	diesel	65	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Cummins, 3.3	1994	diesel	-	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Cummins, 3.3	1986	diesel	-	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Cummins, 3.3	1992	diesel	175	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Cummins, 3.3	1990	diesel	218	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Detroit, 353T	1990	diesel	218	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Cummins, 3.3	1989	diesel	110	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	Deutz, TD 2012-L04-2V	2011	diesel	325	No		Terminal 1	Terminal 1	Must have several diesel powered engines for emergencies and to accommodate RON aircraft
Pushback	JETLINE	1990	DIESEL	110	No		Terminal 1	Same	
Pushback	S/S	1986	DIESEL	99	No		Terminal 1	Same	
Pushback	S/S	1978	DIESEL	99	No		Terminal 1	Same	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Pushback	S/S	1984	DIESEL	99	No		Terminal 1	Same	
Pushback	S/S-TUG	2004	DIESEL	87	No		Terminal 1	Same	
PUSHBACK TRACTOR	LEKTRO	1999	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR	LEKTRO	1999	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR	LEKTRO	1999	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR	LEKTRO	1999	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR	LEKTRO	2011	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR	LEKTRO	2001	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR	LEKTRO	2001	electric		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR (MTX)	TUG INC	1975	gasoline		No		44		Horsepower ratings are not recorded in or system
PUSHBACK TRACTOR (MTX)	LEKTRO	2005	electric		No		44		Horsepower ratings are not recorded in or system
QC MAINTENANCE VAN (MTX) SWEPCO 6/29/12	CHEVROLET	2008	gasoline		Yes				Passenger car; Horsepower ratings are not recorded in or system
RAMP PASSENGER VAN-Swepco 9/1/12	CHEVROLET	1988	gasoline		Yes				Passenger car; Horsepower ratings are not recorded in or system
RAMP PICKUP TRUCK	FORD	1991	gasoline		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
RAMP PICKUP TRUCK	CHEVROLET	1999	gasoline		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
RAMP PICKUP TRUCK (SevCo Oil 10/10/2012)	FORD	1999	gasoline		No		Gates 40 thru 46		Horsepower ratings are not recorded in or system
RANGER Swepco	FORD	2000	gasoline		Yes		GSE shop/Gate 40thur46		Light duty truck; 8/9/2012
RECTIFIER (DFW)	HOBART	1992	electric		No		44		Horsepower ratings are not recorded in or system
RECTIFIER (DFW)	HOBART	1993	electric		No		44		Horsepower ratings are not recorded in or system
RECTIFIER (DFW)	HOBART	2002	electric		No		44		Horsepower ratings are not recorded in or system
REFUELER	GARSITE 1200 GAL ISUZU		DIESEL						GFU001
REGIONAL BOARDING RAMP (RBR) 44E	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
REGIONAL BOARDING RAMP (RBR) 44B	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44C	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44D	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44F	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44G	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44H	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44I	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
REGIONAL BOARDING RAMP (RBR) 44J	EIAS	2011	electric		No		44		Horsepower ratings are not recorded in or system
Roll Back	International, DT466E	1999	diesel	-	No		Terminal 1	Terminal 1	
ROLLBACK TRUCK	FORD	2005	diesel		Yes		GSE shop/Gate 40thur46		Horsepower ratings are not recorded in or system
SCRUBBER/SWEEPER	TORNADO	2006	ELEC		No		Terminal 5	GSE Shop	
Service Truck	Ford	2000	gasoline	260	Yes				Model: F250 with Tommy Gate
Service Truck	Ford	1990	diesel	400	Yes				Model: F450 Heavy Duty with Scissor Lift
Service Truck	Ford	1997	gasoline	260	Yes				Model: F250 with High-Lift
Service Truck	Ford	2003	gasoline	260	Yes				Model: F250 Super Duty Tommy Gate
Service Truck	GMC	1988	diesel		Yes				Model: Stepvan (SQ Pax)
Service Truck	GMC	1994	diesel		Yes				Model: Stepvan (SQ Cargo)
Service Truck	Chevrolet	1998	diesel		Yes				Model:Grumman Olson (TG Van)
Service Truck	ford	2006	gasoline		Yes	Yes	t-6, t-5 remote pad	t-6	F250 Ford pickup with a lift gate used to transport tools and store equipment; primarily for aircraft maintenance support
Service Truck	chevy	2002	gasoline		Yes	No	t-6, t-5 remote pad	t-6	Chevy C3500 Van chassis with a full height walk in service body on it used to suport aircraft maintenance at remote locations; remains on the field

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Service Truck	FORD	1992	Diesel	25	No		ICC, Cargo ramps	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Service Truck	FORD	2002	Diesel	25	No		GSE Shop, Cargo ramp	Terminal 3, 6, ICC, cargo ramp, remote, Tibit	
Service Truck	JLGIN	2011	Gasoline	82	No				
Service Truck	JLGIN	2011	Gasoline	82	No				
Service Truck	JLGIN	2008	Diesel	50	No				
Service Truck	JLGIN	2002	Diesel	65	No				
Service Truck	JLGIN	2002	Diesel	65	No				
Service Truck	JLGIN	1997	Gasoline	82	No				
Service Truck	JLGIN	2008	Diesel	62	No				
Service Truck	TESCO	1993	Gasoline	200	No				
Service Truck	LFTAL	2004	LPG	150	No				
Service Truck	CHVRL	2008	Diesel	215	No				
Service Truck	FRGHT	1998	Diesel	240	No				
Service Truck	ISUZU	2006	Diesel	205	No				
Service Truck	TOYOTA	2012	gasoline	187	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Service Truck	TOYOTA	2012	gasoline	159	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Service Truck	TOYOTA	2013	gasoline	187	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Service Truck	TOYOTA	2013	gasoline	159	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Service Truck	TOYOTA	2012	gasoline	159	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Service Truck	TOYOTA	2009	gasoline	159	Yes		TBIT,S.CARGO,R.WEST	CO. PREMISSIS	
Service Truck	CHEVROLET	1998	gasoline		No		AOA	office	maintnace truck
Service Truck	Chevy	1990	gasoline	225	Yes		ICC Ramp	Pacific Air Cargo	8 hours per day 7 days per week
Service Truck	Chevy	1995	diesel	200	Yes		ICC Ramp	Pacific Air Cargo	8 hours per day 7 days per week
Service Truck	FORD	2000	gasoline	360	Yes		Gate 1 thru 69		
Service Truck	FORD	1995	diesel	325	Yes				F350XL
Service Truck	FORD	1999	diesel	325	Yes				F350XL
Service Truck	FORD	1993	diesel	225					F-350
Service Truck	FORD	1997	diesel	300					F-350
Service Truck	FORD	1997	diesel	275					F-350
Service Truck	FORD	1997	diesel	275					F-350
Service Truck	FORD	1997	diesel	300					F-350
Service Truck	FORD	1997	diesel	300					F-350
Service Truck	FORD	2005	diesel	235	Yes				F-250
Service Truck	FORD	2008	diesel	325	Yes				F-350PI
Service Truck	Chevrolet	2000	Gasoline		Yes		South Pads	NCA Cargo Building	Maintenance Van
Service Truck	Toyota	2002	Gasoline		Yes		South Pads	NCA Cargo Building	Pick up truck
Service Truck	Ford	1989	Gasoline		Yes		ICC	Lufthansa Cargo	Van
Service Truck	Ford	2008	Gasoline		Yes		South Pads	NCA Cargo Building	Pick up truck
Service Truck	NVSTR	2000	diesel						

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Service Truck	FORDX	1991	diesel						
Service Truck	FORDX	1990	diesel						
Service Truck	ISUZU	1990	gasoline						
Service Truck	Ford	2002	gasoline		Yes		UPS Cargo Ramp	UPS Cargo Ramp	
SERVICE TRUCK	FORD	2000	GAS	295	No		Terminal 1	Same	
SPORT UTILITY	FORD	1999	GAS		Yes		Terminal 5	GSE Shop	
SPORT UTILITY	FORD	2011	GAS	171	Yes		GSE shop	GSE Shop	
SPORT UTILITY	FORD	2011	GAS	171	Yes		Terminal 5	GSE Shop	
SPORT UTILITY	FORD	2002	GAS	260	Yes		Terminal 5	GSE Shop	
STAIR TRUCK	WOLLARD TLPH252SMT	2003	GAS						PBS420
STAIR TRUCK	STINAR SPS3515	1981	GAS						PBS410
STAIR TRUCK	PHOENIX/FORD PAS200		GAS						PBS413
STAIR UNIT	FORD/WOLLARD	1988	GAS	107	No		Terminal 1	Same	
STAKE BED	FORD	1997	GAS	225	No		Terminal 1	Same	
STATIONARY POWER	KATO ENGINEERING	1988	ELEC		No		Terminal 5	GSE Shop	
STATIONARY POWER	KATO ENGINEERING	1988	ELEC		No		Terminal 5	GSE Shop	
STATIONARY POWER	KATO ENGINEERING	1988	ELEC		No		Terminal 5	GSE Shop	
STATIONARY POWER	KATO ENGINEERING	1988	ELEC		No		Terminal 5	GSE Shop	
STORES PICKUP TRUCK (MTX)	FORD	2000	gasoline		Yes		Gates 40 thru 46	Air Freight 8 Building	Horsepower ratings are not recorded in or system
SUPERTUG	DOUGLAS KALMAR	2008	DIESEL	255	No		Terminal 1	Same	
SWEEPER	TENNANT	2011	LP	23	No		Cargo	GSE Shop	
Sweeper	Power BPSS	1995	Gasoline		No		DHL Ramp / HG1	DHL Ramp / HG1	
Sweeper	AMRLN	1989	Electric	150	No				
Sweeper	TYMCO	1989	Diesel	210	No				
SWEEPER	TENNANT	1989	LPG		No		W/H	W/H	
SWEEPER	TENNANT	2008	LPG		No		W/H	W/H	
Sweeper	GM, 3.0L	2010	LPG		No		Terminal 1	Terminal 1	
Sweeper	TALOR DUNN	1986	electric	55					
Sweeper	EZGO	1978	electric	55					
Sweeper	TALOR DUNN	1989	electric	55					
Sweeper	TALOR DUNN	1998	electric	55					
Sweeper	TALOR DUNN	1998	electric	55					
Sweeper	TALOR DUNN	2003	electric	55					
Sweeper	EZGO	2004	electric	55					
Sweeper	EZGO	1978	electric	55					
Sweeper	TALOR DUNN	1999	electric	55					
Sweeper	TALOR DUNN	1999	electric	55					
Sweeper	WESTINGHOUSE	1967	electric	55					
Sweeper	TALOR DUNN	1979	electric	55					
Sweeper	TALOR DUNN	1978	electric	55					

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Sweeper	TALOR DUNN	1979	electric	55					
Sweeper	TALOR DUNN	1979	electric	55					
Sweeper	TENNT	1999	gasoline						
Sweeper	TENNT	1999	gasoline						
Sweeper	UNK	1987	Electric	138					
TOWBARLESS TOW TRACTOR	TLD AMERICA	2008	DIESEL	304	No		Terminal 5	GSE Shop	
TOWBARLESS TOW TRACTOR	TLD AMERICA	2010	DIESEL	304	No		Terminal 5	GSE Shop	
TOWBARLESS TOW TRACTOR	TLD AMERICA	2010	DIESEL	304	No		Terminal 5	GSE Shop	
TOWBARLESS TOW TRACTOR	TLD AMERICA	2010	DIESEL	304	No		Terminal 5	GSE Shop	
TRUCK	FORD	2001	DIESEL		No		Terminal 5	GSE Shop	
TUG	TUG	1990	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG	1989	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG	1990	gasoline	165	No		1CC 1-10	AEROUNION YARD	
TUG	TUG	1989	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG	2004	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG	2004	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG	2001	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG	2004	gasoline	165	No		ICC 1-10	AEROUNION YARD	
TUG	TUG MA50-1	1999	Propane						BTU429
TUG	TUG MA50	1999	Propane						BTU387
TUG	CLARK MA50	1999	Propane						BTU375
TUG	TUG MA50	1999	Propane						BTU382
TUG	TUG MA50	1999	Propane						BTU388
TUG	TUG MA50	1999	Propane						BTU393
TUG	TUG MA50	1999	GAS						BTU376
TUG	TUG MA50	1999	Propane						BTU395
TUG	TUG	1999	GAS						BTU397
TUG	TUG MA50-1LP	2000	GAS						BTU398
TUG	TUG MA50-1LP	2000	Propane						BTU399
TUG	TUG MA50-1LP	2000	Propane						BTU400
TUG	TUG MA50-1LP	2000	Propane						BTU401
TUG	TUG MA50-1	2000	Propane						BTU654
TUG	TUG MA50-1	2000	Propane						BTU654
TUG	TUG MA50-1	2000	Propane						BTU654
TUG	TUG MA50-1	1984	GAS						BTU344
UTILITY CART (MTX)	TAYLOR-DUNN	1996	electric		No		Eagle Parts		Horsepower ratings are not recorded in or system
VAN	FORD	1999	gasoline		No		GSE shop/Gate 40thur46		Horsepower ratings are not recorded in or system

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
VAN	FORD	2000	CNG		No		Terminal 5	GSE Shop	
VAN	FORD	1991	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	1976	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	1998	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	1998	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	1998	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	1999	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	1999	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	2000	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	2000	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	2000	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	2000	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	2000	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	1985	GAS		Yes		Terminal 5	GSE Shop	
VAN	CHEVROLET	1990	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	2001	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	2001	GAS		Yes		Terminal 5	GSE Shop	
VAN	FORD	1994	GAS		No		Terminal 5	GSE Shop	
VAN	FORD	2011	GAS	225	Yes		Terminal 5	GSE Shop	
VAN	FORD	2011	GAS	225	Yes		Terminal 5	GSE Shop	
VAN	FORD	2011	GAS	225	Yes		Terminal 5	GSE Shop	
VAN	FORD	2011	GAS	225	Yes		Terminal 5	GSE Shop	
Van	Ford, 351 C.I.D.	1992	gasoline		Yes		Provisioning	Provisioning	On road equivalent
Van	Chevrolet, 5.7L	1999	gasoline		Yes		Terminal 1	Terminal 1	On road equivalent
Van	Chevrolet,6.0 L	2010	gasoline		Yes		Provisioning	Provisioning	On road equivalent
VAN	GMC RALLY	1995	GAS						VAN973
VAN	FORD AEROSTAR	1989	Propane						VAN907
VAN	FORD E150	1999	GAS						VAN915
VAN	FORD ECONOLINE	1999	GAS						VAN916
VAN	FORD E150	1997	GAS						VAN212
VAN	GMC STEP VAN	1994	GAS						VAN204
VAN	FORD E150	2006	GAS						VAN969
VAN	FORD E150	2006	GAS						VAN970
VAN	FORD E350	2007	GAS						VAN918
VAN	FORD E350	1998	GAS						VAN908
VAN	FORD E350	2000	GAS						VAN911
VAN	FORD E350	2007	GAS						VAN923
VAN	GMC CHEVY	1978	GAS						VAN971
WATER SERVICE TRUCK	FORD	1999	GAS		No		GSE shop	GSE Shop	
Water Truck	FORD	1998	gasoline		No				
Water Truck	FORD	2008	gasoline		No		ICC		
Water Truck	NMC/WOLLA	1998	diesel		Yes		TBIT	Terminal 2	
Water Truck	PHOENIX	2008	diesel		Yes		Terminal 2	Terminal 2	

GSE Category	Manufacturer	Model Year	Fuel Type	Power (BHP)	ORE	License Plated	Location(s) Where Mostly Used	Location(s) Serviced or Stored When Not In Use	Notes and Comments
Water Truck	Taylor Dunn	2003	electric		No		Terminals 6, 7, and 8 all gates and ramps.	Terminals 6, 7, and 8 all gates and ramps.	All service performed at Continental Hangar, SkyWest GSE shop.
WATER TRUCK	FORD/WOLLARD	1999	GAS	295	No		Terminal 1	Same	
Wheel Chair Lift	GE	2008	electric		No		Terminal 1	Terminal 1	
Wheel Chair Lift	GE	2008	electric		No		Terminal 1	Terminal 1	
WRECKER	FORD	1987	GAS		No		GSE shop	GSE Shop	
WRECKER	FORD	1985	GAS		No		GSE shop	GSE Shop	

Equipment Group	Fuel Type	Number of Units	Notes and Comments
Battery Charger	electric		ID: 58141; Manufacturer: ENERSYS INC; Mostly used at Gate 44
Battery Charger	electric	6	AC Charge 1000 480volts 35 amps 3 phase at ASIg GSE shop
Battery Charger	electric		Charger #3 - Bagroom
Battery Charger	electric		Charger #4 - Bagroom
Battery Charger	electric		Charger #5 - Bagroom
Battery Charger	electric		80 Volt - Roll Around Cart
Battery Charger	electric		Charger #4 - Bagroom
Battery Charger	electric		Cargo
Battery Charger	electric		THIRD FLOOR
Battery Charger	electric		THIRD FLOOR
Battery Charger	electric		53B - Mote
Battery Charger	electric		53B - Mote
Battery Charger	electric		POSICHARGE
Battery Charger	electric		POSICHARGE
Battery Charger	electric		POSICHARGE
Battery Charger	electric		POSICHARGE
Battery Charger	electric		POSICHARGE
Battery Charger	electric		
Battery Charger	electric		
Battery Charger	electric		GSE - SHOP
Battery Charger	electric		BAGROOM CHARGER 6
Battery Charger	electric		GSE SHOP OUTSIDE
Battery Charger	electric		ID: 102198; Manufacturer: Hobart; Year: 2000; Mostly used in T5; Mostly serviced in GSE Shop
Battery Charger	electric		ID: 102199; Manufacturer: Hobart; Year: 2000; Mostly used in T5; Mostly serviced in GSE Shop
Battery Charger	electric	2	Felix 2000 FLX20018750T 1H located DHL N. Warehouse
Battery Charger	electric	2	FER Charger FER100 18-865 TI located DHL N. Warehouse
Battery Charger	electric	4	Exide TGC-40-380 located DHL N. Warehouse
Battery Charger	electric	2	Exide TGC-40-550 located DHL N. Warehouse
Battery Charger	electric	1	Exide W3-18-680 located DHL N. Warehouse
Battery Charger	electric	1	Exide LGF3B12-865-DB-1 located DHL N. Warehouse
Battery Charger	electric	1	Hobart 250CII located DHL N. Warehouse
Battery Charger	electric	1	Pac Chloride GTCII18-865T1 located DHL N. Warehouse
Battery Charger	electric	2	Posi-Charger DVS-150 located DHL S. Warehouse
Battery Charger	electric	9	6 TERMNAL 3, 2 TERMINAL 6, 1 HANGER 1
Battery Charger	electric	4	PosiCharge dual port DVS, on Terminal 8
Battery Charger	electric	1	PosiCharge single port SVS
Battery Charger	electric	2	Workhorse 72 volt Lektro charger Terminal 8

Battery Charger	electric	1	Reaco 36 volt charger
Battery Charger	electric	1	Exide 72 volt charger
Battery Charger	electric	1	IBE 36 volt charger
Battery Charger	electric	10	2 cords on each charger. PosiCharge Chargers at Terminal 1
Battery Charger	electric	48	48 chargers total where 2 chargers have 16 connections, 12 charges have 1 connection, and 34 chargers have 2 connections (total of 112 connections). Located throughout Terminals 6, 7 and 8, Maintenance Hangar 1,West Hanagar, Warehouse,Cargo Facility, and the GSE Maintenance Shop.
Battery Charger	electric	12	EXIDE TCG-40-550B
Battery Charger	electric	4	POSICHARGE DVS-150, 5758 W. Century Blvd
Battery Charger	electric	2	APPLIED ENERGY AES24Y0865X3, 5600 W. Century Blvd
Battery Charger (Avail)	electric		ID: 58528; Manufacturer: Exide; Mostly used at Gate 44
eGSE Charger(s)	electric	1	Battery powered GPU at T6
generators/lights/welders	Gasoline	1	
generators/lights/welders	electric	1	Millermatic 175 located GSE Shop (HG1)
generators/lights/welders	gasoline	1	Lincoln Electric AC-150/45 located GSE Shop (HG1)
generators/lights/welders	gasoline	3	Coleman Portable light sets located DHL Ramp
generators/lights/welders	diesel	13	
generators/lights/welders	gasoline	1	welder &a/c generator 140 amp
generators/lights/welders	gasoline	2	Coleman Powermate 3000
generators/lights/welders	electric	1	
generators/lights/welders	diesel	1	WELDER
generators/lights/welders	electric	3	WELDER
generators/lights/welders	gasoline	2	
generators/lights/welders	gasoline	2	Compressor/Generator for GSE maintenance
other	gasoline	21	
other	electric	23	
other	electric	1	Pushback tractor at T64A&B 5hp
other	gasoline	1	MEC Aerial work platform 18 hp Kohler engine
Other	Electric	1	Golf Cart charged under 24V system
other	gasoline	1	Pressure Washer
pumps/compressors	electric	1	Speedaire 80 Gal 220V located GSE Shop (HG1)
pumps/compressors	gasoline	1	Speedaire 20 Gal located GSE Shop (HG1)
pumps/compressors	gasoline	2	Ridgid Air Compressor 5.5 hp
pumps/compressors	electric	1	
pumps/compressors	electric	6	5 COMPRESSORS INSTALLED IN UNITS, 1 STATIONARY
utility carts	gasoline	2	
utility carts	electric	2	

Appendix C
LAX eletGSE Electric Power Infrastructure Assessment

LAX Electric Power Infrastructure Assessment

September 30, 2013

Project No. 2013.017.00

Prepared for:

Los Angeles World Airports (LAWA)
Facilities Management Group
Environmental Services Division

Prepared by:

PBS ENGINEERS

Glendora | Los Angeles | San Diego
2100 East Route 66, Suite 101, Glendora, CA 91740 | T 626.650.0350 F 626.650.0352
www.pbsengineers.com

TABLE OF CONTENTS

SUB-SECTION C-1 ELECTRIFICATION IMPROVEMENTS

1.1 ELECTRICAL SUMMARY

The Ground Service Equipment (GSE) at the Terminal/Cargo/RON utilizes electrical vehicles to support the aircraft at the various gates/positions. This Section 1.1 describes the field survey that was performed at the airline facilities, how the findings from the field survey were utilized to determine the conceptual design, and what major components were focused on during the design process.

1.1.1 Field Survey

Extensive field survey was conducted from February through April, 2013, which consisted of visual, non-destructive observations, and consultation with LAWA and airline representatives via multiple interviews at the site. Each area was surveyed in detail to identify the location of existing battery chargers and supporting electrical distribution equipment. The main purposes of the field survey were to perform the following tasks:

a. Study the condition, capacity and structure of the existing electrical systems. In addition, observation of any code violations and outdated electrical equipment was identified.

b. Record the accurate number and configuration of the aircraft parking positions and associated gates, and existing battery chargers' rating and conditions. Each area was surveyed in detail to identify the location of the battery chargers and the supporting electrical distribution equipment. Each unit was photographed and identified on a plan to understand its geographic location.

c. Understand the ground service equipment requirement at site and make note of the scenarios of what size of battery charging stations will be provided based on the various aircraft mix.

1.1.2 Conceptual Design

After the utilities at each Terminal/Airline Facility were assessed to understand their feasibility to support the GSE electrification project, load calculations based on these layouts were performed to understand the potential utility needs and equipment sizing. Electric meter recordings, specifically the maximum peak demand readings in the last twelve (12) months, received from LAWA and airlines, i.e., tenants, were reviewed for confirmation and comparison purposes to ensure that all calculations are verified and justified. The GSE battery chargers are served by the normal branch of the electrical distribution system.

Based on the analysis from the findings to support the electrification program, the existing main switchboards at the Terminal/Airline facilities are to be re-used, replaced or upgraded. For all cargo facilities and RON parking, except for those switchboards that are to remain for re-use, all existing switchboards that require replacement or upgrade will be replaced or upgraded under the 400Hz Electrification Project which is a separate project. In addition, new switchboards are required to be installed at certain Terminals.

a. Re-using Existing Switchboards

The existing switchboards at some Terminals/Airline facilities have enough capacity to accommodate the additional battery charger loads. As these switchboards have only been recently installed and since they are still in good condition, they can be re-used and only new circuit breakers are required to be added.

b. Replacing Existing Switchboards

The existing switchboards at some Terminals/Airline facilities have enough capacity to accommodate the additional battery charger loads. However, due to old age, poor physical conditions or code violations, these switchboards shall be replaced with new switchboards of the same rating, i.e., 1-to-1 replacement.

c. Upgrading Existing Switchboards

The existing switchboards at some Terminals/Airline facilities do not have adequate capacity to accommodate the additional battery charger loads in addition to the existing load. Therefore, these switchboards shall be upsized with new switchboards of higher current ratings, i.e., higher amperage.

From the existing or new switchboards which are to be utilized for accommodating the additional battery charger loads and 400Hz electrification loads, new above-ground feeders (from the switchboards to the exterior of the buildings) and new underground feeders. plus pull boxes (from the exterior of the buildings and on), shall be installed to supply 480-Volt power up to the new disconnect switches or electrical outlets. All the electrical components from the aforementioned switchboards to these electrical termination points shall be considered as the "electrical infrastructure" of the design.

From the disconnect switches or electrical outlets, i.e., at the end of the electrical infrastructure, either 30KW, 40KW or 80KW charging stations can be utilized to support the GSE operations. The requirement of the battery chargers at each gate/position of the Airline facility was provided by LAWA. Description and explanation of the 30KW, 40KW and 80KW charging station units can be found in the next section. It shall be LAWA's ultimate decision to determine which solution to adopt at each airline facility.

An electrical summary has been attached to indicate exactly what electrical components are required at each airline facility to support this electrification project.

1.2 ELECTRIFICATION METHODS

Most of the Terminals/Cargos employ existing battery chargers to support their GSE operations. The existing battery chargers are manufactured by Load Hog Charger, Cobra Charger and PosiCharge. Based on analysis and conversations with LAWA, the base assumption for electrification analysis is that all existing chargers would be phased out and new charging stations would be provided at each gate/position according to the base needs provided by LAWA.

For costing purposes, a second scenario was considered, whereby existing and approved smart chargers remain in place, thereby reducing the need for additional/new chargers at those gates/positions. This second scenario was considered only for potential cost reductions; the electrical infrastructure and charger analysis presented below assumes the base scenario whereby all existing chargers are phased out.

1.2.1 The following describes three (3) options for GSE charging stations that were considered in the electrification methods analysis. The options are described in terms of PosiCharge equipment (for discussion purposes only) and do not represent a commitment, express or implied, at this time by LAWA to utilize only PosiCharge equipment. The selection of charging station equipment would be determined in conjunction with detailed engineering, design and bidding procedures in accordance with LAWA requirements.

a. <u>Option 1 – 80KW-MVS800 PosiCharge Battery Charging Station with 10 Charging Ports</u>

The MVS PowerServer, also known as the Next Generation Power Server (NGPS), is a simple, robust rectifier-based power supply which connects directly to the electric utility grid. It provides required DC power for up to eight PowerStations, the independent charging stations used in the PosiCharge MVS Fast Charging System. This system is highly-efficient and it can simultaneously charge up to 16 vehicles at one time. Power shall be fed from the building switchboard to a fixed mounted disconnect switch, which then feeds a MVS800 Power Server and MVS Power Station which will be mounted on the ground/apron. Bollards shall be installed around the battery charging station for protection from traffic.

Refer to the cut sheets and installation manual provided in Attachment 1 to this appendix for more information.

b. Option 2 – 40KW-MVS400 PosiCharge Battery Charging Station with 4 Charging Ports

The MVS PowerServer, also known as the Next Generation Power Server (NGPS), is a simple, robust rectifier-based power supply which connects directly to the electric utility grid. It provides required DC power for up to eight PowerStations, the independent charging stations used in the PosiCharge MVS Fast Charging System. This system is highly-efficient and it can simultaneously charge up to 8 vehicles at one time. Power shall be fed from the building switchboard to a fixed mounted disconnect switch, which then feeds a MVS400 Power Server and MVS Power Station which will be mounted on the ground/apron. Bollards shall be installed around the battery charging station for protection from traffic.

Refer to the cut sheets and installation manual provided in Attachment 1 to this appendix for more information.

c. Option 3 – 30KW-DVS300 PosiCharge Battery Charging Station with 2 Charging Ports

This charging station configuration does not require a Power Server. This is an affordable stand-alone solution for small or remote fleets. Power shall be fed from the building switchboard to a fixed mounted disconnect switch, which then feeds a DVS300 Charging Station which will be mounted on the ground/apron. Bollards shall be installed around the Battery Charging Station for protection from traffic.

Refer to the cut sheets and installation manual provided in Attachment 1 to this appendix for more information.

1.3 FACILITIES ELECTRIFICATION IMPROVEMENTS

This Section 1.3 provides detailed description regarding the current GSE electrification status at all the Terminal Gates and Parking Positions and the suggested GSE electrification method which is the most suitable at each Terminal Gate and Parking Position of each Airline, depending on its type of operation, runway traffic in the proximity area and the existing electrical infrastructure.

TERMINAL

1.3.1 Terminal 1

a. Existing Condition

There are currently fifteen (15) terminal gates at the site and are identified as Gate Numbers 1, 2, 3, 4A, 4B, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14. Terminal 1 employs twenty (20) battery chargers to support their GSE operations.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
1	NHB	277/480 V	400 A
2	NHF	277/480 V	400 A
3	BAT-2	277/480 V	225 A

The units are manufactured by Cobra Charger and PosiCharge. The Cobra Charger units are functional; however, the physical condition indicates that they are near the end of their useful life.

Refer to the attached Existing Condition Drawing T1-E21 for more information.

b. Proposed Design

The existing electrical panel NHB, 400-Amp, 480/277-Volt serving existing battery chargers located on the east wall of the building on ramp level has enough capacity and shall be re-utilized to feed four (4) new 40KW MVS400 Charging Station Units at Gate Numbers 7, 9, 11 and 13.

The existing electrical panel NHF, 400-Amp, 480/277-Volt serving existing battery chargers located on the east wall of the building on ramp level has enough capacity and shall be re-utilized to feed four (4) new 40KW MVS400 Charging Station Units at Gate Numbers 1, 2, 3 and 4A.

The existing electrical panel BAT-2, 225-Amp, 480/277-Volt serving existing battery chargers located on the northwest wall of the building on ramp level has enough capacity and shall be re-utilized to feed three (3) new 40KW MVS400 Charging Station Units at Gate Numbers 10, 12 and 14.

However, due to old age and its current poor condition, a replacement 225-Amp panel for BAT-2 shall be installed at the same location.

Existing Distribution Board MSA-2, 2000-Amp, 480/277-Volt located in the main Electrical Room shall be utilized to feed the four (4) 40KW MVS400 Charging Station Units at Gate Numbers 4B, 5, 6 and 8.

See attached Drawing T1-E01 and T1-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.2 Terminal 2

a. Existing Condition

There are currently ten (10) terminal gates at the site and are identified as Gate Numbers 21, 21B, 22, 23, 24, 24A, 25, 26, 27 and 28. There are currently no battery chargers at this facility. Refer to the attached Existing Condition Drawing T2-E21 for more information.

b. Proposed Design

The new panels 2DPHB, 2DPHC, 2DPHD and 2DPHE for new battery charging stations shall be provided under T-2 Electrical Upgrade Project (LAWA Project No. C-LAX-11654).

The electrical panel 2DPHB, 800-Amp, 480/277-Volt located on the ramp level shall be utilized to feed the three (3) 80KW MVS800 Charging Station Units at Gate Numbers 24, 26 and 28.

The electrical panel 2DPHE, 400-Amp, 480/277-Volt fed by panel 2DPHB located on the ramp level shall be utilized to feed the one (1) 80KW MVS800 Charging Station Unit at Gate Number 22 and one (1) 40KW MVS400 Charging Station Unit at Gate Number 24A.

The electrical panel 2DPHC, 800-Amp, 480/277-Volt located on the ramp level shall be utilized to feed the two (2) 80KW MVS800 Charging Station Units at Gate Numbers 25 and 27.

The electrical panel 2DPHD, 400Amp, 480/277-Volt fed by panel 2DPHC located on the ramp level shall be utilized to feed the two (2) 80KW MVS800 Charging Station Unit at Gate Numbers 21 and 23 and one (1) 40KW MVS400 Charging Station Unit at Gate Number 21B.

See attached Drawing T2-E01 and T2-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.3 Terminal 3

a. Existing Condition

There are currently twelve (12) terminal gates at the site and are identified as Gate Numbers 30, 31A, 31B, 32, 33A, 33B, 34, 35, 36, 37A, 37B and 38.

Terminal 3 employs two (2) battery chargers to support their GSE operations. The units are manufactured by Ametek and are old. Refer to the attached Existing Condition Drawing T3-E21 for more information. The source information of these chargers could not be verified in the field and is unknown.

b. Proposed Design

Currently there is a spare 2500-Amp, 480/277-Volt circuit breaker from LAWA Main-4 with Meter No. PMYV229-1498 available and shall be utilized to feed the new switchboard.

The new switchboard D-BC, 2500-Amp, 480/277-Volt shall be provided through a bus duct from LAWA Main-4 source. D-BC shall be utilized to feed the three (3) 80KW MVS800 Charging Station Units at Gate Numbers 35, 37A and 38 and two (2) 40KW MVS400 Charging Station Units at Gate Numbers 36 and 37B.

The electrical panel D-BC1, 800-Amp, 480/277-Volt fed by switchboard D-BC located on the ramp level shall be utilized to feed the two (2) 80KW MVS800 Charging Station Units at Gate Numbers 31A and 34 and five (5) 40KW MVS400 Charging Station Units at Gate Numbers 30, 31B, 32, 33A and 33B.

See attached Drawing T3-E01 and T3-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.4 Terminal 4

a. Existing Condition

There are currently thirteen (13) terminal gates at the site and are identified as Gate Numbers 40, 41, 42A, 42B, 43, 45, 46A, 46B, 47A, 47B, 48A, 48B and 49B. Terminal 4 employs thirty five (35) battery chargers to support their GSE operations.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
1	PB1	277/480 V	800 A
2	PB2	277/480 V	600 A
3	PB3	277/480 V	800 A
4	PB1B	277/480 V	600 A

The units are manufactured by Cobra Charger and are very old. Refer to the attached Existing Condition Drawing T4-E21 for more information.

b. Proposed Design

The existing electrical panel PB1, 800-Amp, 480/277-Volt serving existing battery chargers located on the ramp level has enough capacity and shall be re-utilized to feed the one (1) 80KW MVS800 Charging Station Unit at Gate Number 42B and one (1) 40KW MVS400 Charging Station Unit at Gate Number 42A. However, due to old age and its poor condition, a replacement 800-Amp panel for PB1 shall be installed at the same location.

The existing electrical panel PB1B, 600-Amp, 480/277-Volt serving existing battery chargers located on the ramp level fed by panel PB1 has enough capacity and shall be re-utilized to feed the one (1) 80KW MVS800 Charging Station Unit at Gate Number 45 and one (1) 40KW MVS400 Charging Station Unit at Gate Number 47A. However, due to old age and its poor condition, a replacement 600-Amp panel, for PB1B, shall be installed at the same location.

The existing electrical panel PB3, 800-Amp, 480/277-Volt serving existing battery chargers located on the ramp level has enough capacity and shall be re-utilized to feed the four (4) 80KW MVS800 Charging Station Units at Gate Numbers 46A, 48B, 47B and 49A and two (2) 40KW MVS400 Charging Station Units at Gate Numbers 46B and 48A. However, due to old age and its poor condition, a replacement 800-Amp panel, for PB3, shall be installed at the same location.

See attached Drawing T4-E01 and T4-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.5 Terminal 5

a. Existing Condition

There are currently thirteen (13) terminal gates at the site and are identified as Gate Numbers 50B, 51A, 51B, 52A, 53A, 53B, 54A, 54B, 55A, 56, 57, 58 and 59. Terminal 5 employs eleven (11) battery chargers to support their GSE operations.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
1	2HA8	277/480 V	225 A
2	3HPA6	277/480 V	800 A

There are two (2) main banks of chargers at the terminal. One (1) bank near Gate Number 51 has a row of five (5) chargers manufactured by PosiCharge, the units are all operational and they have no signs of physical damage or wear.

The second bank of six (6) chargers is located near the sortation piers and is manufactured by Hobart Accu-charger. These units are older and show signs of age and wear. The units are functional; however, the physical condition indicates that they are near the end of their useful life.

Refer to the attached Existing Condition Drawing T5-E21 for more information.

b. Proposed Design

The new battery chargers for the Gate Numbers 50B, 51A, 52A, 53A, 53B and 54B will be installed under T5 Ground Service Equipment (GSE) Infrastructure (LAWA Project No. T-LAX-114808). Refer to Single Line Diagram for more information.

For the remaining gates, the existing electrical panel 2HPA, 1000-Amp, 480/277-Volt shall be utilized to feed the three (3) 80KW MVS800 Charging Station Units at Gate Numbers 54A, 57A and 58A and three (3) 40KW MVS400 Charging Station Units at Gate Numbers 55A, 56A and 59A.

The existing electrical panel 3HPA6, 800-Amp, 480/277-Volt shall be utilized to feed the one (1) 80KW MVS800 Charging Station Unit at gate 51B.

See attached Drawings T4-E01 and T5-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.6 Terminal 6

a. Existing Condition

There are currently thirteen (13) terminal gates at the site and are identified as Gate Number 60, 61, 62, 63, 64, 65, 66, 67A, 67B, 68A, 68B, 69A and 69B. Terminal 6 employs twenty (20) battery chargers to support their GSE operations, with 4 chargers that are not functional.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
1	R4C1	277/180 V	600 A
2	R4C1B	277/480 V	250 A
3	HUP A4	277/480 V	100 A
4	P70	277/480 V	2000 A

The chargers are located on the ramp level near the gates which they serve. Of the twenty (20) units, twelve (12) are manufactured by PosiCharge. The remaining units are manufactured by Hobart. These units are older and show signs of age and wear. The units are functional; however, the physical condition indicates that they are near the end of their useful life. Refer to the attached Existing Condition Drawing T6-E21 for more information.

b. Proposed Design

Provide a new 800-Amp, 480/277-Volt Distribution Panel BC1 on the ramp level. The new distribution panel will be fed from the existing Switchboard SB2b/C located in Room 2610 on the ramp level. BC1 shall be utilized to feed the five (5) 80KW MVS800 Charging Station Units at Gate Numbers 61, 63, 67B, 69A and 69B and two (2) 40KW MVS400 Charging Station Units at Gate Numbers 65 and 67A.

Provide a second new 800-Amp, 480/277-Volt Distribution Panel BC2 on the ramp level. This additional distribution panel will be fed from the existing Switchboard SB2a/C located in Room 2610 on ramp level. BC2 shall be utilized to feed the four (4) 80KW MVS800 Charging Station Units at Gate Numbers 62, 66, 68A and 68B and two (2) 40KW MVS400 Charging Station Units at Gate Numbers 60 and 64.

See attached Drawings T6-E01 and T6-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.7 Terminal 7

a. Existing Condition

There are currently eleven (11) terminal gates at the site and are identified as Gate Numbers 70A, 70B, 71A, 71B, 72, 73, 74, 75A, 75B, 76 and 77. Terminal 7 employs twenty seven (27) battery chargers to support their GSE operations.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
3	BC-75	277/480 V	400 A
4	D-PC	277/480 V	2500 A
6	PD	277/480 V	800 A
8	PL-EDSDP	277/480 V	600 A

There is a charging depot located under the satellite at the south end of the Terminal. Here, there are eighteen (18) chargers with associated gates to allow for the tugs to be charged and maintained. The older units are manufactured by Load Hog Charger and Cobra Charger. The newer units are manufactured by PosiCharge.

Refer to the attached Existing Condition Drawing T7-E21 for more information.

b. Proposed Design

Provide a new 800-Amp, 480/277-Volt Distribution Panel BC1 on the ramp level. This distribution panel BC1 will be fed from the existing switchboard D-PC located on ramp level. The existing Switchboard D-PC will be replaced under T7 CBIS and Baggage System Project (LAWA Project No. T-LAX-11443). The existing Switchboard D-PC, 2500Amp, 480/277-Volt shall be utilized to feed the two (2) 80KW MVS800 Charging Station Units at Gate Numbers 71B and 73 and three (3) 40KW MVS400 Charging Station Units at Gate Numbers 70A, 70B and 71A.

Distribution Panel BC1 shall be utilized to feed the five (5) 80KW MVS800 Charging Station Units at Gate Numbers 72, 74, 75B, 76 and 77 and one (1) 40KW MVS400 Charging Station Unit at Gate Number 75A.

See attached Drawings T7-E01 and T7-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.8 Terminal 8

a. Existing Condition

There are currently nine (9) terminal gates at the site and identified as Gate Numbers 80, 81, 82, 83, 84, 85, 86, 87 and 88. Terminal 8 employs nine (9) battery chargers to support their GSE operations.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
1	DP1A	277/480 V	1200 A
2	M3A	277/480 V	225 A
3	DP3A	277/480 V	800 A
4	M4A	277/480 V	250 A

The majority of the chargers, with the exception of 2 units, are the LAWA standard PosiCharge units. Refer to attached Existing Condition Drawing T8-E21 for more information.

b. Proposed Design

The existing Electrical Panel DP1A, 800-Amp, 480/277-Volt serving existing battery chargers has enough capacity and shall be re-utilized to feed the two (2) 40KW MVS400 Charging Station Units at Gate Numbers 81 and 83 and two (2) 30KW DVS300 Charging Station Units at Gate Numbers 80 and 81.

The existing Electrical Panel DP3A, 800-Amp, 480/277-Volt serving existing battery chargers has enough capacity and shall be re-utilized to feed the three (3) 40KW MVS400 Charging Station Units at Gate Numbers 84, 86 and 87 and two (2) 30KW DVS300 Charging Station Units at Gate Numbers 85 and 88.

See attached Drawings T8-E01 and T8-E22 for conceptual design, single line diagram and load calculation for this facility.

1.3.9 American Eagle Commuter Facility (AECF)

a. Existing Condition

There are currently ten (10) terminal gates at the site and identified as Gate Numbers 44A, 44B, 44C, 44D, 44E, 44F, 44G, 44H, 44I and 44J. AECF employs twenty three (23) battery chargers to support their GSE operations.

The following table indicates the equipment serving the battery chargers and their ratings:

PANELS FEEDING THE CHARGING STATIONS			
1	HB1H	277/480 V	600 A
2	HB1K	277/480 V	800 A
3	HB1F	277/480 V	600 A
4	HB1G	277/480 V	225 A

The units are manufactured by Hobart and Cobra Charger. These units are older and show signs of age and wear. The units are functional; however, the physical condition indicates that they are near the end of their useful life. Refer to the attached Existing Condition Drawing AECF-E22 for more information.

b. Proposed Design

The existing Electrical Panel HB1F, 600-Amp, 480/277-Volt serving existing battery chargers has enough capacity and shall be re-utilized to feed the three (3) 30KW DVS300 Charging Station Units at Gate Numbers 44A, 44B and 44C.

The existing Electrical Panel HB1K, 800-Amp, 480/277-Volt serving existing battery chargers has enough capacity and shall be re-utilized to feed the three (3) 30KW DVS300 Charging Station Units at Gate Numbers 44D, 44E and 44F.

The existing Electrical Panel HB1H, 600-Amp, 480/277-Volt serving existing battery chargers has enough capacity and shall be reutilized to feed the three (3) 30KW DVS300 Charging Station Units at Gate Numbers 44G, 44H and 44I.

See attached conceptual design, single line diagram and load calculation for this facility.

1.3.10 Bradley West

a. Existing Condition- N/A

b. Proposed Design

Infrastructure and wiring for the battery charging stations on the ramp level are being provided under LAX Bradley West Modernization Project. New battery charging stations are GSE-300DP, 30KW dual port universal rapid charge system. The full infrastructure is being provided at some individual gates at the north and south concourses. The gates which do not have full designed infrastructure are being identified to be supported by a clustered configuration of chargers. These clusters are not provided with any direct infrastructure and will require extension of conduit and wire from the identified distribution panels.

See attached Drawings BW-E01A, BW-E01B, BW-E021N and BW-E021S for conceptual design and single line diagram for this facility.

1.3.11 Midfield Satellite Concourse

Currently, there are no designs in place for the Midfield Satellite Concourse. As the designs are developed, the required infrastructure shall be provided to support a fully electrified GSE to meet the intent of this program. Based on operations and equipment quantities, the number of chargers can be determined and a full design can be provided for the implementation of the needed chargers.

RONS PARKING

1.3.12 RONs Parking West

a. Existing Condition

There are currently twenty (20) parking positions at the site as indicated below. Refer to the attached Existing Condition Drawing RONs-E21 for more information.

East Side

Position Numbers 211, 213, 215, 217, 219

West Side

Position Numbers 201A, 201B, 203, 203C, 205A, 205B, 205C

Southwest Corner

Position Numbers 202A, 202B, 202C, 202D, 202E

There are currently no Battery Chargers at this facility.

b. Proposed Design

East Side

The existing 2000-Amp Switchboard inside Electrical Room No. 2 shall be upgraded to 3000-Amp under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to five (5) new 40KW MVS400 PosiCharge units.

West Side

The existing 1000-Amp Switchboard inside Electrical Room No. 1 shall be upgraded to 2500-Amp under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to seven (7) new 40KW MVS400 PosiCharge units.

Southwest Corner

New underground feeders shall be routed from the new switchboard to five (5) new 40KW MVS400 PosiCharge units.

Refer to the attached Drawing RONs-E22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

CARGO

1.3.13 B1 Cargo

a. Existing Condition

There are currently three (3) parking positions at the site as indicated below. Refer to the attached Existing Condition Drawing B1-E21 for more information.

West Side

Position Number 1

East Side

Position Numbers 2 and 3

There are currently no Battery Chargers at this facility.

b. Proposed Design

West Side

The existing 800-Amp Switchboard inside the Air Freight Building No. 8 has enough capacity to accommodate the additional electrification loads. However, due to old age and its poor condition; a replacement 800-Amp switchboard shall be installed under the 400Hz Electrification Project. New feeders shall be routed from the new switchboard to one (1) new 80KW MVS800 PosiCharge unit to support GSE operations at Position No. 1.

East Side

The existing 800-Amp Panel inside the B1 Cargo Building (also known as Air Freight Building No. 1) shall be upgraded to 1600-Amp under the 400Hz Electrification Project. New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 2 and 3.

Refer to the attached Drawing B1-E22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

1.3.14 C1 Cargo

a. Existing Condition

There are currently two (2) parking positions at the site and identified as Position Numbers 941 and 943. There are currently no Battery Chargers at this facility. Refer to the attached Existing Condition Drawing C1-E21 for more information.

b. Proposed Design

The existing 3000-Amp Switchboard inside the C1 Cargo Building has enough capacity to accommodate the additional electrification loads. However, due to old age and its current poor condition; a replacement 3000-Amp switchboard shall be installed under the 400Hz Electrification Project.

New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 941 and 943.

Refer to the attached Drawing C1-E22 for conceptual design, single line diagram and loads calculation of this airline facility for reference.

1.3.15 Imperial Terminal (Cargo)

a. Existing Condition

There are currently two (2) parking positions at the site and identified as Position Numbers B and C. There are currently no Battery Chargers at this facility. Refer to the attached Existing Condition Drawing IT-E21 for more information.

b. Proposed Design

The existing 1200-Amp switchboard inside the Imperial Terminal Building has enough capacity to accommodate the additional electrification loads. However, since this switchboard is not in compliance with the current standards and codes, a replacement 1200-Amp switchboard shall be installed under the 400Hz Electrification Project. New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers B and C.

Refer to the attached Drawing IT-E22 for conceptual design, single line diagram and loads of this airline facility for reference.

1.3.16 South Pads (Cargo)

a. Existing Condition

There are currently two (2) buildings and five (5) parking positions at the site and are identified as follows. Refer to the attached Existing Condition Drawing SouthPads-E21 for more information.

NCA Building

Position Numbers 1, 2 and 3.

Qantas Building

Position Numbers 4 and 5

There are currently no Battery Chargers at this facility.

b. Proposed Design

NCA Building

Position Number 1

The existing 800-Amp switchboard inside the NCA building has enough capacity to accommodate the additional electrification loads. Since this switchboard is still in good condition, it shall remain for re-use. Existing spares/spaces in the switchboard shall be utilized to feed new Battery Charging Station. New underground feeders shall be routed from existing switchboard to one (1) new 80KW MVS800 PosiCharge unit to support GSE operations.

Position Numbers 2 and 3

The existing 600-Amp switchboard inside the NCA building shall be upgraded to 800-Amp under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 2 and 3.

Quantas Building

Position Number 4

The existing 600-Amp switchboard inside the Qantas Building shall be upgraded to 800-Amp under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to one (1) new 80KW MVS800 PosiCharge unit to support GSE operations.

Position Number 5

The existing 600-Amp switchboard inside the Qantas Building has enough capacity to accommodate the additional electrification loads. Since this switchboard is still in good condition, it shall remain for re-use. Existing spares/spaces in the switchboard shall be utilized to feed new Battery Charging Station. New underground feeders shall be routed from existing switchboard to one (1) new 80KW MVS800 PosiCharge unit to support GSE operations.

Refer to the attached Drawing SouthPads-E22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

1.3.17 Singapore Airlines (Cargo)

a. Existing Condition

There is currently one (1) parking position at the site and identified as Position Number 1. There are currently no Battery Chargers at this facility. Refer to the attached Existing Condition Drawing Singapore-E21 for more information.

a. Proposed Design

The existing 1200-Amp switchboard inside the Singapore Airlines has enough capacity to accommodate the additional electrification loads. Since this switchboard is still in good condition, it shall remain for re-use. Existing spares/spaces in the switchboard shall be utilized to feed new Battery Charging Station.

This facility has only one (1) parking position; however there will be two (2) new 80KW Battery Chargers provided per base needs received from LAWA. New underground feeders shall be routed from this existing switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations.

Refer to the attached Drawing Singapore E-22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

1.3.18 Korean Air (Cargo)

a. Existing Condition

There are currently two (2) parking positions at the site and identified as Position Numbers 1 and 2. There are currently no Battery Chargers at this facility. Refer to the attached Existing Condition Drawing Korean-E21 for more information.

b. Proposed Design

The existing 3000-Amp switchboard inside the Korean Air Building has enough capacity to accommodate the additional electrification loads. However, due to old age and its current poor condition, a replacement 3000-Amp switchboard shall be installed under 400Hz Electrification Project. New feeders shall be routed from the new replacement switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Positions 1 and 2.

Refer to the attached Drawing Korean-E22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

1.3.19 Japan Airlines (Cargo)

a. Existing Condition

There are currently two (2) parking positions at the site and identified as Position Numbers 1 and 2. There are currently no Battery Chargers at this facility. Refer to the attached Existing Condition Drawing JAL-E21 for more information

b. Proposed Design

Currently there is a 4160-480Volt, 750kVA/1000-Amp substation located on top of an existing platform inside the Japan Airlines Building. There are a total of four (4) platforms inside the building and this specific platform is on the furthest north side of the building.

This existing substation shall be upgraded with a new 4160-480Volt, 1500kVA/2000-Amp substation under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 1 and 2.

Refer to the attached Drawing JAL-E22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

1.3.20 FedEx (Cargo)

a. Existing Condition

There are currently eleven (11) permanent parking positions and three (3) temporary parking positions at the site as identified below:

Permanent Positions

Position Numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11

Temporary Positions

Position Numbers Alpha, 2 Alpha and 4 Alpha

There are 8 existing battery chargers located west of Position Number 11 at this facility. The equipment is not located strategically to provide support to all the positions. All existing chargers are manufactured by PosiCharge and each battery charger has two (2) charging ports. The source information of these chargers could not be verified in the field and is unknown.

Refer to the attached Existing Condition Drawing FedEx-E21 for more information.

b. Proposed Design

Currently the incoming 34.5 kVolt service from underground is stepped down to 4160-Volt via the main switchboard and transformer in an area located in between the FedEx Cargo Building and the Japan Airlines Building. This restricted area is surrounded by fences and locked gates so that only authorized personnel can gain access.

The 4160-Volt service is then fed to three (3) different substations strategically located around the FedEx Cargo Building. At each of these substations, 4160-Volt service is stepped down to 480-Volt to provide power for different equipment at the airline facility.

The existing 800-Amp switchboard, labeled as “DBCP” and located adjacent to the substation on the east side of the FedEx Building, shall be upgraded to 2000-Amp under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to nine (9) new 80KW MVS800 PosiCharge units to support GSE operations at all 11 positions.

Refer to the attached Drawing FedEx-E22 for conceptual design, single line diagram and load calculation of this airline facility for reference.

1.3.21 DHL (Cargo)

a. Existing Condition

There are currently four (4) parking positions at the site and identified as Position Numbers 1, 2, 3 and 4.

There are twelve (12) existing battery chargers located east of Position Numbers 1 and 2 in the DHL Building and there are fourteen (14) existing battery chargers located southeast of Position Number 3 inside the AMB Building. The equipment is not located strategically to provide support to all the positions. All existing chargers are manufactured by PosiCharge, Ametek Prestolite Power, Cobra and Legacy Power System and each battery charger has only one (1) charging port. The source information of these chargers could not be verified in the field and is unknown.

Refer to the attached Existing Condition Drawing DHL-E21 for more information.

b. Proposed Design

DHL Building

Position Numbers 1 and 2

The existing two (2) 400-Amp switchboards inside the DHL Building shall be upgraded to one (1) 1200-Amp switchboard under the 400Hz Electrification Project. New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 1 and 2.

AMB Building

Position Numbers 3 and 4

As Position Numbers 3 and 4 are located considerably far from the DHL Building, the proposed solution is to provide power from the nearby AMB Building instead which is located on the south side of the DHL Building and the historic building.

The existing 800-Amp switchboard inside the AMB Building shall be upgraded to 1200-Amp under the 400Hz Electrification Project. New underground feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 3 and 4.

Refer to the attached Drawing DHL-E22 for conceptual design, single line diagram and load of this airline facility for reference.

1.3.22 Imperial Cargo (ICC)

a. Existing Condition

There are currently ten (10) parking positions at the site and identified as Position Numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10.

There are three (3) existing battery chargers located inside China Airlines Building, fifteen (15) existing battery chargers located inside Air China/AeroUnion Building and two (2) existing battery chargers located inside Air Canada/Pacific Air Building. The equipment is not located strategically to provide support to all the positions. All existing chargers are manufactured by PosiCharge and Exide and each battery charger has only one (1) charging port. The source information of these chargers could not be verified in the field and is unknown.

Refer to the attached Existing Condition Drawings IC-E21A and IC-E21B for more information.

b. Proposed Design

The ICC facility consists of eight (8) different buildings.

Swissport East (Position Number 1)

The existing 800Amp switchboard inside this building has enough capacity to accommodate the additional electrification loads. Since this switchboard is still in good condition, it shall remain for re-use. Existing spares/spaces in the switchboard shall be utilized to feed the new battery charging station. New underground feeders shall be routed from this existing switchboard to one (1) new 80KW MVS800 PosiCharge unit to support GSE operations at Position Number 1.

Delta (Position Numbers 2 and 3)

The existing 1200-Amp switchboard inside this building shall be upgraded to one (1) 1600-Amp switchboard under 400Hz Electrification Project. New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Number 2 and 3.

China Airlines (Position Numbers 4 and 5)

The existing 800-Amp switchboard inside this building shall be upgraded to one (1) 1200-Amp switchboard under 400Hz Electrification Project. New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Number 4 and 5.

Air France / Asiana

This building does not serve any positions and, therefore, no additional work is necessary.

Air China / Aero Union

This building does not serve any positions and, therefore, no additional work is necessary.

Lufthansa (Position Numbers 6 and 7)

The existing 1000-Amp switchboard inside this building shall be upgraded to one (1) 1200-Amp switchboard under the 400Hz Electrification Project. New feeders shall be routed from the new switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Number 6 and 7.

Air Canada (Position Numbers 8 and 9)

The existing two (2) 800-Amp switchboards inside this building have enough capacity to accommodate the additional electrification loads. Since these switchboards are still in good condition, they shall remain for re-use. Existing spares/spaces in the switchboard shall be utilized to feed new Battery Charging Station. New underground feeders shall be routed from this existing switchboard to two (2) new 80KW MVS800 PosiCharge units to support GSE operations at Position Numbers 8 and 9.

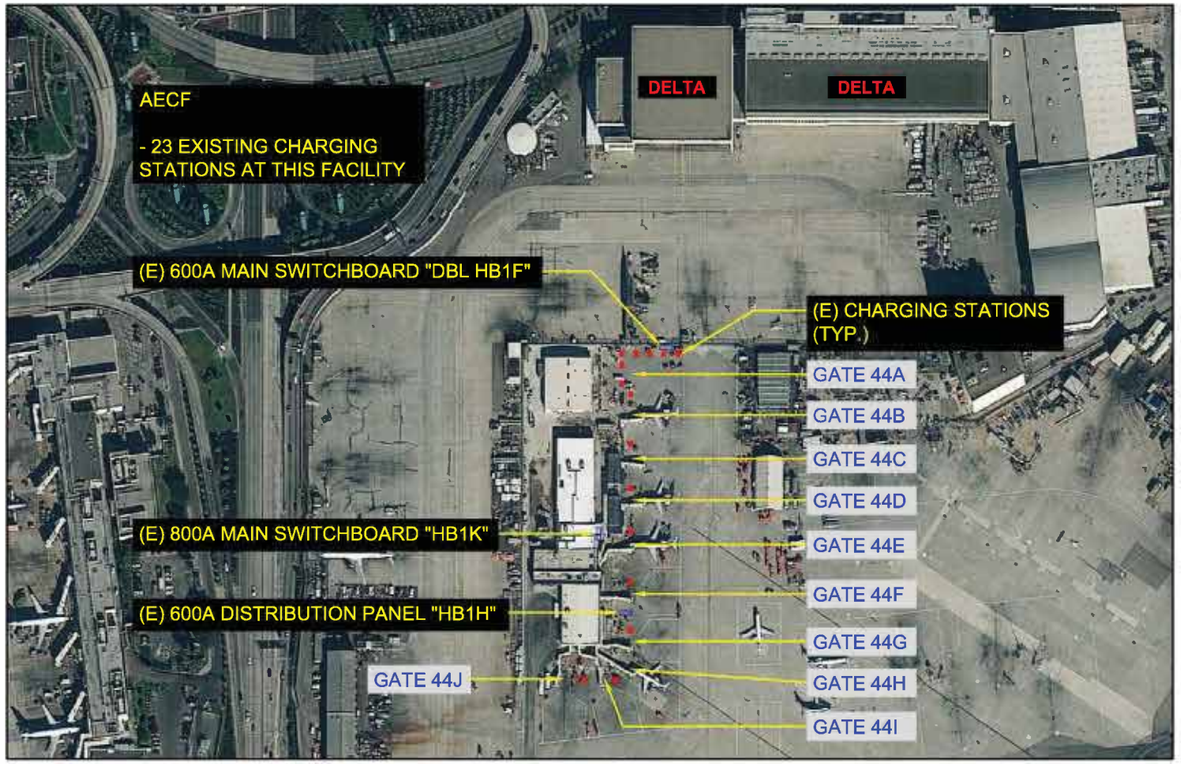
Swissport (Position Number 10)

The existing 600-Amp switchboard inside this building shall be upgraded to one (1) 800-Amp switchboard under the 400Hz Electrification Project. New feeders shall be routed from the new switchboard to one (1) new 80KW MVS800 PosiCharge unit to support GSE operations at Position Number 10.

Refer to the attached Drawings IC-22A and IC-22B for conceptual design, single line diagram and load calculation of this airline facility for reference.

Appendix C
LAX eletGSE Electric Power Infrastructure Assessment

Drawings



(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☐ CARGO
- ☐ RON
- ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

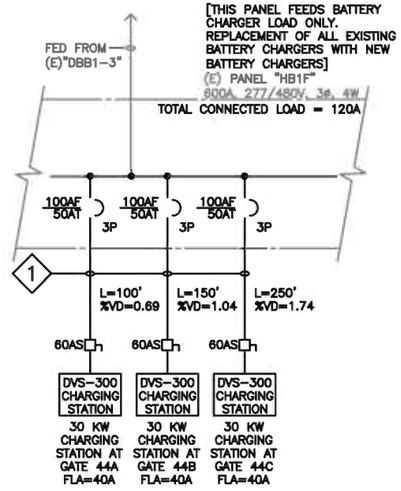
CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

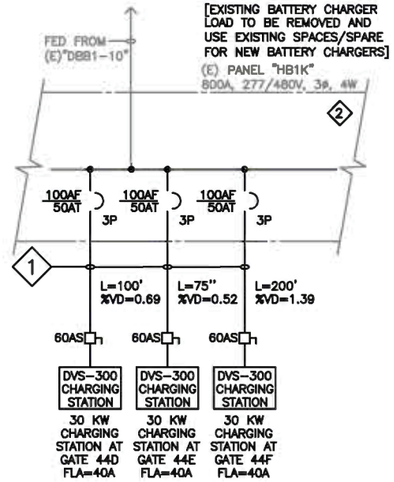
SITE NAME
AECF
(Existing Conditions)

SITE -
Date **06/24/2013**
Scale **N.T.S.**
Drawing No. AECF-E21

(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N



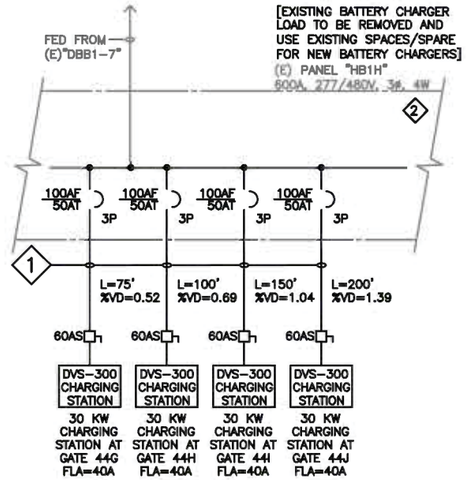
GATES 44A, 44B & 44C:



GATES 44D, 44E & 44F:

KEYNOTES:

1. 1 1/2"C-3#6 + 1#10 GND.
2. PANEL READING WILL BE REQUIRED TO ENSURE ADEQUATE CAPACITY OF BOARD



GATES 44G, 44H, 44I & 44J:

PARTIAL SINGLE LINE DIAGRAMS

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☐ CARGO
- ☐ RON
- ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

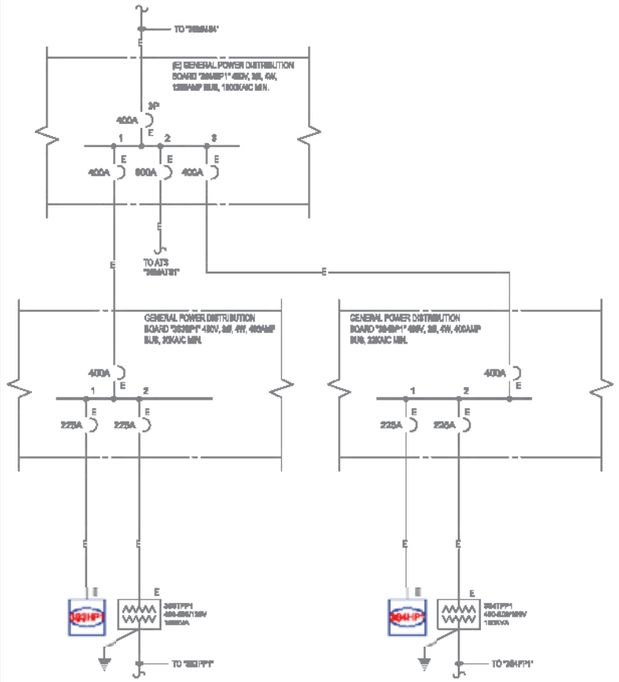
CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

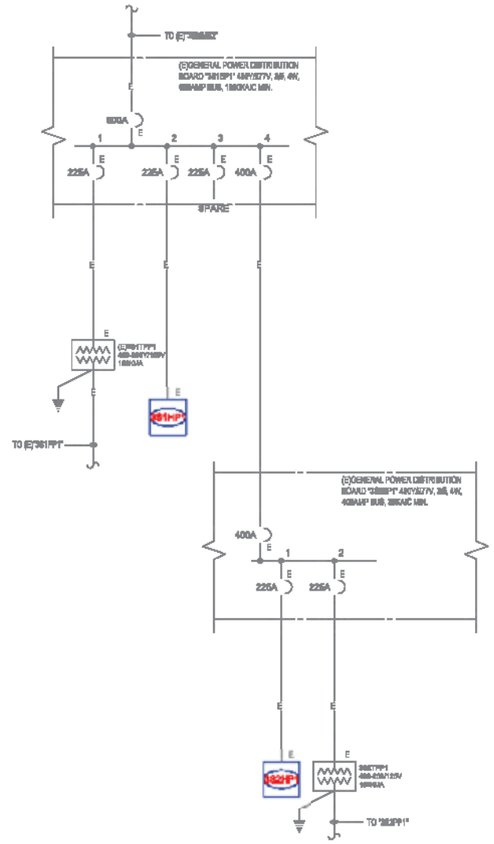
Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

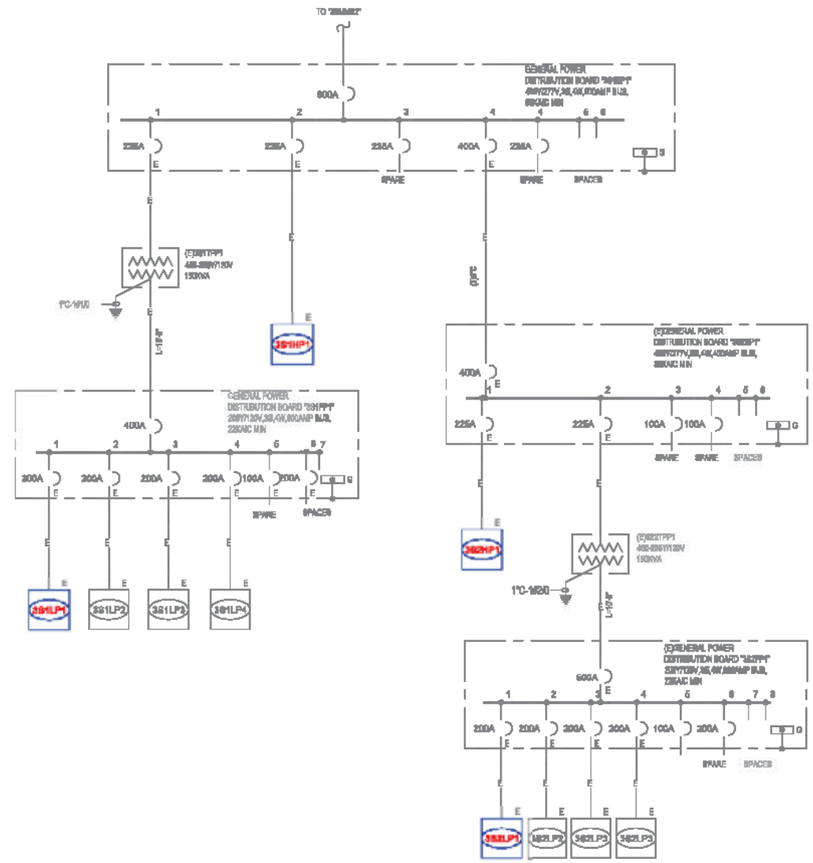
SITE NAME
AECF
(PROPOSED DESIGN)

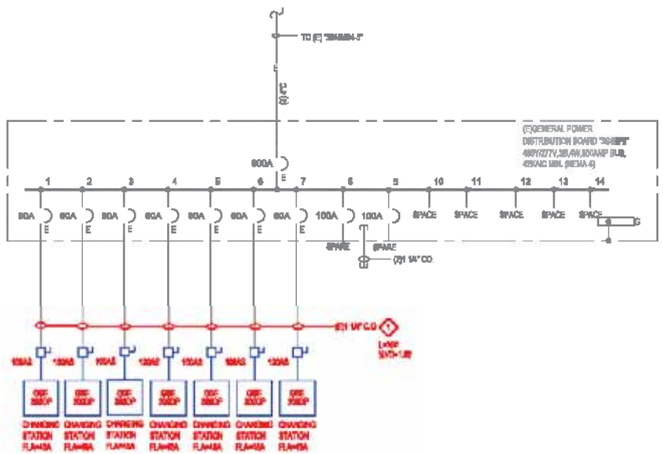
SITE -
Date **06/24/2013**
Scale **N.T.S.**
Drawing No. AECF-E22
2 of **2**

P:\2013\2013-017-00\MPE\AECF.dwg Aug 14, 2013 - 3:34pm









INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

SHEET KEY NOTES

1. PROVIDE (#4 & 1#8 GND. IN EXISTING 1 1/4" CONDUIT. CONDUIT STUB WILL BE PROVIDED UNDER BRADLEY WEST MODERNIZATION PROJECT.

BRADLEY WEST - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
clientGSE FEASIBILITY STUDY
LOS ANGELES, CALFORNIA

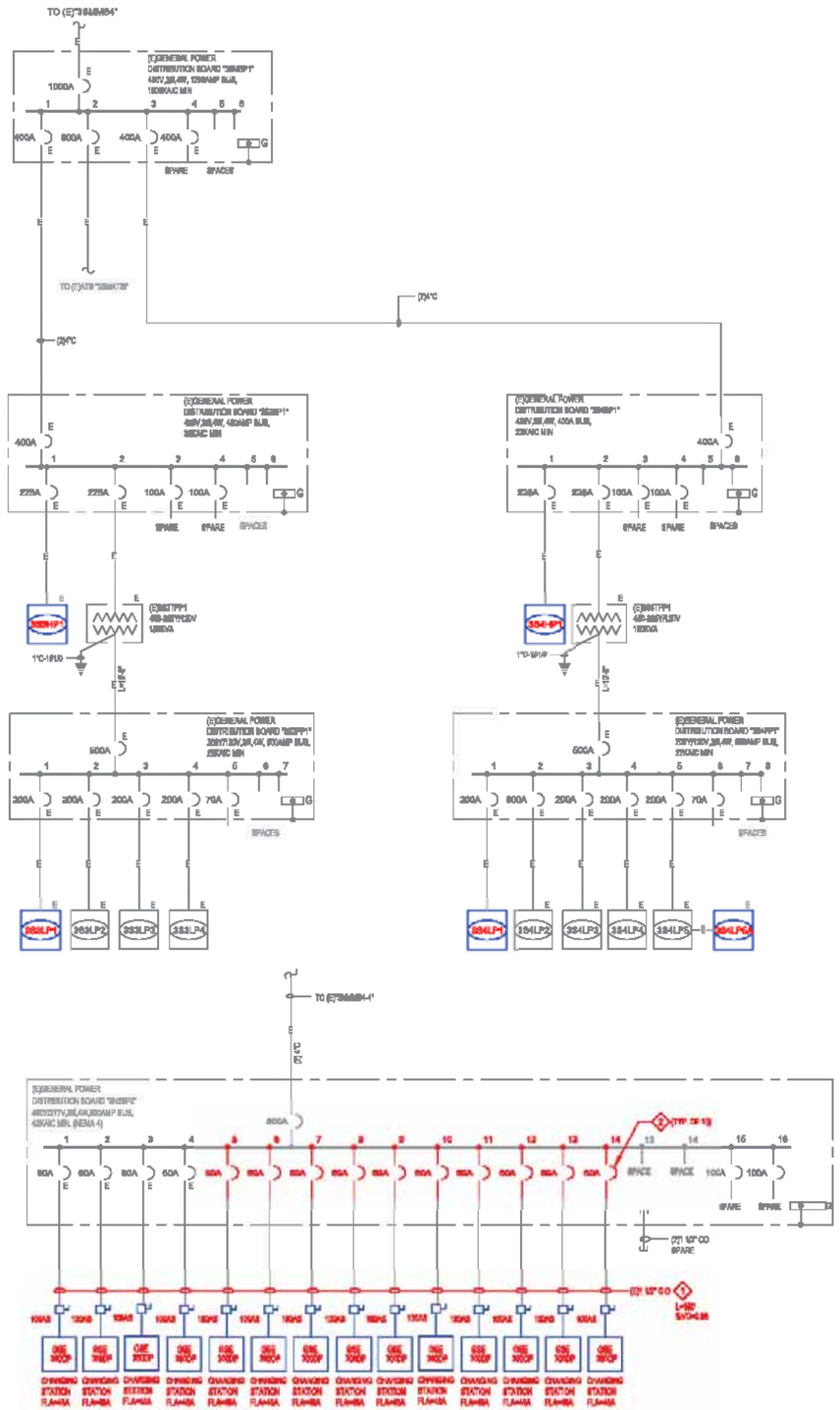
Sheet Title:
SINGLE LINE DIAGRAM (FOR REFERENCE ONLY) BRADLEY WEST

Professionals:
LAX
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2019
Scale:	NONE
Job No.	2019-077-00

Sheet No:
BW-E01A

P:\2019\2019-077-00\APPS\TRF-EXP.dwg Aug 14,20 3:43pm
User: acevedo



BRADLEY WEST - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

SHEET KEY NOTES

1. PROVIDE 3#4 & 1#6 GND. IN EXISTING 1 1/2" CONDUIT. CONDUIT STUB WILL BE PROVIDED UNDER BRADLEY WEST MODERNIZATION PROJECT.
2. PROVIDE NEW 60A, 3P CIRCUIT BREAKER IN EXISTING SPACE TO MATCH CHARACTERISTICS OF EXISTING DISTRIBUTION BOARD.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

MAINTENANCE ☐ CARGO ☐ ROW ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elertGBE FEASIBILITY STUDY
LOS ANGELES, CALFORNIA

Sheet Title:
SINGLE LINE DIAGRAM (FOR REFERENCE ONLY) BRADLEY WEST

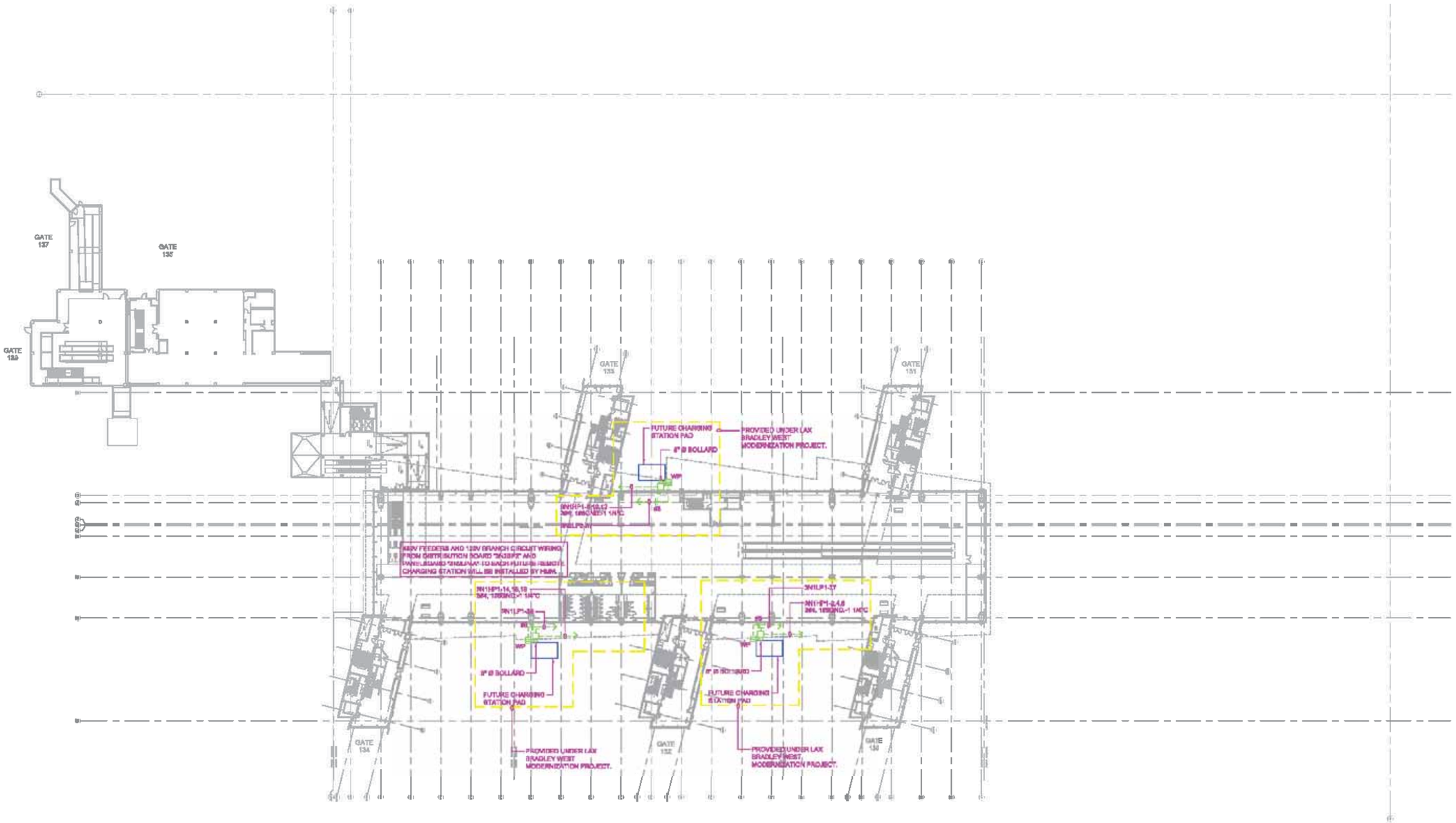
Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
BW-E01B

P:\2013\2013-017-00\MPE\VSBT-E05B.dwg Aug 14,2013 - 4:29pm
User: adriana

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



N

1 OVERALL ELECTRICAL PLAN - BRADLEY WEST NORTH COUNCOURSE (PROPOSED DESIGN)

SCALE: 1"=40'-0"

P:\2013\2013-017-00\APE\TBIT-E02N.dwg Aug 14,2013 - 4:40pm
User: cchiles

☐ MAINTENANCE ☐ CARGO ☐ ROW ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
distrGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

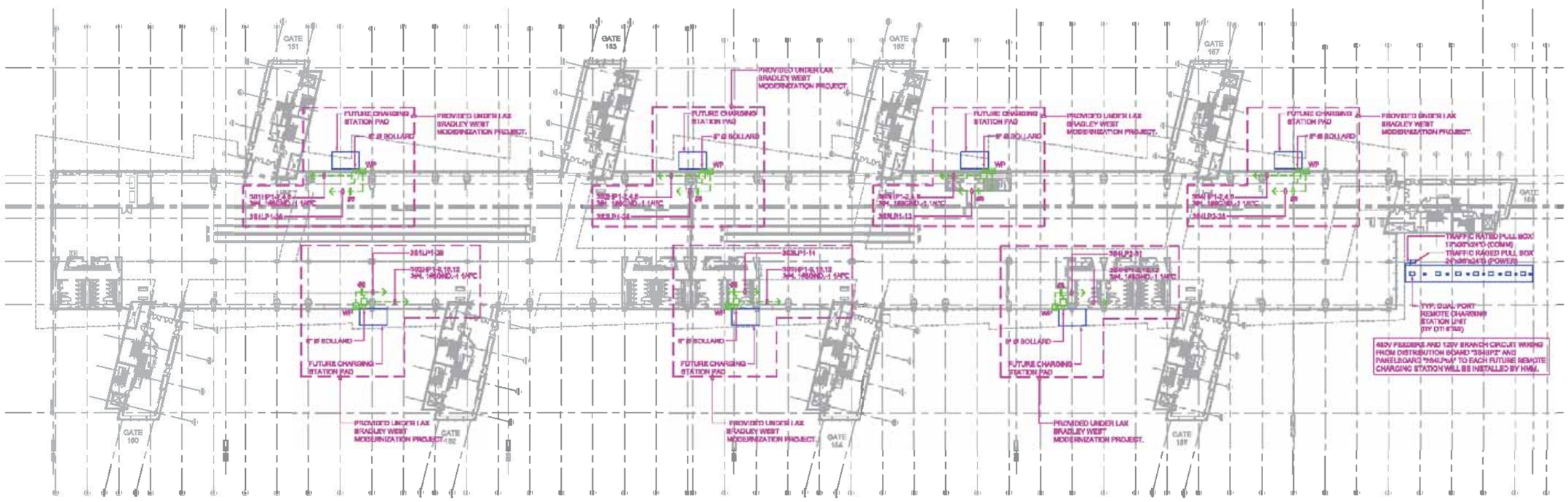
Sheet Title:
GSE EQUIPMENT LOCATION PLAN
BRADLEY WEST - NORTH CONCOURSE

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
BW-E21N

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



N

1 OVERALL ELECTRICAL PLAN - BRADLEY WEST SOUTH COUNCOURSE (PROPOSED DESIGN)
SCALE: 1"=40'-0"

C:\Users\achicheri\appdata\local\temp\AcPublish_9220\TBIT-E02S.dwg Aug 14,2013 - 4:42pm
User: achicheri

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

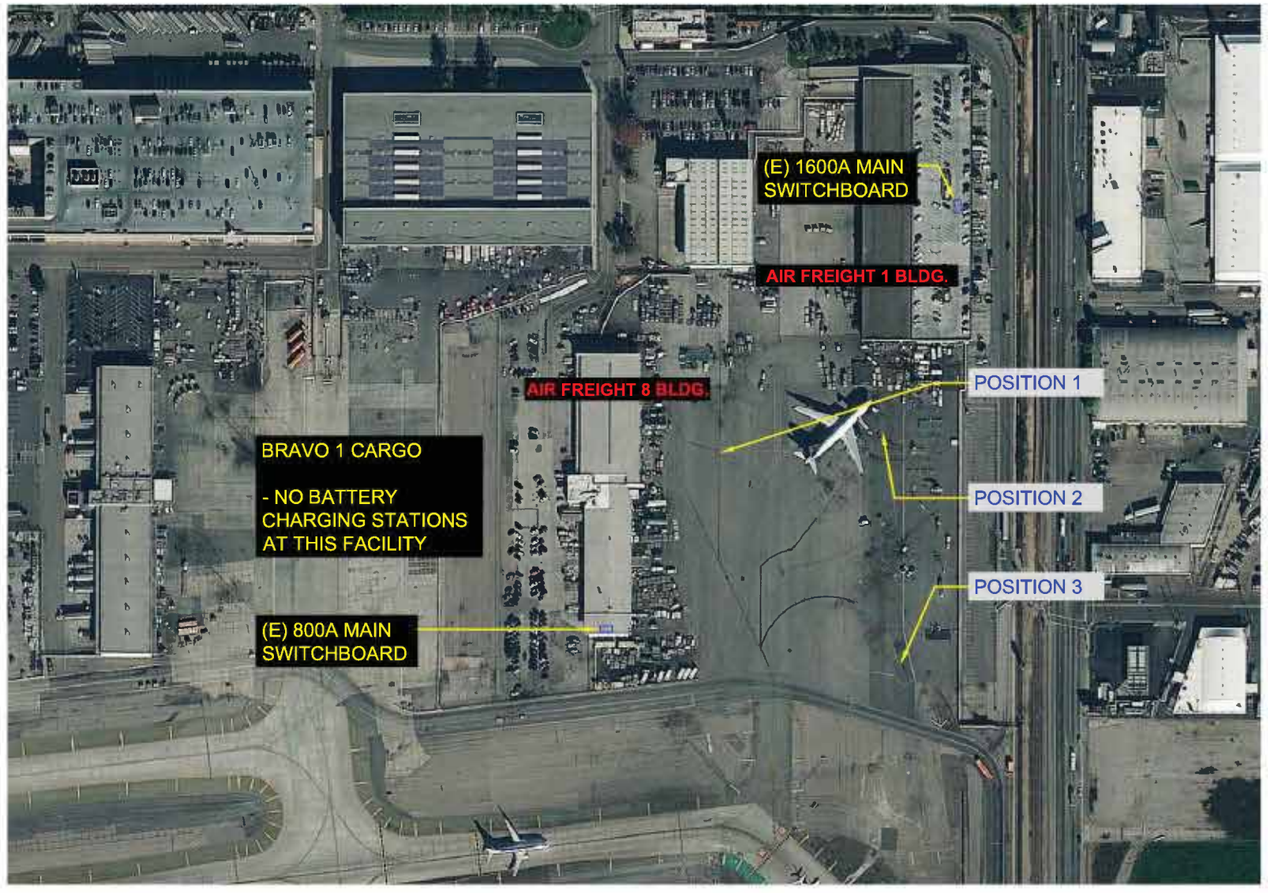
Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elintGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE EQUIPMENT LOCATION PLAN
BRADLEY WEST - SOUTH CONCOURSE

Professionals:
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
BW-E21S



(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
B1 Cargo (Existing Conditions)

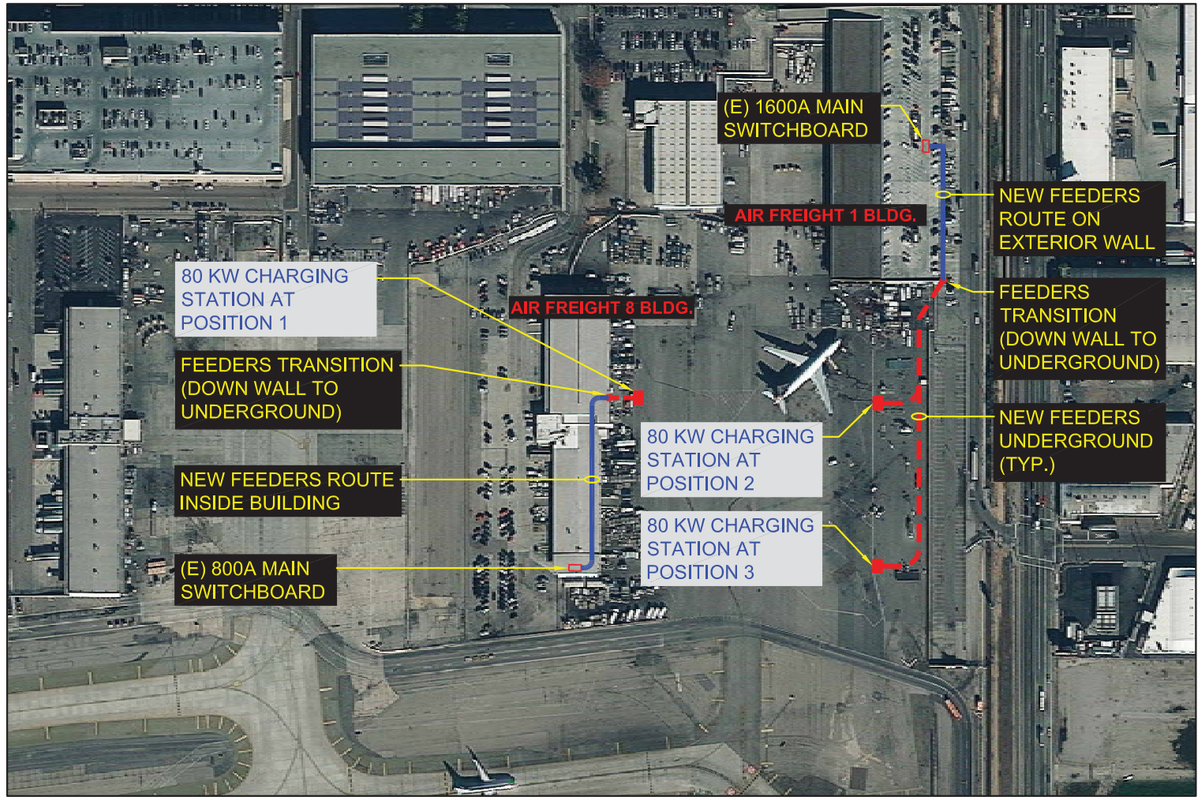
SITE
SITE ID #9

Date
06/24/2013

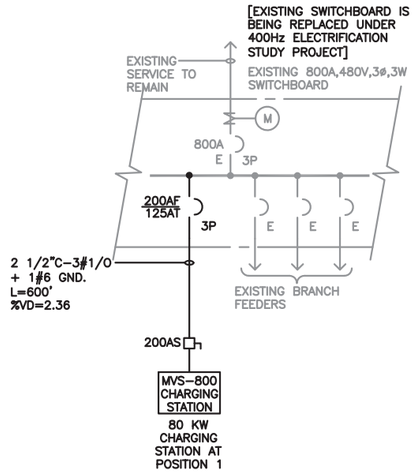
Scale
N.T.S.

Drawing No.
B1-E21

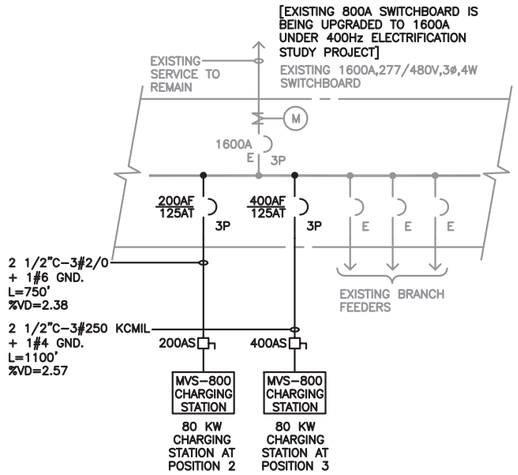
P:\2013\2013-017-00\MPE\C_B1 (Existing).dwg Aug 14, 2013 - 3:35pm



(NOT TO SCALE & APPROXIMATE LOCATION ONLY)



POSITION 1



POSITIONS 2 & 3

PARTIAL SINGLE LINE DIAGRAMS

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION.

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Service Size (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
Air Freight 8 Building) Position 1	PMD422-2291	86.4	108.0	162.5	1	100	200	300	462.5	800	640	177.55	800	337.5	1) Switchboard to be replaced under 400Hz Electrification Project. 2) Existing board considered 80% rated. 2) New board considered 100% rated.
Air Freight 1 Building Positions 2 & 3	APMYV222-22460	249.6	312.0	469.3	2	200	400	600	1069.3	800	640	-429.31	1600	530.7	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
B1 Cargo (PROPOSED DESIGN)

SITE
SITE ID #9

Date
06/24/2013

Scale
N.T.S.

Drawing No.
B1-E22

P:\2013\2013-017-00\MPE\C_B1.dwg Aug 14, 2013 - 3:34pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
C1 Cargo (Existing Conditions)

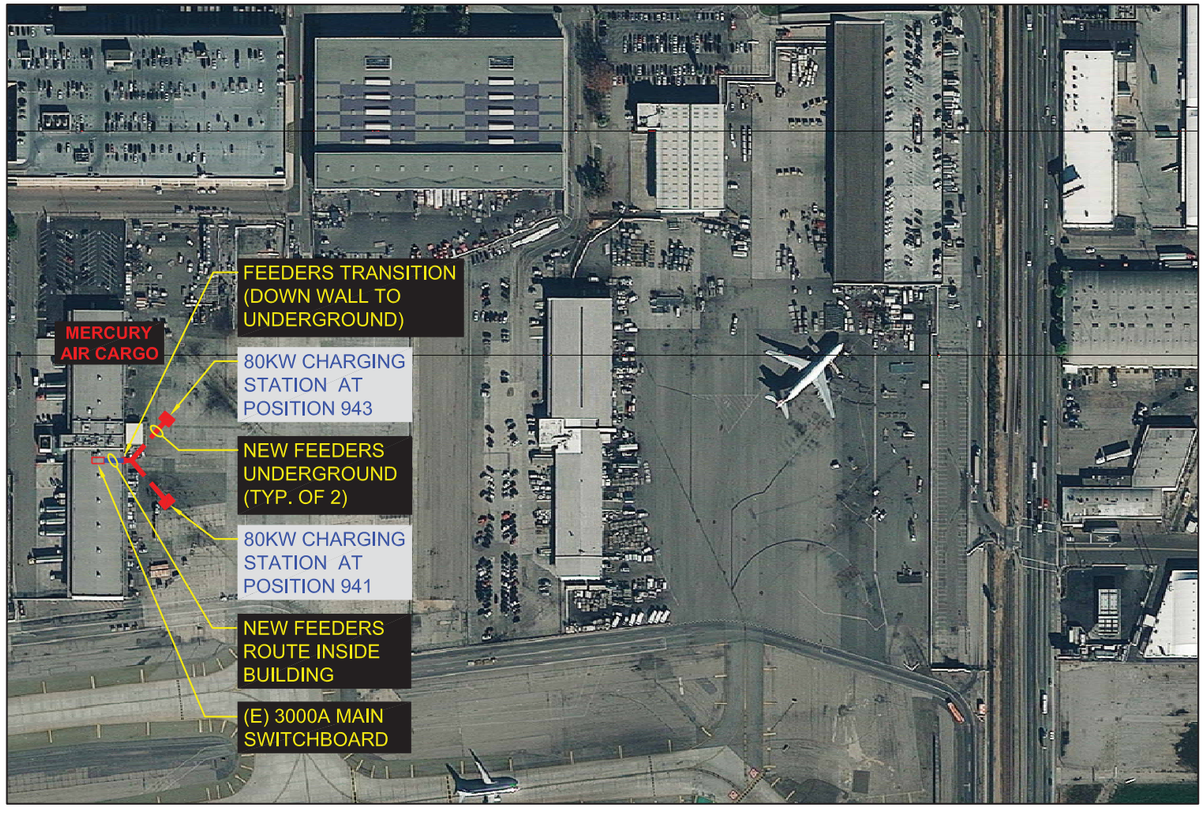
SITE
SITE ID #10

Date
06/24/2013

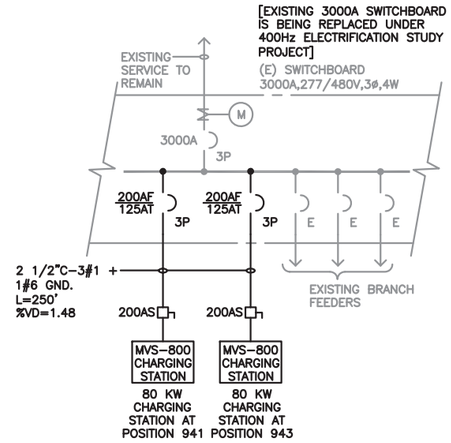
Scale
N.T.S.

Drawing No.
C1-E21

P:\2013\2013-017-00\MPE\C_C1 (Existing).dwg Aug 14, 2013 - 3:36pm



(NOT TO SCALE & APPROXIMATE LOCATION ONLY)



POSITIONS 941 & 943

PARTIAL SINGLE LINE DIAGRAM

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION.

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Electric Load Plus Additional (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
Mecury Air Cargo Building Positions 941 & 943	APMYV226-8636	110.4	138.0	207.6	2	200	200	400	607.6	3000	2400	1792.4	3000	2392.4	1) Switchboard to be replaced under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
C1 Cargo
(PROPOSED DESIGN)

SITE
SITE ID #10

Date
06/24/2013

Scale
N.T.S.

Drawing No.
C1-E22

P:\2013\2013-017-00\MPE\C_C1.dwg Aug 14, 2013 - 3:35pm

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
DHL
(Existing Conditions)

SITE
SITE ID #17

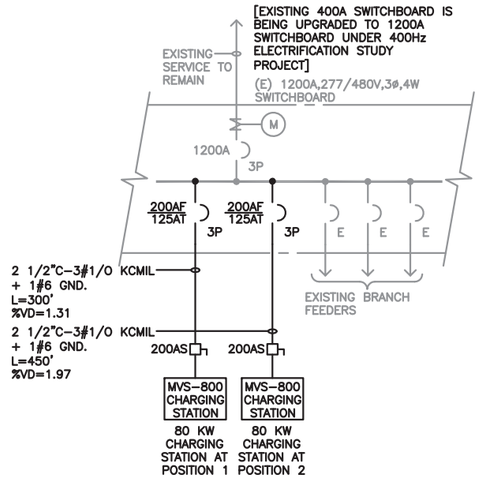
Date
06/24/2013

Scale
N.T.S.

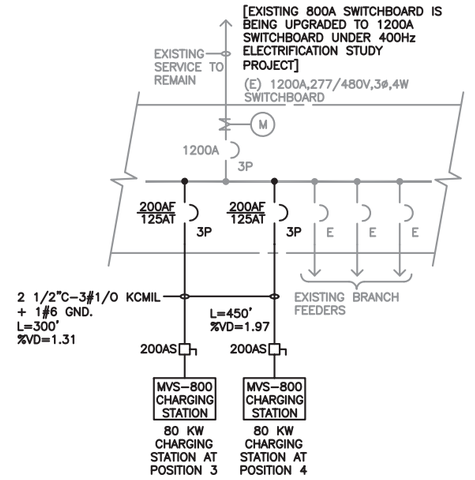
Drawing No.
DHL-E21

P:\2013\2013-017-00\MPE\C_DHL (Existing).dwg Aug 14, 2013 - 3:37pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N



POSITIONS 1 & 2



POSITIONS 3 & 4

PARTIAL SINGLE LINE DIAGRAMS

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION.

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
DHL															
Position 1	APMYV219-34940	80.8	101	151.9	1	100	100	200	351.9	400	320	-31.9	1200	434.5	1) Service & Switchboards to be upgraded
Position 2	APMYV219-38614	113.6	142	213.6	1	100	100	200	413.6	400	320	-93.6			under 400Hz Electrification Project.
															2) Existing boards considered 80% rated.
															3) New board considered 100% rated.
AMB	PMYD222-7838	219.2	274	412.2	2	200	200	400	812.2	800	640	-172.2	1200	387.8	1) Switchboard to be upgraded under
Positions 3 & 4															400Hz Electrification Project.
															2) Existing board considered 80% rated.
															3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
DHL
(PROPOSED DESIGN)

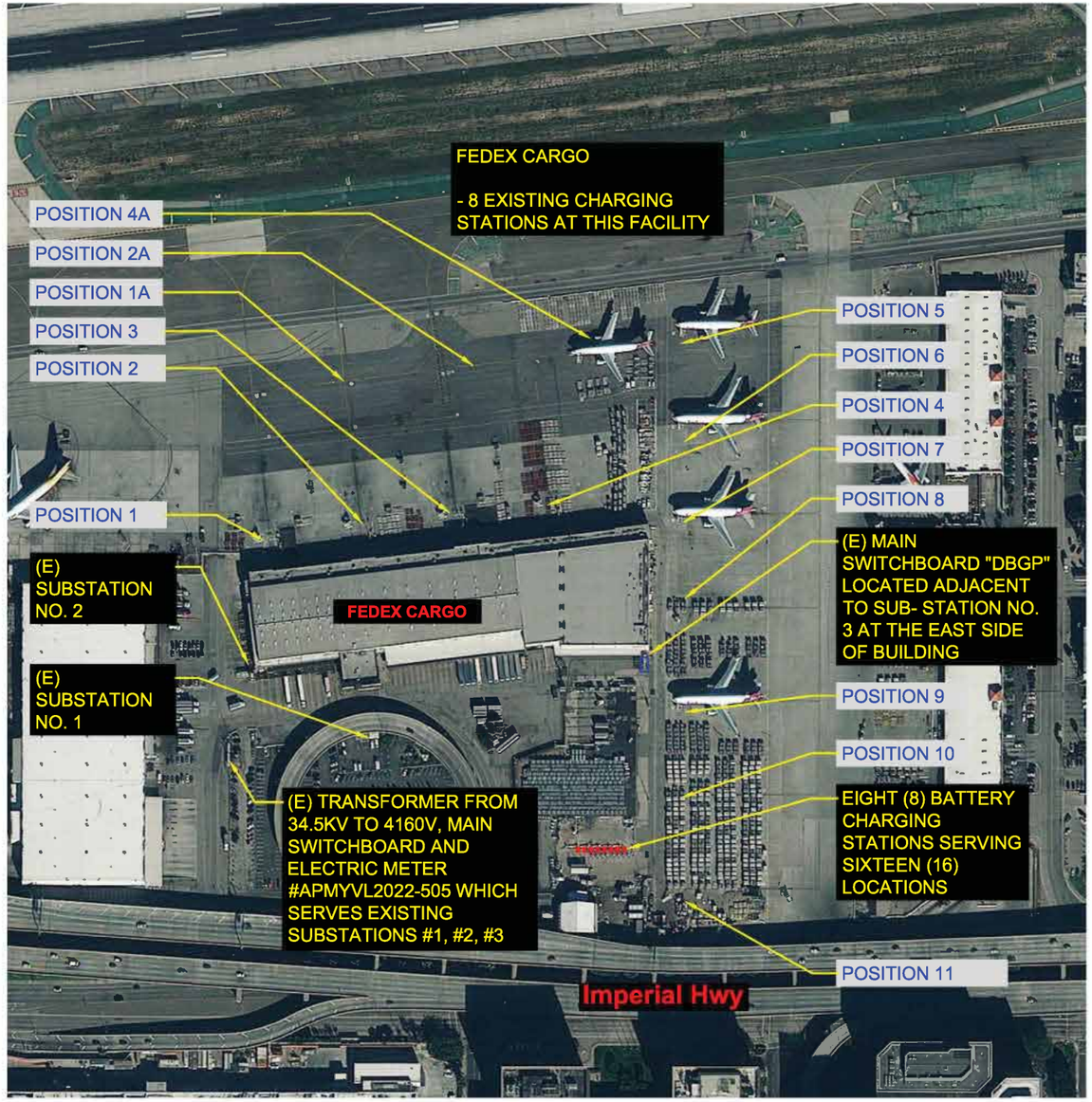
SITE
SITE ID #17

Date
06/24/2013

Scale
N.T.S.

Drawing No.
DHL-E22

P:\2013\2013-017-00\MPE\C_DHL.dwg Aug 14, 2013 - 3:36pm



EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
FedEx Cargo (Existing Conditions)

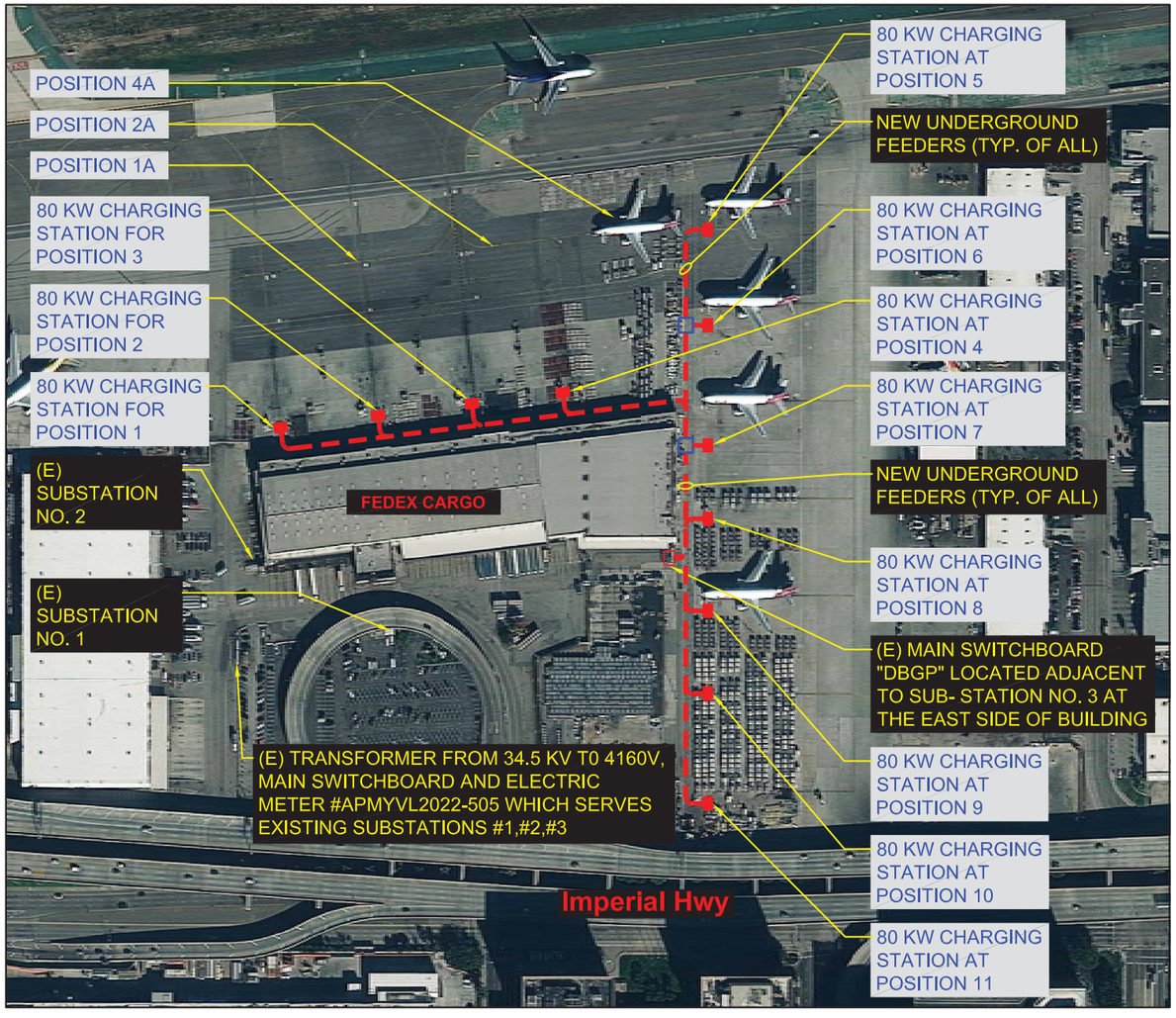
SITE
SITE ID #16

Date
06/24/2013

Scale
N.T.S.

Drawing No.
FedEx-E21

P:\2013\2013-017-00\MPE\C_FED EX (Existing).dwg Aug 14, 2013 - 3:38pm



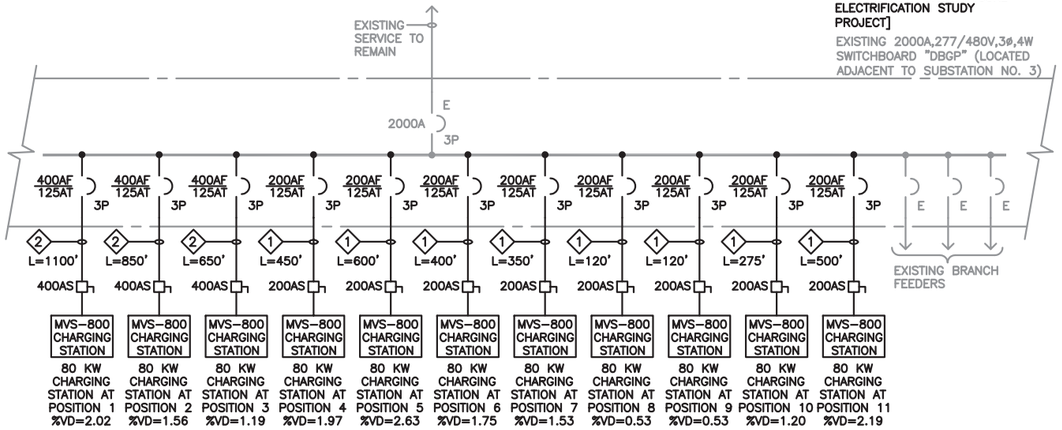
(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

KEYNOTES:

1. 2 1/2"C–3#1/0 + 1#6 GND.
2. 2 1/2"C–3#250 KCMIL + 1#4 GND.

[EXISTING 800A SWITCHBOARD IS BEING UPGRADED TO 2000A SWITCHBOARD UNDER 400Hz ELECTRIFICATION STUDY PROJECT]

EXISTING 2000A,277/480V,3ø,4W SWITCHBOARD "DBGP" (LOCATED ADJACENT TO SUBSTATION NO. 3)



POSITIONS 1,2,3,4,5,6,7,8,9,10 &11

PARTIAL SINGLE LINE DIAGRAM

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

LOAD CALCULATION:

					A	Proposed Additions													
							B		C	D	E (C+D-B)	F (E+A)		G	H (G-F)		I	J (I-F)	
Facility and	Existing	Existing	Existing	Existing	Existing	# of	Existing	# of	Additional	Additional	Total Additional	Total Existing	Existing	Existing	Existing		Existing	Existing	Summary
Airplane	Electric Meter	Max.	Max.	Max. Amps.	Max. Amps.	Existing	Battery	80 KW	Load @ 100A	GPU	Electric Load	Plus Additional	Service	Service Size	Service		Service	Service	
Position	Number	KW	KVA	Incl. 25% Per NEC	Incl. 25% Per NEC	Battery	Charger	Battery	per 80 KW	Load (Amps)	Only @ 480V	Electric Load	Size	@ 80% Rating	Size		Size	Size	
				220.87 @ 4160V	220.87 @ 480V	Charger	Load(Amps)	Charger	Battery Charger		(Amps)	@ 480V (Amps)	(Amps)	(Amps)	(Amps)		(Amps)	(Amps)	
FedEx Cargo	APMYVL2022-505	848.0	1060.0	61.4	531.9	8	400	11	1100	200	900	1431.9	800	640	-791.9		2000	568.1	1) Service & Switchboard to be upgraded
Positions 5 & 6				At Substation #3	At Substation #3														under 400 Hz Electrification Project.
(Fed from				only; 1/3 of total	only; 1/3 of total														2) Existing board considered 80% rated.
Substation #3)				load	load														3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
FedEx Cargo
(PROPOSED DESIGN)

SITE
SITE ID #16

Date
06/24/2013

Scale
N.T.S.

Drawing No.
FedEx-E22

P:\2013\2013-017-00\MPE\C_FED EX.dwg Aug 14, 2013 - 3:37pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

P:\2013\2013-017-00\MPE\C_ICC-page1 (Existing).dwg Aug 14, 2013 - 3:42pm

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

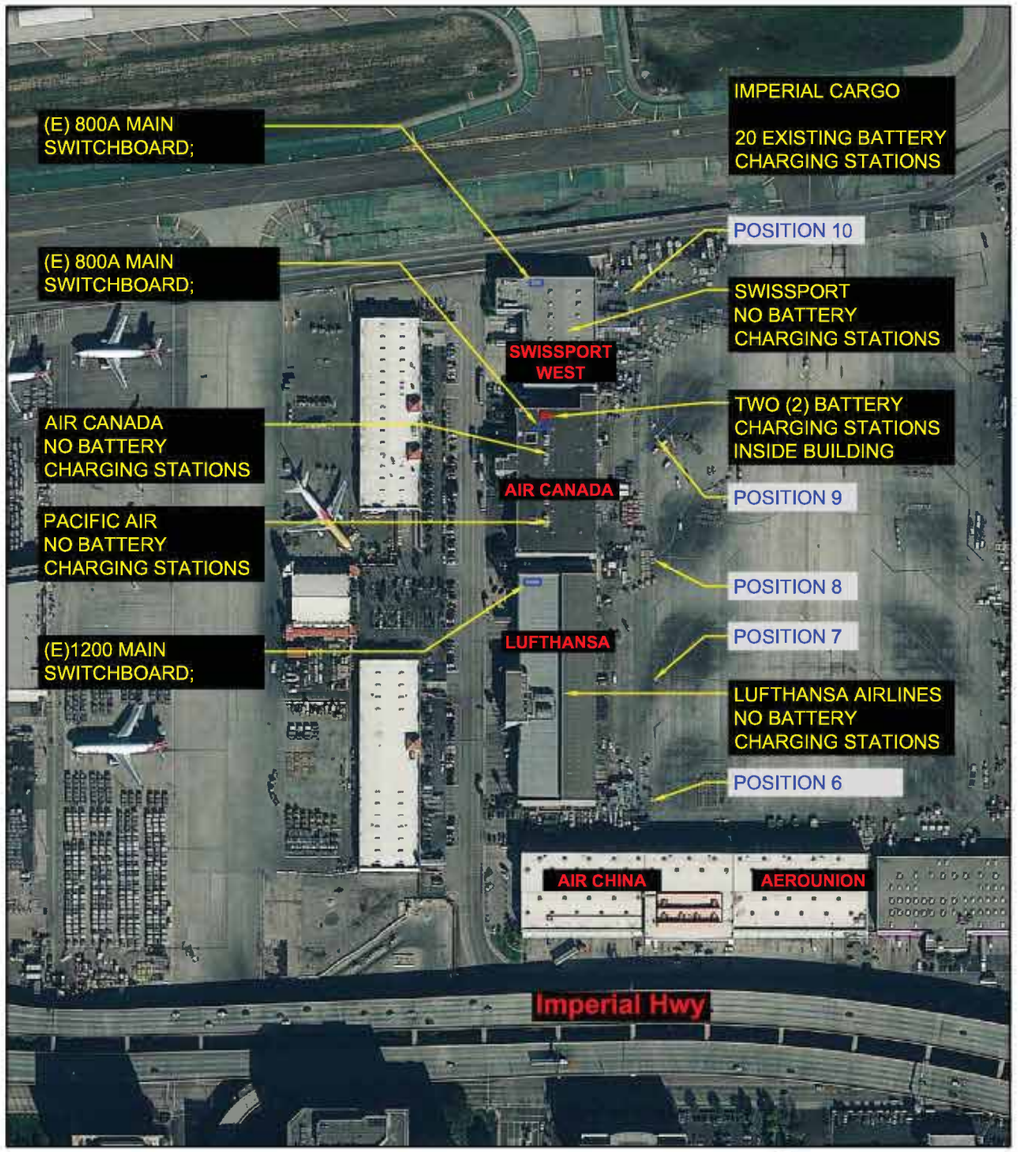
SITE NAME
Imperial Cargo (EXISTING CONDITIONS)

SITE
SITE ID #18

Date
06/24/2013

Scale
N.T.S.

Drawing No.
IC-E21A



(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Imperial Cargo (EXISTING CONDITIONS)

SITE
SITE ID #18

Date
06/24/2013

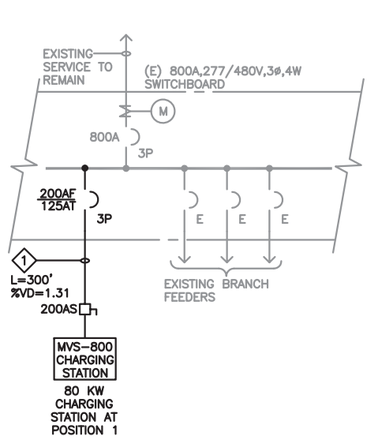
Scale
N.T.S.

Drawing No.
IC-E21B

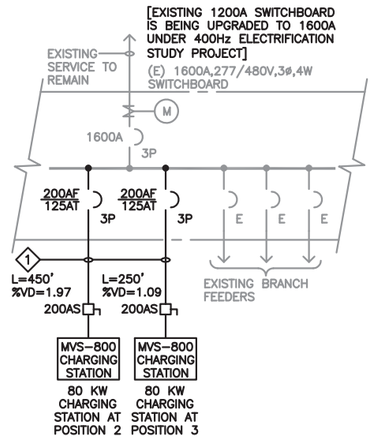
(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

KEYNOTES:

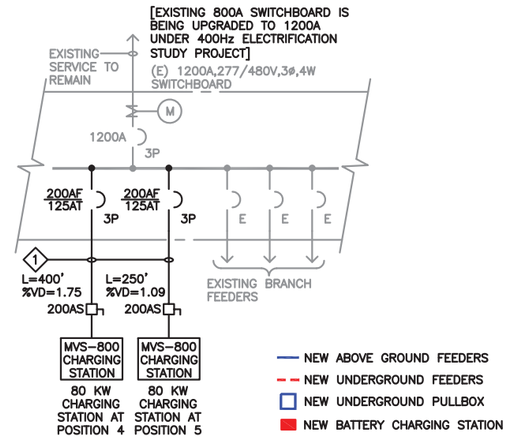
1. 2 1/2"C-3#1/0 + 1#6 GND.



POSITION 1



POSITIONS 2 & 3



POSITIONS 4 & 5

PARTIAL SINGLE LINE DIAGRAMS

LOAD CALCULATIONS:

					Proposed Additions											
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)		
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Service Size (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary	
Swissport East Position 1	PMD222-10145	109.6	137.0	206.1	1	100	200	300	506.1	800	640	133.9	N/A	N/A	1) Existing board to remain. 2) Existing board considered 80% rated.	

					Proposed Additions											
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)		
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Service Size (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary	
Delta Cargo Position 2 & 3	APMYV225-5582	258.0	322.5	485.1	2	200	200	400	885.1	1200	960	74.9	1600	714.9	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.	

					Proposed Additions											
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)		
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load(Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Service Size (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary	
China Airlines Position 4 & 5	PMYD222-10141	88.0	110.0	165.5	2	200	400	600	765.5	800	640	-125.5	1200	434.5	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.	

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Imperial Cargo (PROPOSED DESIGN)

SITE
SITE ID #18

Date
06/24/2013

Scale
N.T.S.

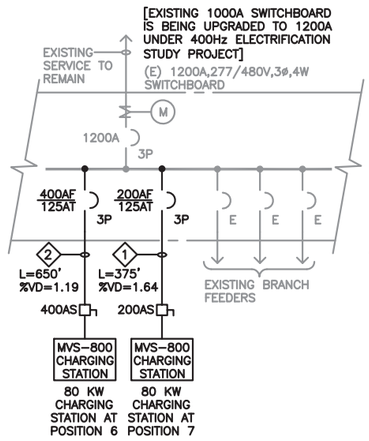
Drawing No.
IC-E22A

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

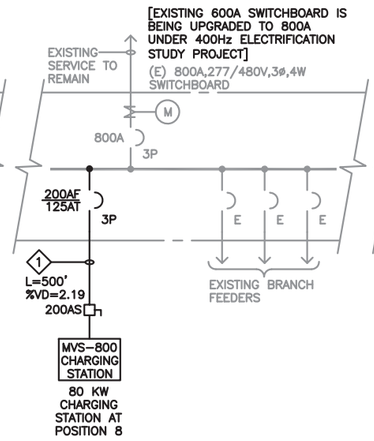
N

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

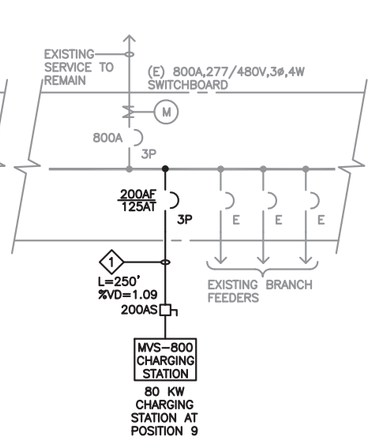
KEYNOTES:
1. 2 1/2"C-3#1/0 + 1#6 GND.
2. 2 1/2"C-3#250 KCMIL + 1#4 GND.



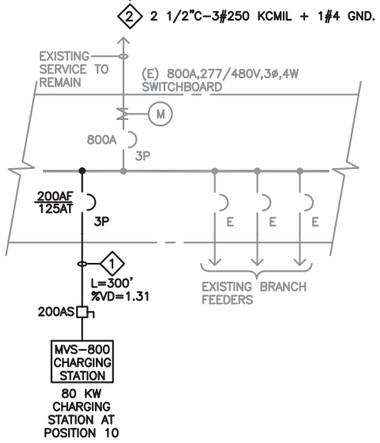
POSITIONS 6 & 7



POSITION 8



POSITION 9



POSITION 10

PARTIAL SINGLE LINE DIAGRAMS

LOAD CALCULATIONS:

					Proposed Additions											
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)		
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary	
Lufthansa Position 6 & 7	PMYD222-10129	137.6	172.0	258.7	2	200	400	600	858.7	1000	800	-58.7	1200	341.3	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.	

					Proposed Additions											
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)		
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary	
Air Canada																
Position 8	CAPMYV222-22649	100.0	125	188.0	1	100	200	300	488.0	800	640	152.0	N/A	N/A	1) Existing Board to remain. 2) Existing board considered 80% rated.	
Position 9	CAPMYV222-22650	44.0	55	82.7	1	100	200	300	382.7	800	640	257.3	N/A	N/A	1) Existing Board to remain. 2) Existing board considered 80% rated.	

					Proposed Additions											
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)		
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary	
Swissport West Position 10	APMYV222-24724	96.0	120.0	180.5	1	100	200	300	480.5	600	480	-0.5	800	319.5	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.	

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Imperial Cargo (PROPOSED DESIGN)

SITE
SITE ID #18

Date
06/24/2013

Scale
N.T.S.

Drawing No.
IC-E22B

P:\2013\2013-017-00\MPE\C_ICC-page4.dwg Aug 14, 2013 - 3:44pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☐ CARGO
- ☐ RON
- ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Imperial Terminal (Existing Conditions)

SITE
SITE ID #11

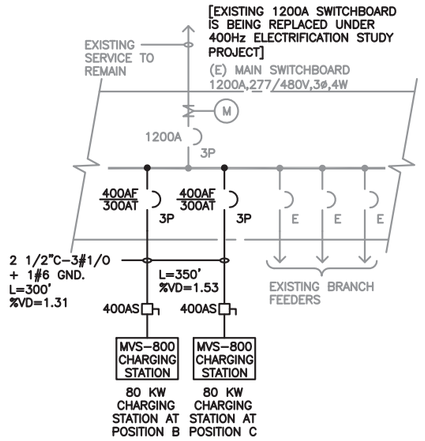
Date
06/24/2013

Scale
N.T.S.

Drawing No.
IT-E21

P:\2013\2013-017-00\MPE\C_Imperial_Ter (Existing).dwg Aug 14, 2013 - 3:45pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)



POSITIONS B & C:

PARTIAL SINGLE LINE DIAGRAM

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D	E		F	G	H	I	
								(B+C)	(A+D)			(F-E)		(H-E)	
Facility and	Existing	Existing	Existing	Existing	# of	Additional	Additional	Total Additional	Total Existing	Existing	Existing	Existing	New	New	Summary
Airplane	Electric Meter	Max.	Max.	Max. Amps.	80 KW	Load @ 100A	GPU	Electric Load	Plus Additional	Service	Service Size	Spare	Service	Spare	
Position	Number	KW	KVA	Incl. 25% Per NEC	Battery	per 80 KW	Load (Amps)	Only	Electric Load	Size	@ 80% Rating	Capacity	Size	Capacity	
				220.87 @ 480V	Charger	Battery Charger		(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	
Imperial Term.	APMYV422-4297	88.0	110.0	165.5	2	200	400	600	765.5	1200	960	194.5	1200	434.5	1) Switchboard to be replaced
Positions B & C															under 400Hz Electrification Project.
															2) Existing board considered 80% rated.
															3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☐ CARGO
- ☐ RON
- ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Imperial Terminal (PROPOSED DESIGN)

SITE
SITE ID #11

Date
06/24/2013

Scale
N.T.S.

Drawing No.
IT-E22

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Korean (Existing Conditions)

SITE
SITE ID #14

Date
06/24/2013

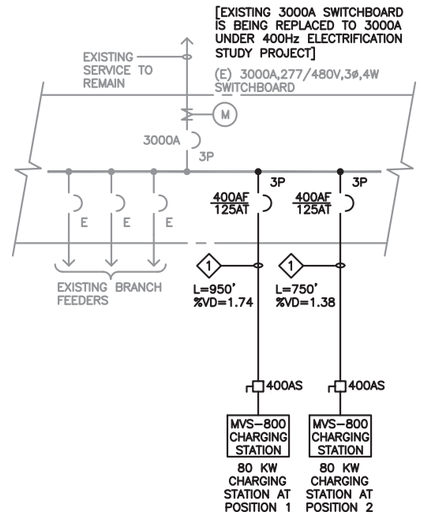
Scale
N.T.S.

Drawing No.
Korean-E21

(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N

KEYNOTES:

1 2 1/2"C–3#250 KCMIL + 1#4 GND.



POSITIONS 1 & 2:

PARTIAL SINGLE LINE DIAGRAM

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
Korean Positions 1 & 2	APMYV229-4089	212.0	265.0	398.6	2	200	200	400	798.6	3000	2400	1601.4	3000	2201.4	1) Existing Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Korean
(PROPOSED DESIGN)

SITE
SITE ID #14

Date
06/24/2013

Scale
N.T.S.

Drawing No.
Korean-E22

P:\2013\2013-017-00\MPE\C_Korean.dwg Aug 14, 2013 - 3:46pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Korean (Existing Conditions)

SITE
SITE ID #14

Date
06/24/2013

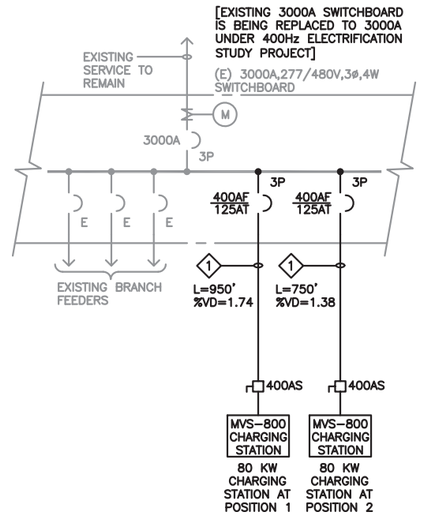
Scale
N.T.S.

Drawing No.
Korean-E21

KEYNOTES:

1 2 1/2"C–3#250 KCMIL + 1#4 GND.

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)



POSITIONS 1 & 2:

PARTIAL SINGLE LINE DIAGRAM

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
				220.87 @ 480V											
Korean	APMYV229-4089	212.0	265.0	398.6	2	200	200	400	798.6	3000	2400	1601.4	3000	2201.4	1) Existing Switchboard to be upgraded
Positions 1 & 2															under 400Hz Electrification Project.
															2) Existing board considered 80% rated.
															3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Korean
(PROPOSED DESIGN)

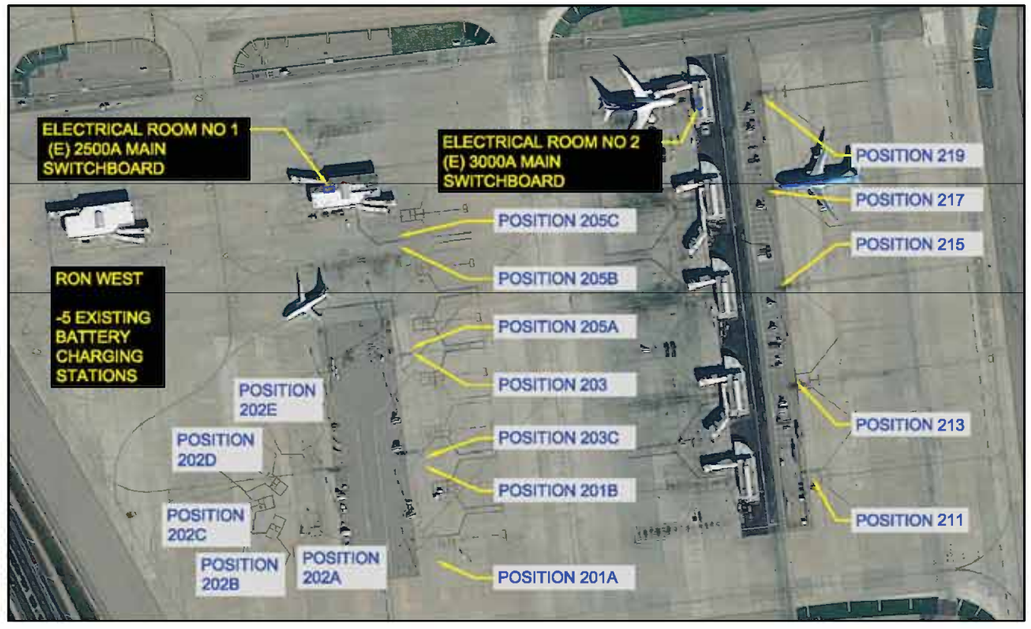
SITE
SITE ID #14

Date
06/24/2013

Scale
N.T.S.

Drawing No.
Korean-E22

P:\2013\2013-017-00\MPE\C_Korean.dwg Aug 14, 2013 - 4:27pm



(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☐ CARGO
- ☒ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
RONs West (Existing Conditions)

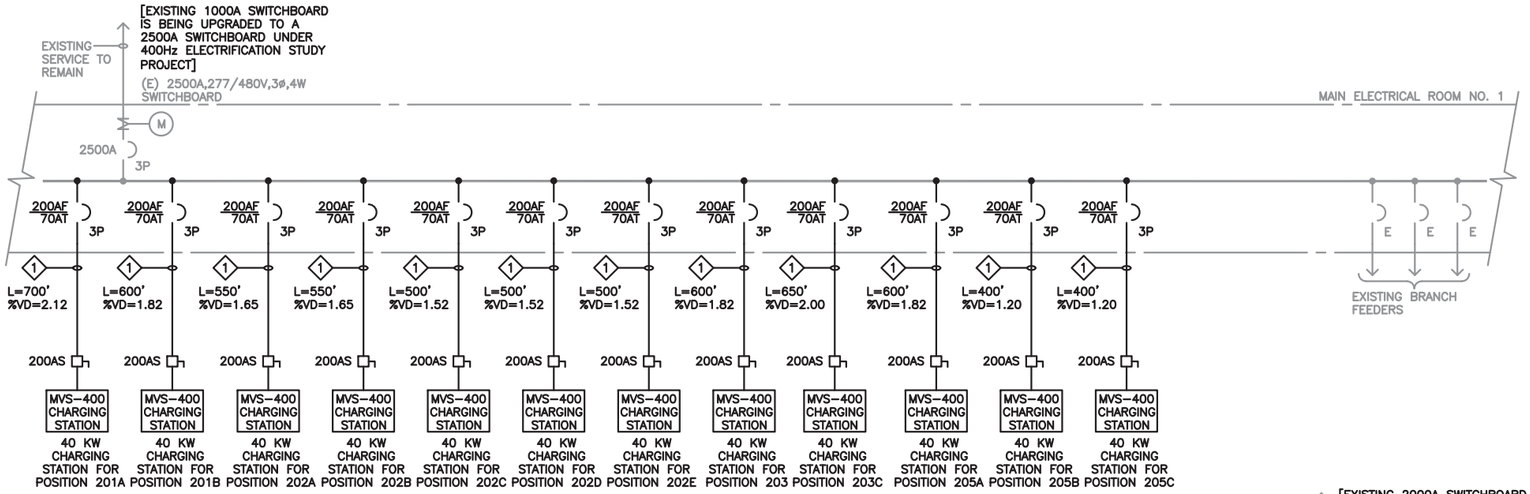
SITE
SITE ID #1

Date
06/24/2013

Scale
N.T.S.

Drawing No.
RONs-E21

P:\2013\2013-017-00\MPE\C_R_WEST (Existing).dwg Aug 14, 2013 - 3:48pm

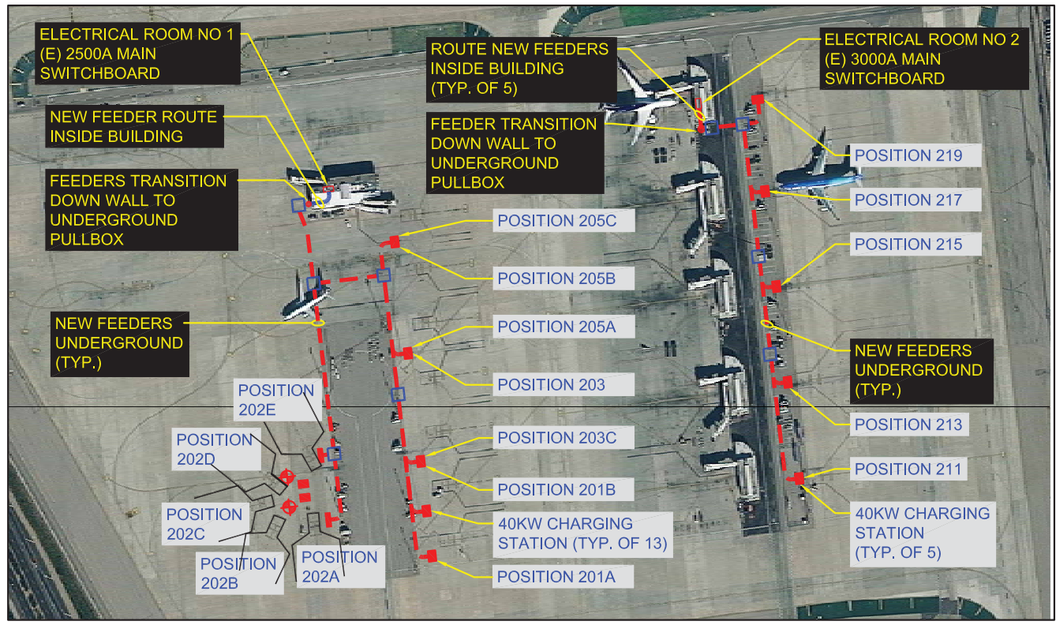


KEYNOTES:

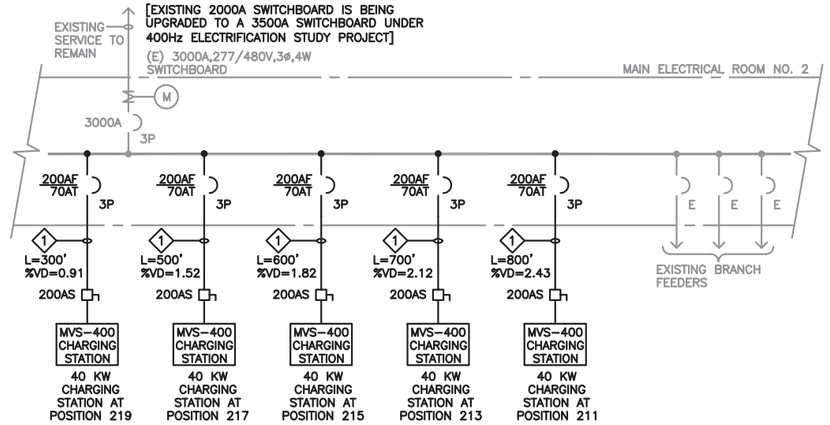
1. 2 1/2"C-3#1 + 1#6 GND.

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

POSITIONS 201, 203, & 205



(NOT TO SCALE & APPROXIMATE LOCATION ONLY)



POSITIONS 211, 213,215,217 & 219
PARTIAL SINGLE LINE DIAGRAMS

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 40 KW GPU	Additional Load @ 56A per 40 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
RONs West Clusters B & C	PMYD255-1509	278.4	348.0	523.5	12	672	0	672	1195.5	1000	800	-395.5	2500	1304.5	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.
RONs West Cluster A	APMYV277-5929	355.2	444.0	667.9	5	280	1000	1280	1947.9	2000	1600	-347.9	3000	1052.1	1) Service & Switchboard to be upgraded under 400Hz Electrification Project. 2) Existing board considered 80% rated. 3) New board considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☐ CARGO
- ☒ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
RONs West (PROPOSED DESIGN)

SITE
SITE ID #1

Date
06/24/2013

Scale
N.T.S.

Drawing No.
RONs-E22

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Singapore (Existing Conditions)

SITE
SITE ID #13

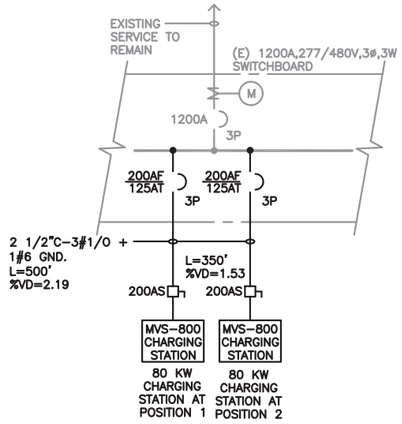
Date
06/24/2013

Scale
N.T.S.

Drawing No.
Singapore-E21

P:\2013\2013-017-00\MPE\C_Singapore (Existing).dwg Aug 14, 2013 - 3:49pm

(NOT TO SCALE & APPROXIMATE LOCATION ONLY)



POSITIONS 1 & 2

PARTIAL SINGLE LINE DIAGRAM

NEW ABOVE GROUND FEEDERS
NEW UNDERGROUND FEEDERS
NEW UNDERGROUND PULLBOX
NEW BATTERY CHARGING STATION

LOAD CALCULATION:

					Proposed Additions										
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service Size (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
Singapore Position 1 & 2	PMYD225-1285	94.8	118.5	178.2	2	200	200	400	578.2	1200	960	381.8	N/A	N/A	1) Existing Switchboard to remain. 2) Existing board considered 80% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
Singapore (PROPOSED DESIGN)

SITE
SITE ID #13

Date
06/24/2013

Scale
N.T.S.

Drawing No.
Singapore-E22

(NOT TO SCALE & APPROXIMATE LOCATION ONLY) N

EXISTING DISTRIBUTION SWITCHBOARD/PANEL

EXISTING BATTERY CHARGING STATION

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

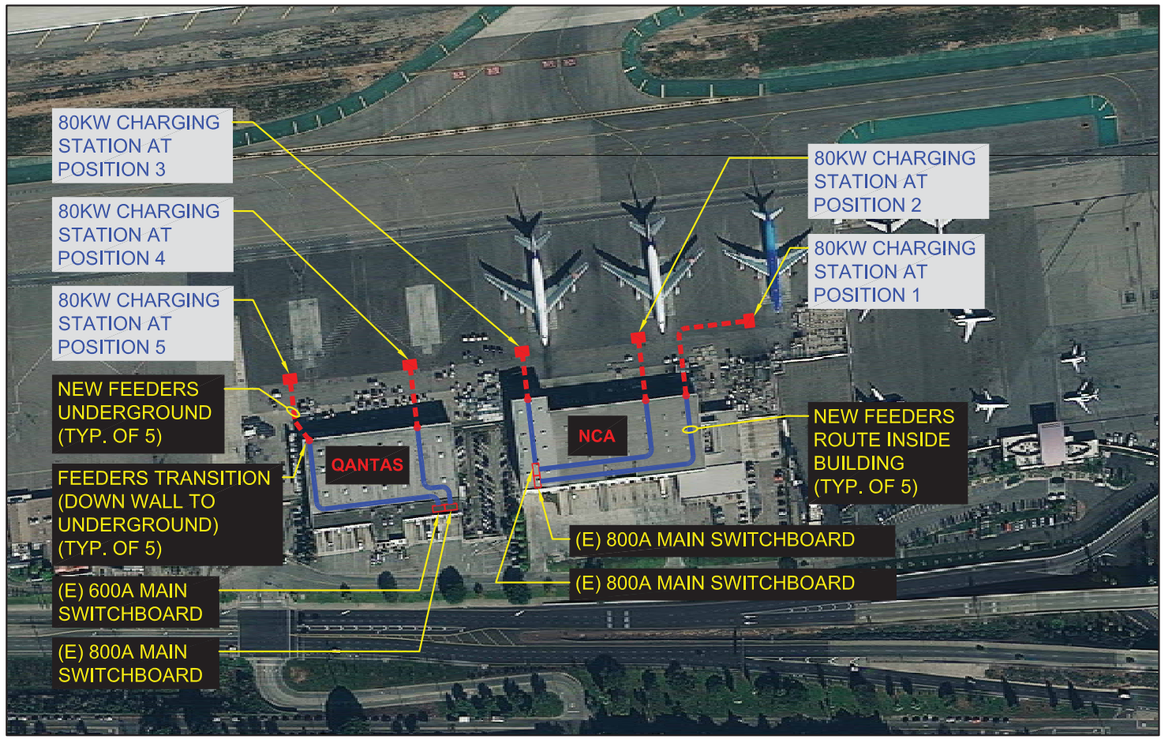
SITE NAME
South Pad (Existing Conditions)

SITE
SITE ID #12

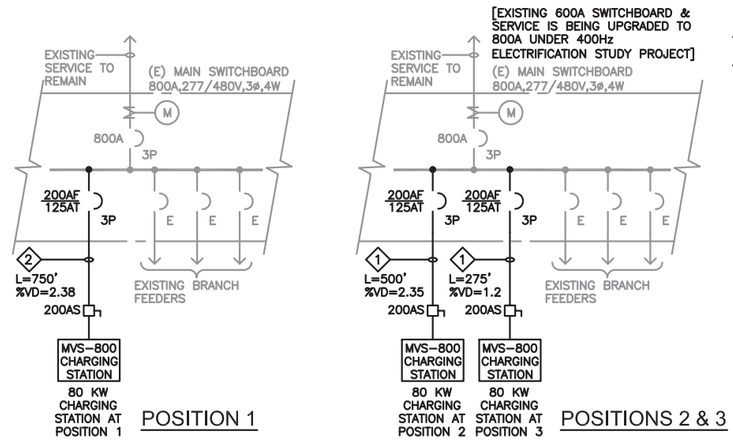
Date
06/24/2013

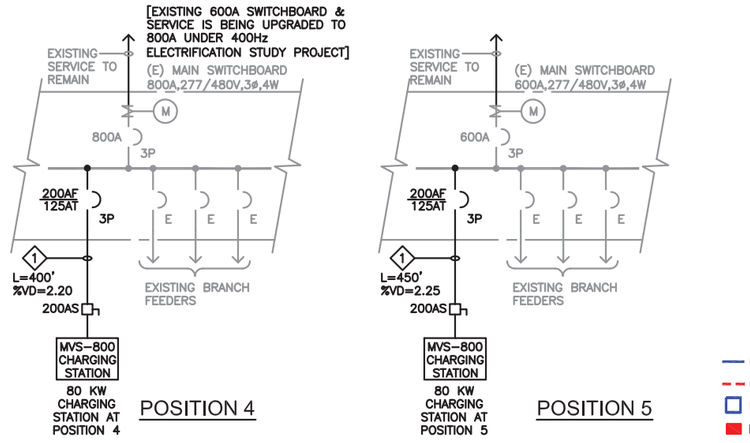
Scale
N.T.S.

Drawing No.
SouthPads-E21



(NOT TO SCALE & APPROXIMATE LOCATION ONLY)





KEYNOTES:

1. 2 1/2"C-3#1/0 + 1#6 GND.
2. 2 1/2"C-3#2/0 + 1#6 GND.

- NEW ABOVE GROUND FEEDERS
- NEW UNDERGROUND FEEDERS
- NEW UNDERGROUND PULLBOX
- NEW BATTERY CHARGING STATION

LOAD CALCULATION:

PARTIAL SINGLE LINE DIAGRAMS

					Proposed Additions									
				A		B	C	D (B+C)	E (A+D)		F	G (F-E)	H	I (H-E)	
Facility and Airplane Position	Existing Electric Meter Number	Existing Max. KW	Existing Max. KVA	Existing Max. Amps. Incl. 25% Per NEC 220.87 @ 480V	# of 80 KW Battery Charger	Additional Load @ 100A per 80 KW Battery Charger	Additional GPU Load (Amps)	Total Additional Electric Load Only (Amps)	Total Existing Plus Additional Electric Load (Amps)	Existing Service (Amps)	Existing Service Size @ 80% Rating (Amps)	Existing Spare Capacity (Amps)	New Service Size (Amps)	New Spare Capacity (Amps)	Summary
South Pads															
Position 1	PMYD222-7842	108.8	136.0	204.6	1	100	200	300	504.6	800	640	135.4	N/A	N/A	1) Existing switchboard to remain.
Position 2 & 3	PMYD209-27600	5.0	6.3	9.4	2	200	400	600	609.4	600	480	-129.4	800	190.6	1) Service & Switchboard to be upgraded under 400Hz Electrification Project.
Position 4	PMYD222-6401	83.2	104	156.4	1	100	200	300	456.4	600	480	23.6	800	343.6	1) Service & Switchboard to be upgraded under 400Hz Electrification Project.
Position 5	PMYD222-6402	53.6	67	100.8	1	100	200	300	400.8	600	480	79.2	N/A	N/A	1) Existing switchboard to remain.
															* All existing boards considered 80% rated.
															* All new boards considered 100% rated.

PBS ENGINEERS
2100 East Route 66, Suite 101 Glendora, CA 91740
T 626.650.0350 F 626.650.0352
Job No. 2013-017-00 www.pbsengineers.com
Mechanical Electrical Plumbing | Consulting Engineers

LAX Los Angeles World Airports

- ☐ MAINTENANCE
- ☒ CARGO
- ☐ RON
- ☐ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT
FOR DISCUSSION PURPOSE ONLY

Project Title
LOS ANGELES INTERNATIONAL AIRPORT
eletGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

SITE NAME
South Pads (PROPOSED DESIGN)

SITE
SITE ID #12

Date
06/24/2013

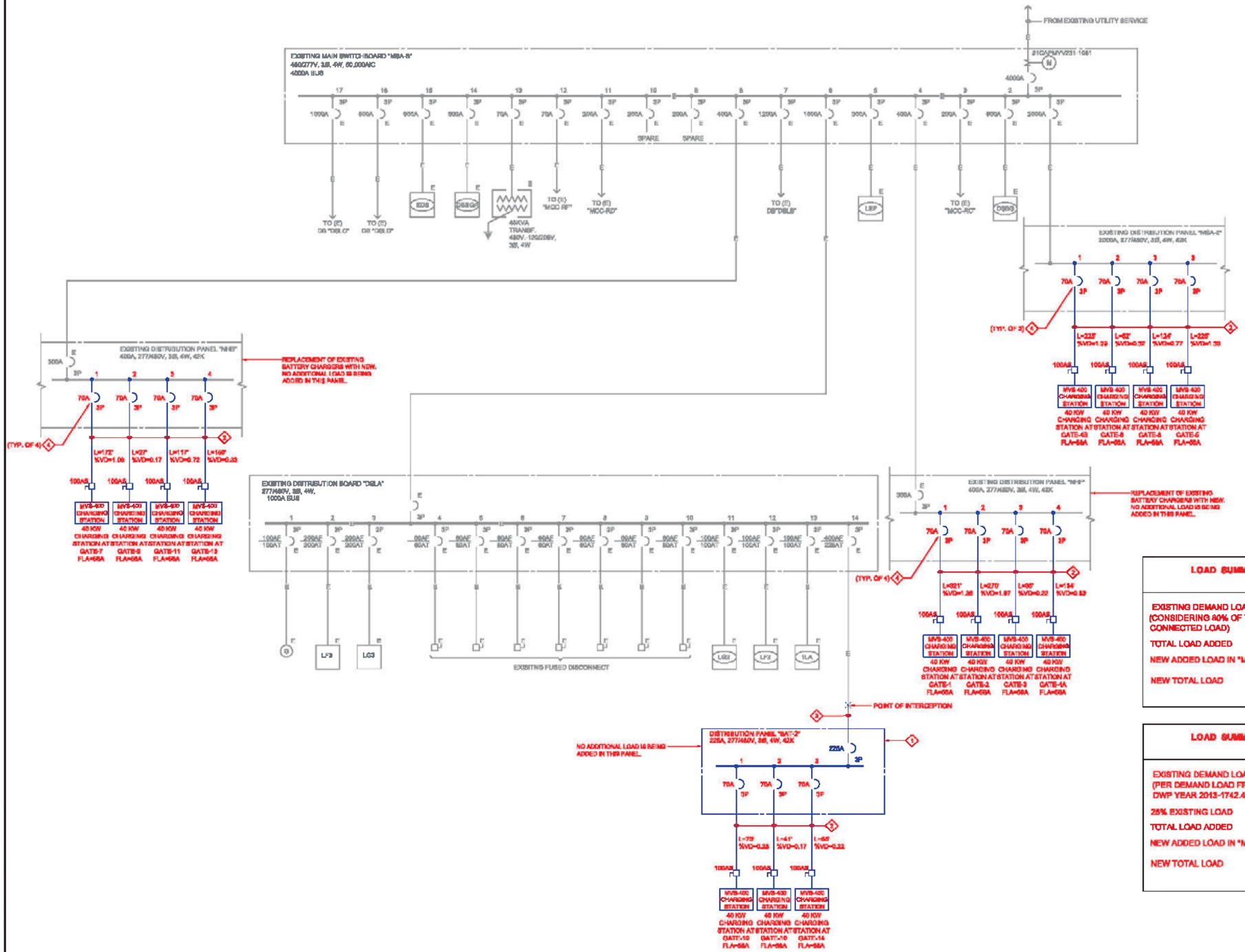
Scale
N.T.S.

Drawing No.
SouthPads-E22

SHEET KEY NOTES

1. REPLACE EXISTING PANEL WITH NEW.
2. PROVIDE AND INSTALL 2 1/2"C-3#4 & 1#6 G.N.D.
3. PROVIDE FEEDERS TO MATCH EXISTING.
4. PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE TO MATCH CHARACTERISTICS OF EXISTING DISTRIBUTION PANEL.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



PARTIAL SINGLE LINE DIAGRAM - "TERMINAL 1"

SCALE: N.T.S.

LOAD SUMMARY FOR DISTRIBUTION BOARD "MSA-2"
(480/277V, 3PH, 4W, 2000A)

EXISTING DEMAND LOAD (CONSIDERING 80% OF THE CONNECTED LOAD)	=	664.32 kVA
TOTAL LOAD ADDED		
NEW ADDED LOAD IN "MSA-2"	=	186 kVA
NEW TOTAL LOAD	=	850.32 kVA, 480/277V, 3PH, 4W 1023.86 AMPS

LOAD SUMMARY FOR DISTRIBUTION BOARD "MSA-B"
(480/277V, 3PH, 4W, 4000A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM DWP YEAR 2013-1742.4KW)	=	2178 kVA
25% EXISTING LOAD	=	544.5 kVA
TOTAL LOAD ADDED		
NEW ADDED LOAD IN "MSA-2"	=	186 kVA
NEW TOTAL LOAD	=	2908.5 kVA, 480/277V, 3PH, 4W 3502.53 AMPS

MAINTENANCE ☐ CARGO ☐ RSN ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
delftGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
SINGLE LINE DIAGRAM
TERMINAL 1 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
3765 Long Beach Blvd., Suite 410, Long Beach, CA 90807 | T 562.426.3900 / 800.540.0029 | F 562.426.3906 | San Jose, San Diego | Consulting Engineers

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T1-E01

P:\2013\2013-017-00\MPE\T1-E01.dwg Aug 14,2013-4:34pm
User: achalmers

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

GATE - 14
GATE - 12
GATE - 13
GATE - 10
GATE - 11
GATE - 8
GATE - 9
GATE - 6
GATE - 7
GATE - 4B
GATE - 5
GATE - 4A
GATE - 3
GATE - 2
GATE - 1


FED FROM (E) PANEL "SAT-N"


FED FROM (E) DIST. BD. NHB, CIRCUITS 1,3,5


FED FROM (E) DIST. BD. NHB, CIRCUITS 7,9,11


FED FROM (E) DIST. BD. NHB, CIRCUITS 13,15,17


FED FROM (E) DIST. BD. NHF, CIRCUITS 13,15,17


FED FROM (E) DIST. BD. NHB, CIRCUITS 8,10,12


FED FROM (E) DIST. BD. NHB, CIRCUITS 2,4,6

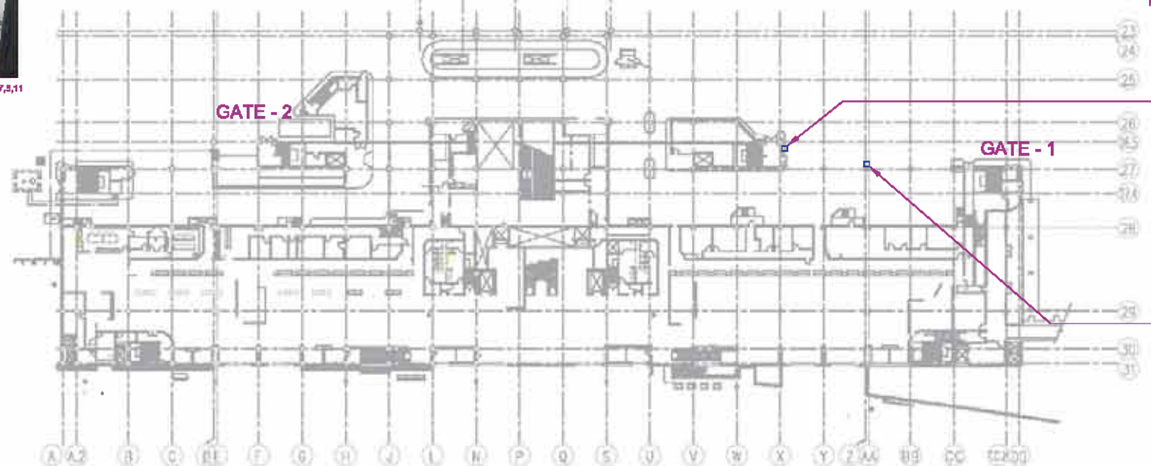

FED FROM (E) DIST. BD. NHF, CIRCUITS 7,9,11


FED FROM (E) DIST. BD. NHF, CIRCUITS 2,4,6


FED FROM (E) DIST. BD. NHF, CIRCUITS 8,10,12


30A DISCONNECT SWITCH WITH DIRECT PLUGGED IN FROM (E) DIST. BD. NHF, CIRCUITS 14,16,18


FED FROM (E) DIST. BD. NHF, CIRCUITS 1,3,5



N

1 OVERALL ELECTRICAL PLAN - TERMINAL 1 - LEVEL 2 (EXISTING CONDITIONS)

SCALE: N.T.S

MAINTENANCE ☐ CARGO ☐ ROH ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
det/GSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN TERMINAL 1 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
2100 West 7th Street, Los Angeles, California 90057
p. (213) 482-6300 f. (213) 482-6399
Western Electrical Contractors Association | Electrical Contractors Association

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T1-E21

P:\2013\2013-017-00\ARE\T1-E21.dwg Aug 14,2013 - 4:39pm
User: cchiong

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATION TO BE FIELD VERIFIED.

1 OVERALL ELECTRICAL PLAN - TERMINAL 1 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

N

MAINTENANCE ☐ CARGO ☐ RSN ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
delnGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE EQUIPMENT LOCATION PLAN - PROPOSAL
TERMINAL 1 - LEVEL 2

Professionals:
PBS ENGINEERS
LAX Los Angeles World Airports

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2015
Scale:	NONE
Job No.	2015-017-00

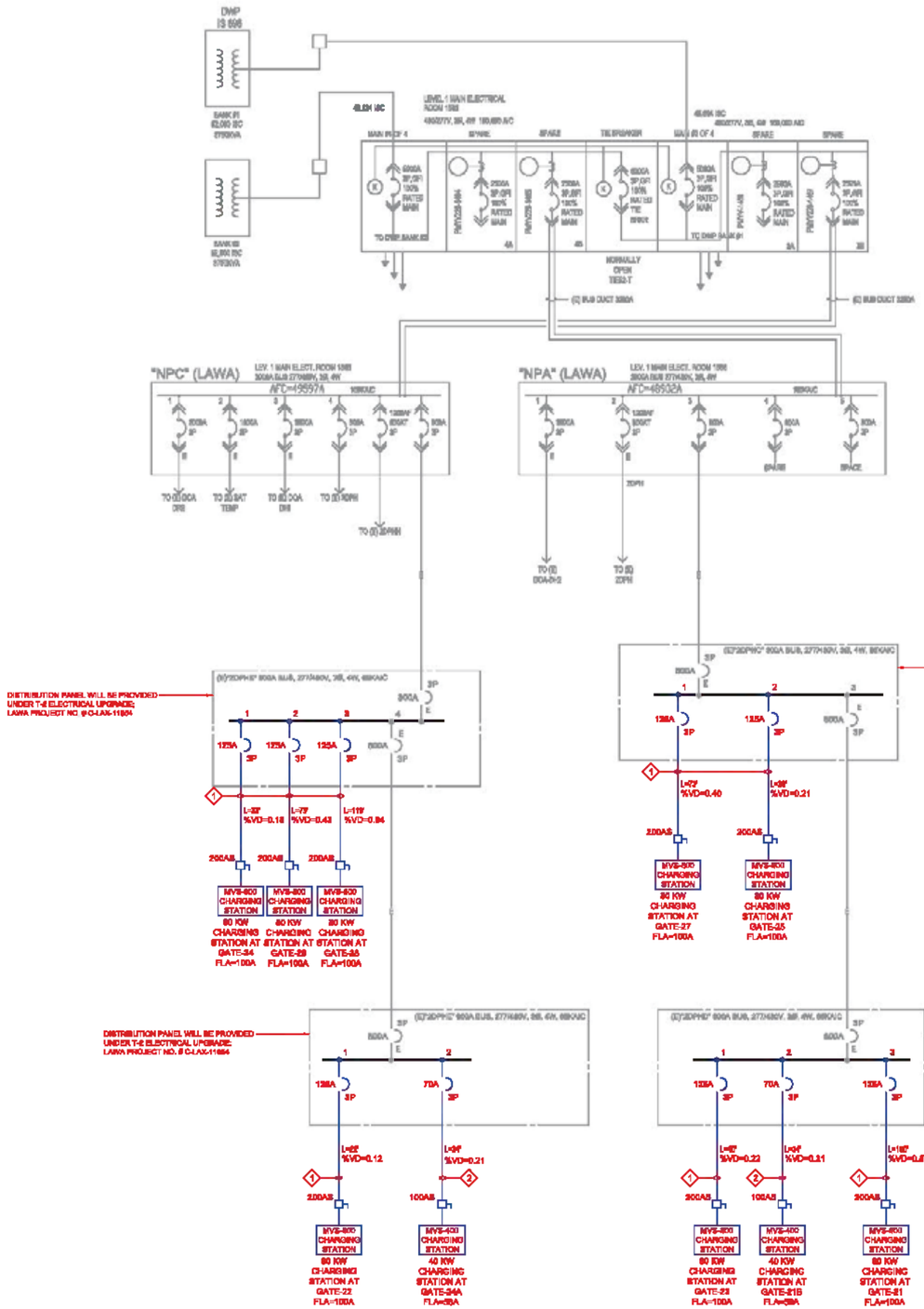
Sheet No:
T1-E22

P:\2015\2015-017-00\MPE\T1-E22--Proposal.dwg Aug 14,2015--4:36pm
User: achalma

SHEET KEY NOTES

1. PROVIDE & INSTALL 2 1/2"C. -3#1 & 1#6 GND.
2. PROVIDE & INSTALL 2 1/2"C. -3#4 & 1#6 GND.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



LOAD SUMMARY FOR DISTRIBUTION BOARD "NPC"
(480/277V, 3PH, 4W, 2600A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM DWP YEAR 2013-710.17KW)	=	887.72 kVA
25% EXISTING LOAD	=	221.93 kVA
TOTAL LOAD ADDED		
NEW ADDED LOAD IN "2DPHF"	=	378.68 kVA
NEW TOTAL LOAD	=	1488.91 kVA, 480/277V, 3PH, 4W 1732.28 AMPS

LOAD SUMMARY FOR DISTRIBUTION BOARD "NPA"
(480/277V, 3PH, 4W, 2600A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM DWP YEAR 2013-764KW)	=	955.14 kVA
25% EXISTING LOAD	=	238.78 kVA
TOTAL LOAD ADDED	=	378.68 kVA
NEW ADDED LOAD IN "2DPHC"	=	1572.58 kVA
NEW TOTAL LOAD	=	1572.58 kVA, 480/277V, 3PH, 4W 1583.78 AMPS

TERMINAL 2 - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
delt/GSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

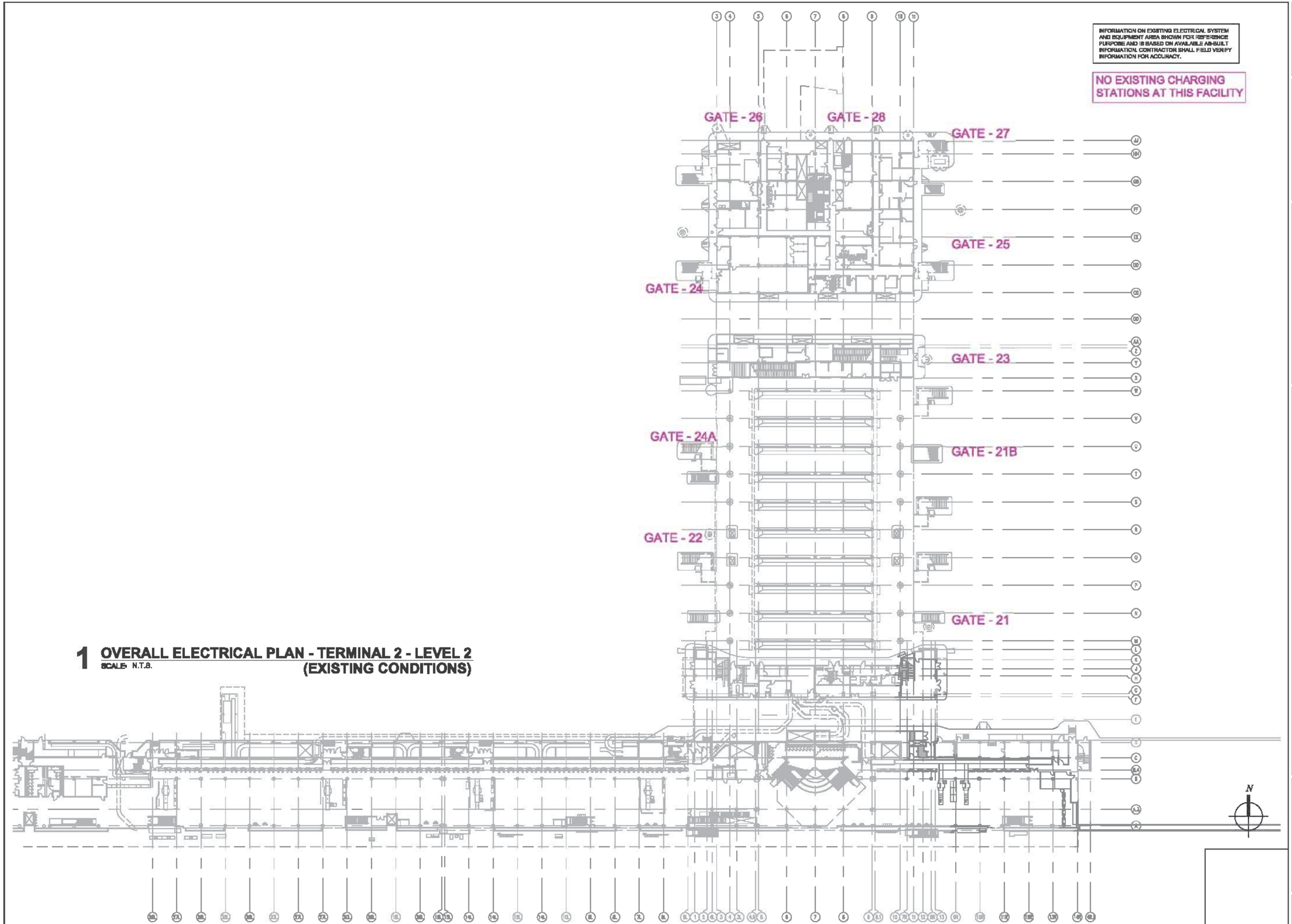
Sheet Title:
REMODEL SINGLE LINE DIAGRAM
TERMINAL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T2-E01

P:\2013\2013-017-00\MPE\T2-E01.dwg Aug 14,2013 - 4:35pm
User: achirino



1 OVERALL ELECTRICAL PLAN - TERMINAL 2 - LEVEL 2 (EXISTING CONDITIONS)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elintGSE FEASIBILITY STUDY
LOS ANGELES, CALFORNIA

Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN
TERMINAL 2 - LEVEL 2

Professionals:
LAX
PBS ENGINEERS

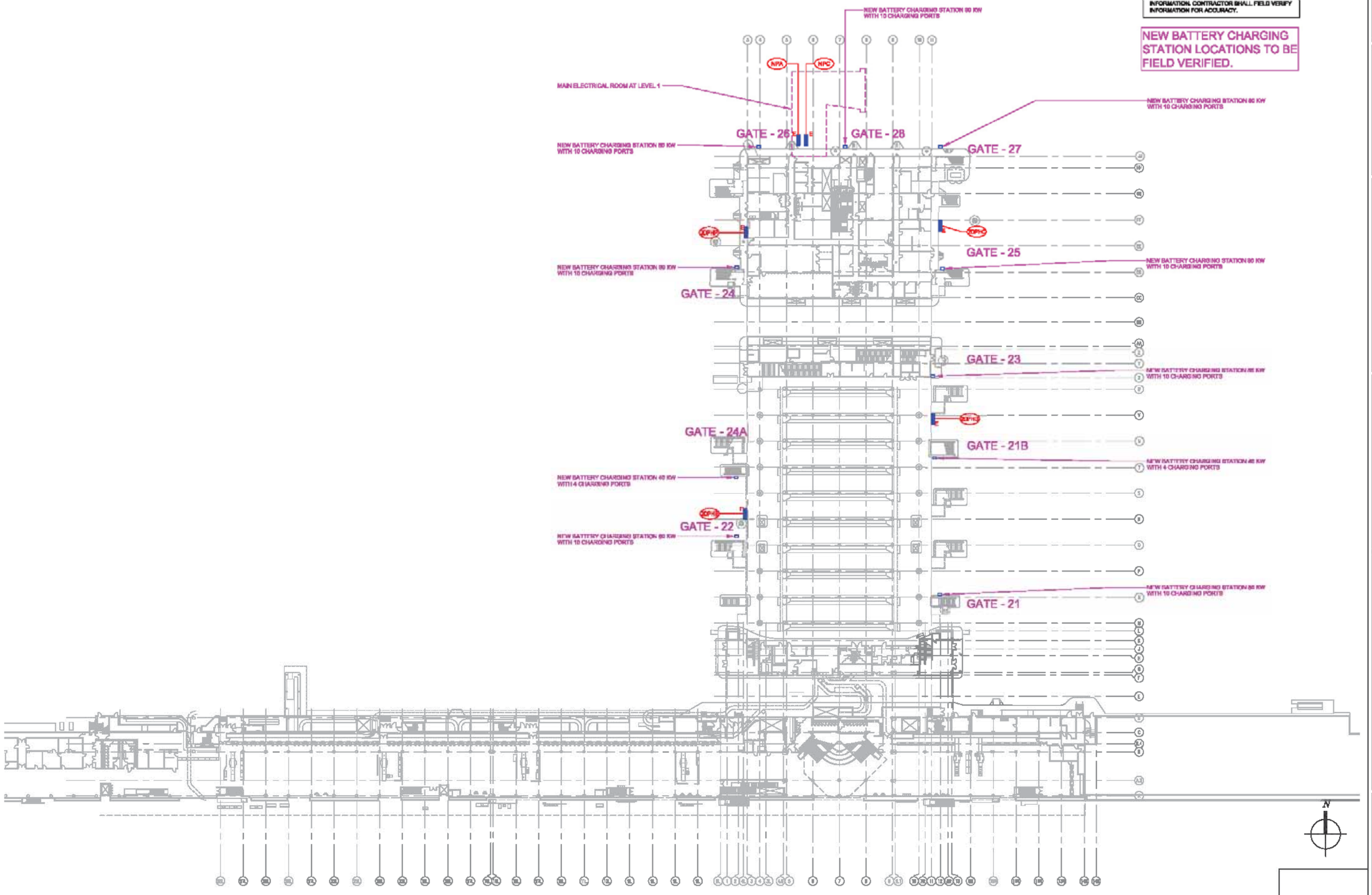
Drawn By:	V.R.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T2-E21

P:\2013\2013-017-00\ARF\T2-E21.dwg Aug 14,2013-4:39pm
User: ddelima

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATIONS TO BE FIELD VERIFIED.



1 OVERALL ELECTRICAL PLAN - TERMINAL 2 - LEVEL 2 (PROPOSED DESIGN)
SCALE N.T.S.

P:\2013\2013-017-00\APE\T2-E22-Proposed.dwg Aug 14,2013-4:39pm
User: achalmet

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elanGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE NEW EQUIPMENT LOCATION PLAN - PROPOSED
TERMINAL 2 - LEVEL 2

Professionals:
LAX
PBS ENGINEERS

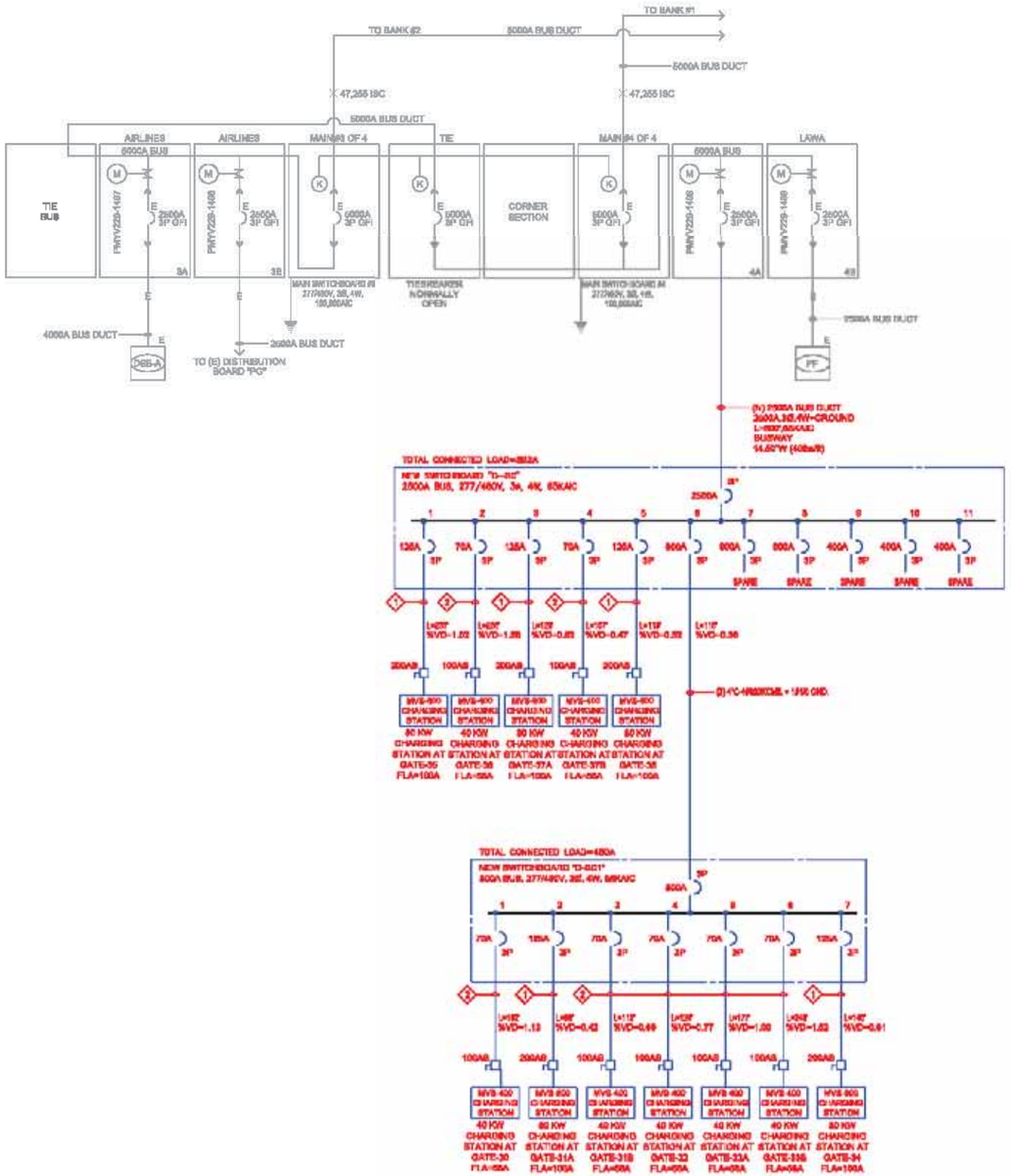
Drawn By:	V.R.
Checked By:	P.P.
Date:	06/24/2013
Scale:	1"=40'-0"
Job No.	2013-017-00

Sheet No:
T2-E22

SHEET KEY NOTES

1. PROVIDE 2 1/2"C. -3#1/0 & 1#6 GND.
2. PROVIDE 2 1/2"C. -3#4 & 1#6 GND.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



TERMINAL 3 - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elertGBE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
REMODEL SINGLE LINE DIAGRAM
TERMINAL 3

Professionals:
PBS ENGINEERS
LAX Los Angeles World Airports

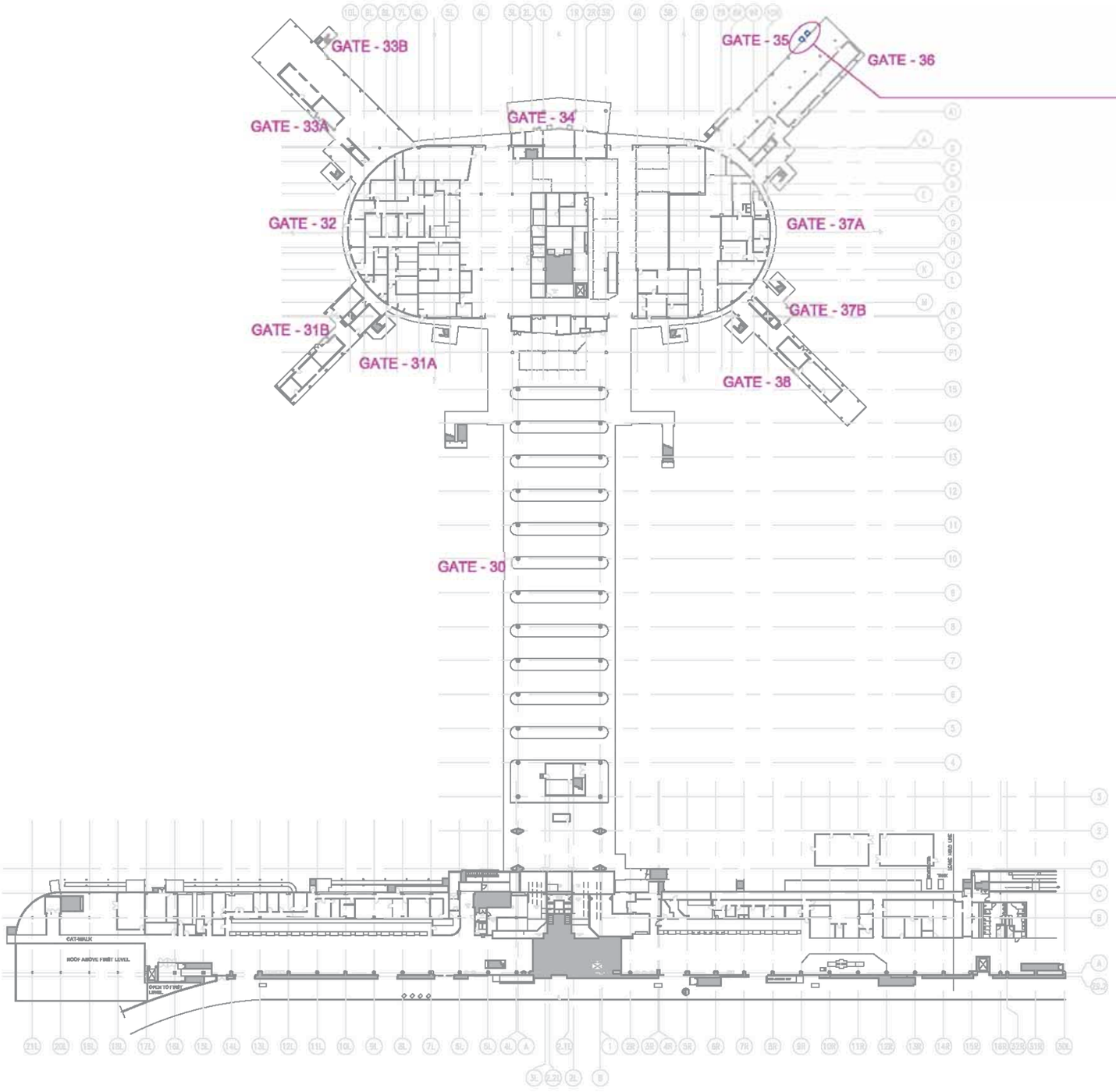
Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T3-E01

P:\2013\2013-017-00\APE\T3-E01.dwg Aug 14,2013-4:39pm
User: cdriano

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

SOURCE - UNKNOWN



1 **OVERALL ELECTRICAL PLAN - TERMINAL 3 - LEVEL 2 (EXISTING CONDITIONS)**
SCALE: N.T.S.

N

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elertGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

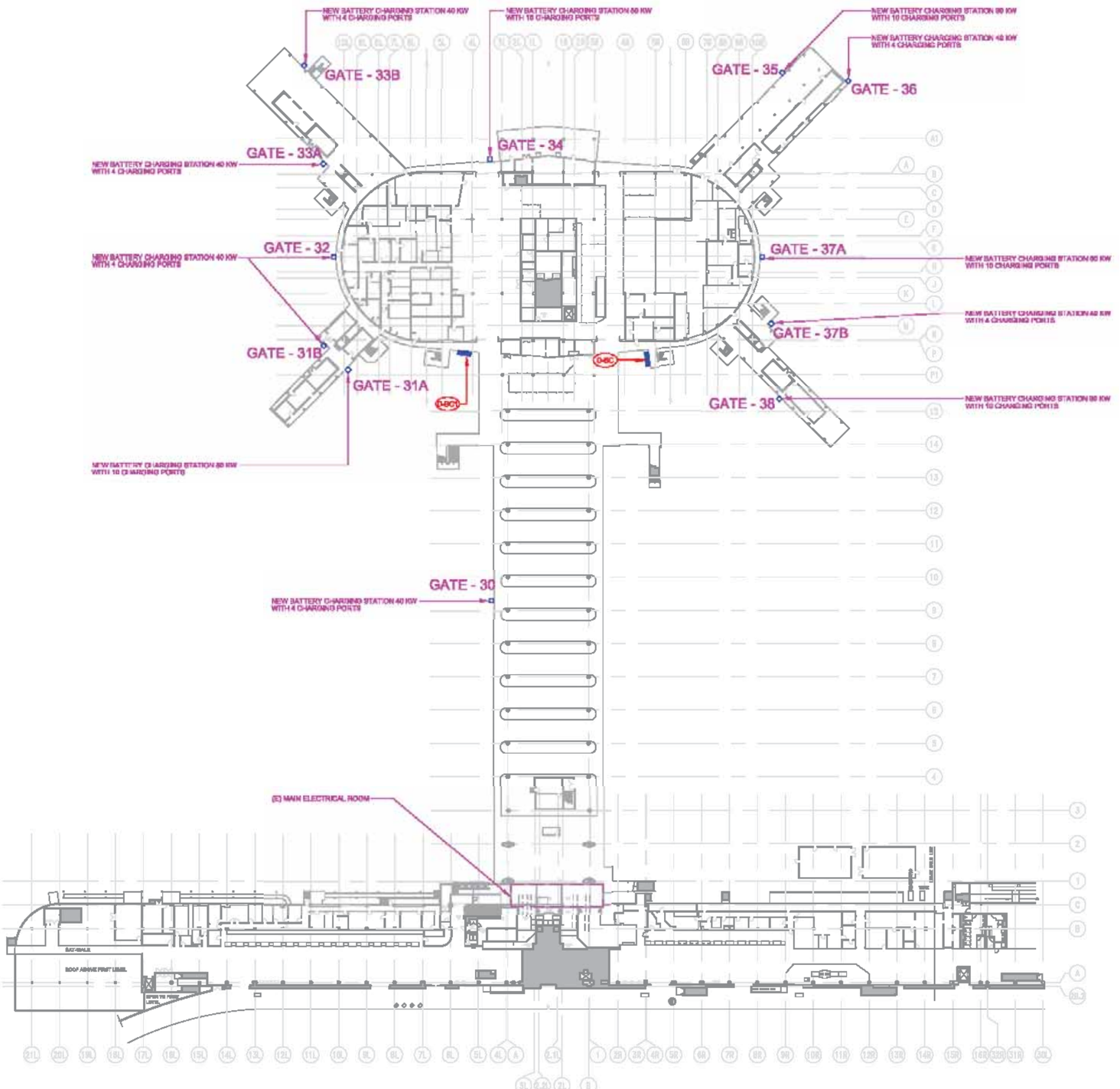
Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN
TERMINAL 3 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T3–E21

P:\2013\2013-017-00\MPE\T3-E21.dwg Aug 14,2013 - 4:35pm
User: ochavez



INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATIONS TO BE FIELD VERIFIED.

1 OVERALL ELECTRICAL PLAN - TERMINAL 3 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elmtGSE FEASIBILITY STUDY
LOS ANGELES, CALFORNIA

Sheet Title:
GSE NEW EQUIPMENT LOCATION PLAN
PROPOSED TERMINAL 3 - LEVEL 2

Professionals:
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

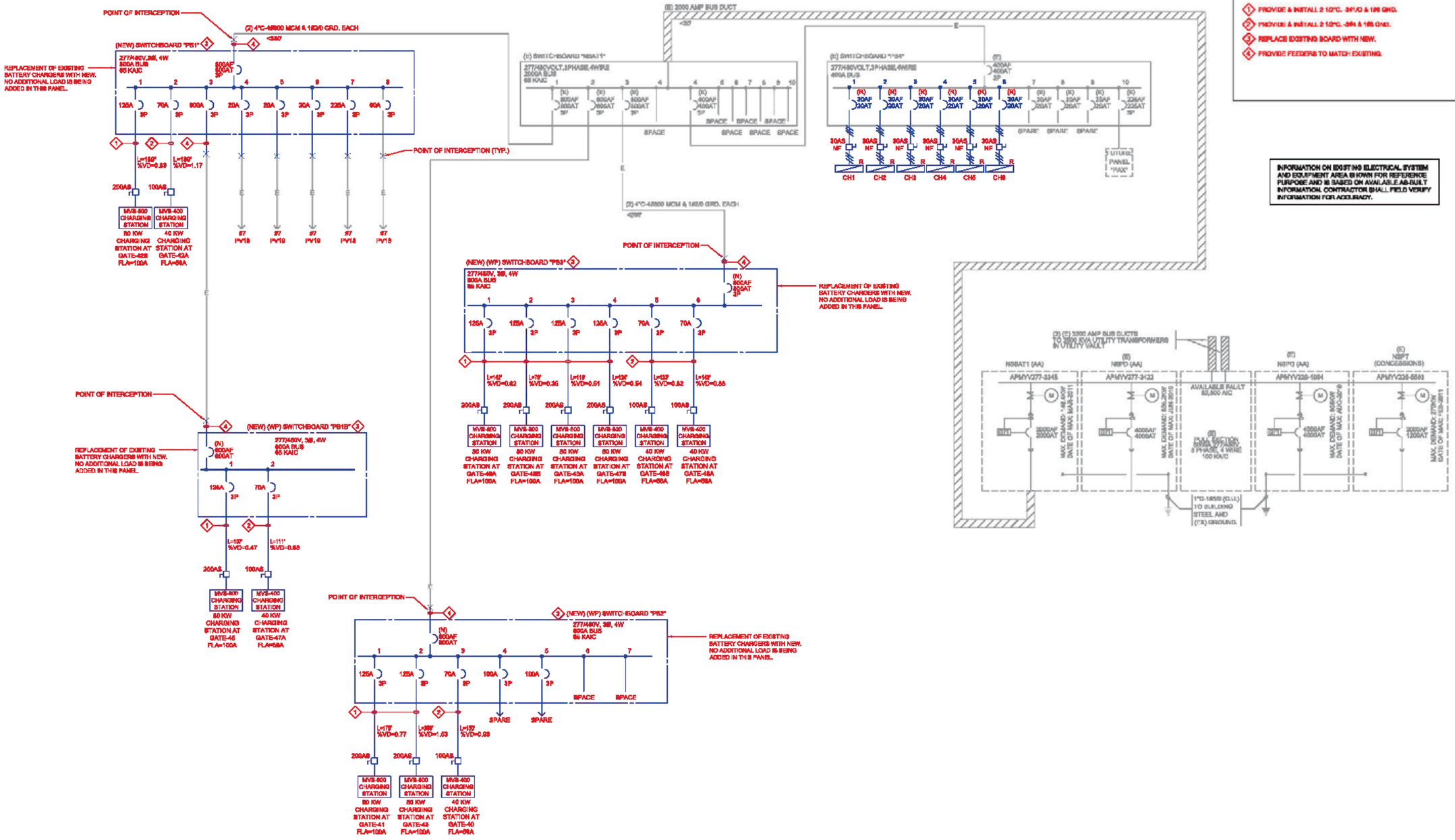
Sheet No:
T3-E22

P:\2013\2013-017-00\ARFE\T3-E22-Proposed.dwg Aug 14,2013-4:39pm
User: achohra

SHEET KEY NOTES

1. PROVIDE & INSTALL 2 1/2"C. 3#1/0 & 1#6 GND.
2. PROVIDE & INSTALL 2 1/2"C. -3#4 & 1#6 GND.
3. REPLACE EXISTING BOARD WITH NEW.
4. PROVIDE FEEDERS TO MATCH EXISTING.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



TERMINAL 4 - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
distGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
REMODEL SINGLE LINE DIAGRAM
TERMINAL 4

Professionals:
PBS ENGINEERS
LAX Los Angeles World Airports

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T4-E01

P:\2013\2013-017-00\MPE\T4-E01.dwg Aug 14,2013--4:39pm
User: achavez

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

GATE - 41

GATE - 40

GATE - 43

GATE - 42A

GATE - 45

GATE - 42B

GATE - 47A

GATE - 46A

GATE - 47B

GATE - 46B

GATE - 48B

GATE - 48A

GATE - 49A

FED FROM (E) DIST. BD. PB-1


FED FROM (E) DIST. BD. PB1-1, PB1-2 & PB1-3


FED FROM (E) DIST. BD. PB1B


FED FROM (E) DIST. BD. PB-3


FED FROM (E) DIST. BD. PB-3


SOURCE - UNKNOWN


FED FROM (E) DIST. BD. PB-3


FED FROM (E) DIST. BD. PB-2


SOURCE - UNKNOWN


FED FROM (E) DIST. BD. PB-3


FED FROM (E) DIST. BD. PB-3


FED FROM (E) DIST. BD. PB-3

FED FROM (E) DIST. BD. PB-3

FED FROM (E) DIST. BD. PB-3

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 4 - LEVEL 2 (EXISTING CONDITIONS)
SCALE: N.T.S.

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN
CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elec/GSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

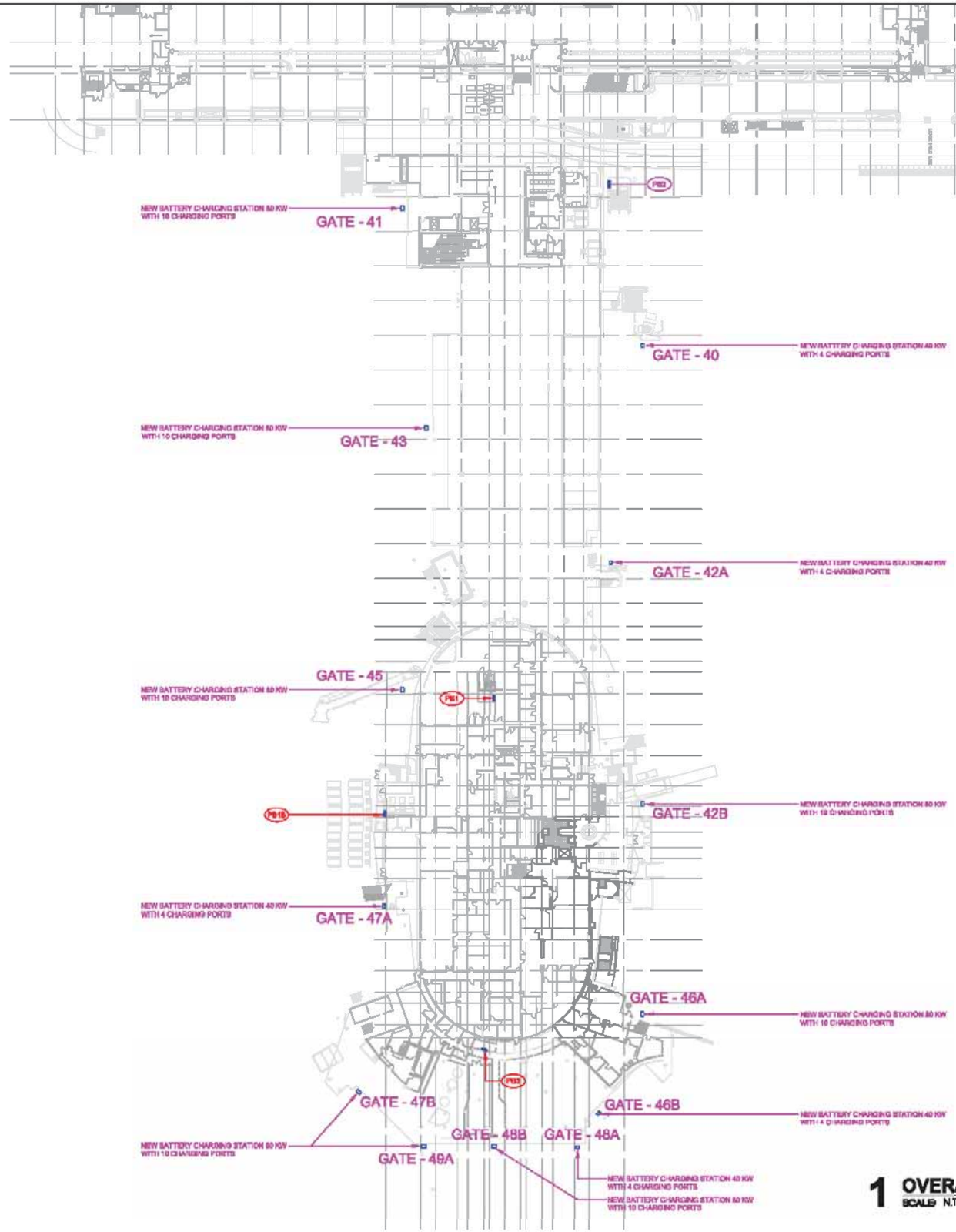
Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN
TERMINAL 4 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
3100 East Florida #8, Suite 101 Glendora, CA
ph. No. 951.280.0000 | 626.852.0200
Mechanical Electrical Plumbing | Commissioning | Engineering

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T4-E21

P:\2013\2013-017-00\WPE\T4-E21.dwg Aug 14,2013 - 4:39pm
User: dchlintez



INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATIONS TO BE FIELD VERIFIED.

1 OVERALL ELECTRICAL PLAN - TERMINAL 4 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
delnGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE NEW EQUIPMENT LOCATION PLAN
PLAN PROPOSED
TERMINAL 4 - LEVEL 2

Professionals:
PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T4-E22

P:\2013\2013-017-00\MPE\T4-E22-Proposed.dwg Aug 14,2013-4:39pm
User: achilmz

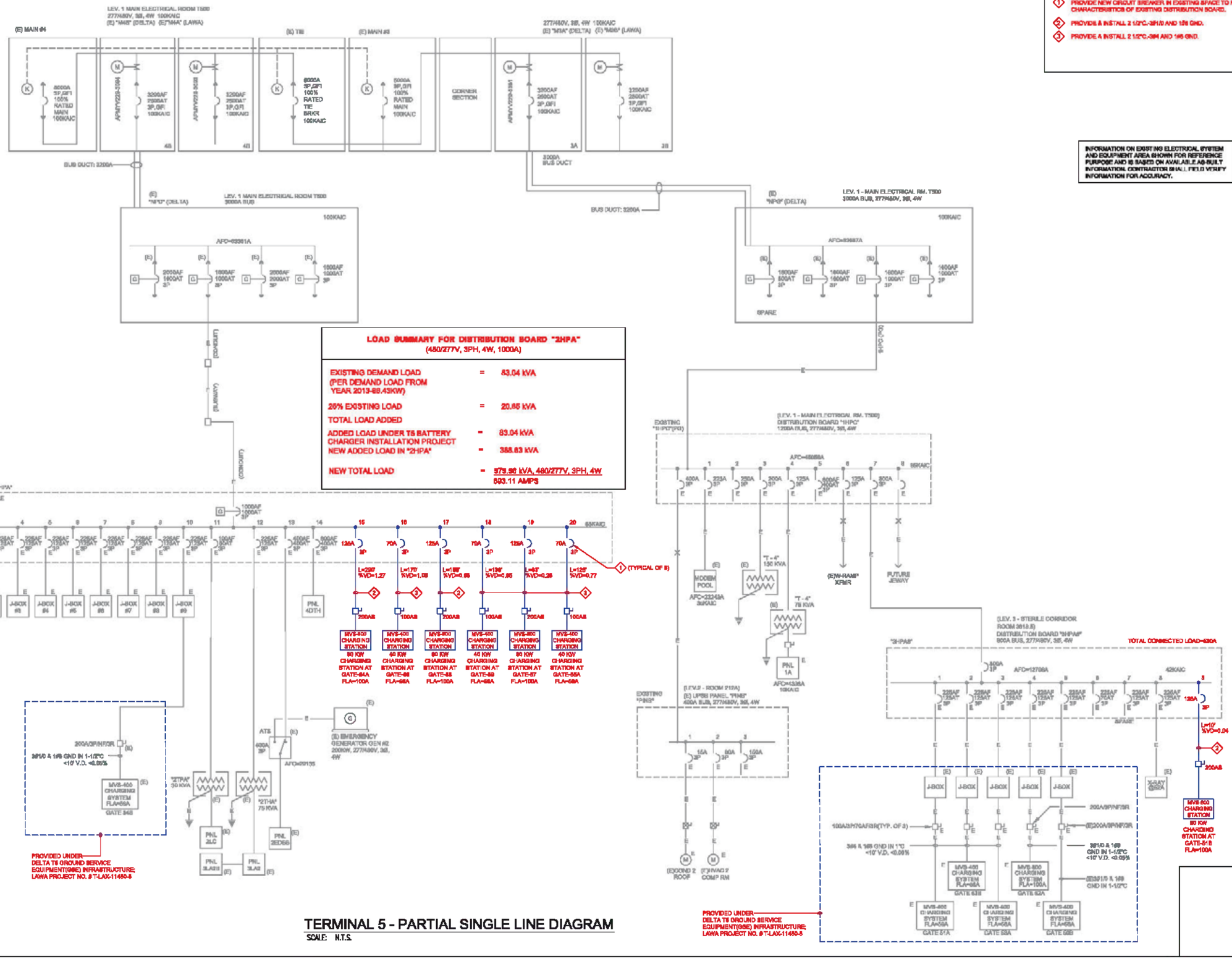
SHEET KEY NOTES

1. PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE TO MATCH CHARACTERISTICS OF EXISTING DISTRIBUTION BOARD.
2. PROVIDE & INSTALL 2 1/2"C.-3PH,G AND 1/0 GND.
3. PROVIDE & INSTALL 2 1/2"C.-3PH AND 1/0 GND.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

LOAD SUMMARY FOR DISTRIBUTION BOARD "2HPA"
(480/277V, 3PH, 4W, 1000A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM YEAR 2013-88.43KW)	=	83.04 kVA
25% EXISTING LOAD	=	20.85 kVA
TOTAL LOAD ADDED		
ADDED LOAD UNDER TS BATTERY CHARGER INSTALLATION PROJECT	=	83.04 kVA
NEW ADDED LOAD IN "2HPA"	=	388.83 kVA
NEW TOTAL LOAD	=	979.96 kVA, 480/277V, 3PH, 4W 693.11 AMPS



TERMINAL 5 - PARTIAL SINGLE LINE DIAGRAM
SCALE: N.T.S.

MAINTENANCE ☐ CARGO ☐ RSH ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
distGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
REMODEL SINGLE LINE DIAGRAM
TERMINAL 5

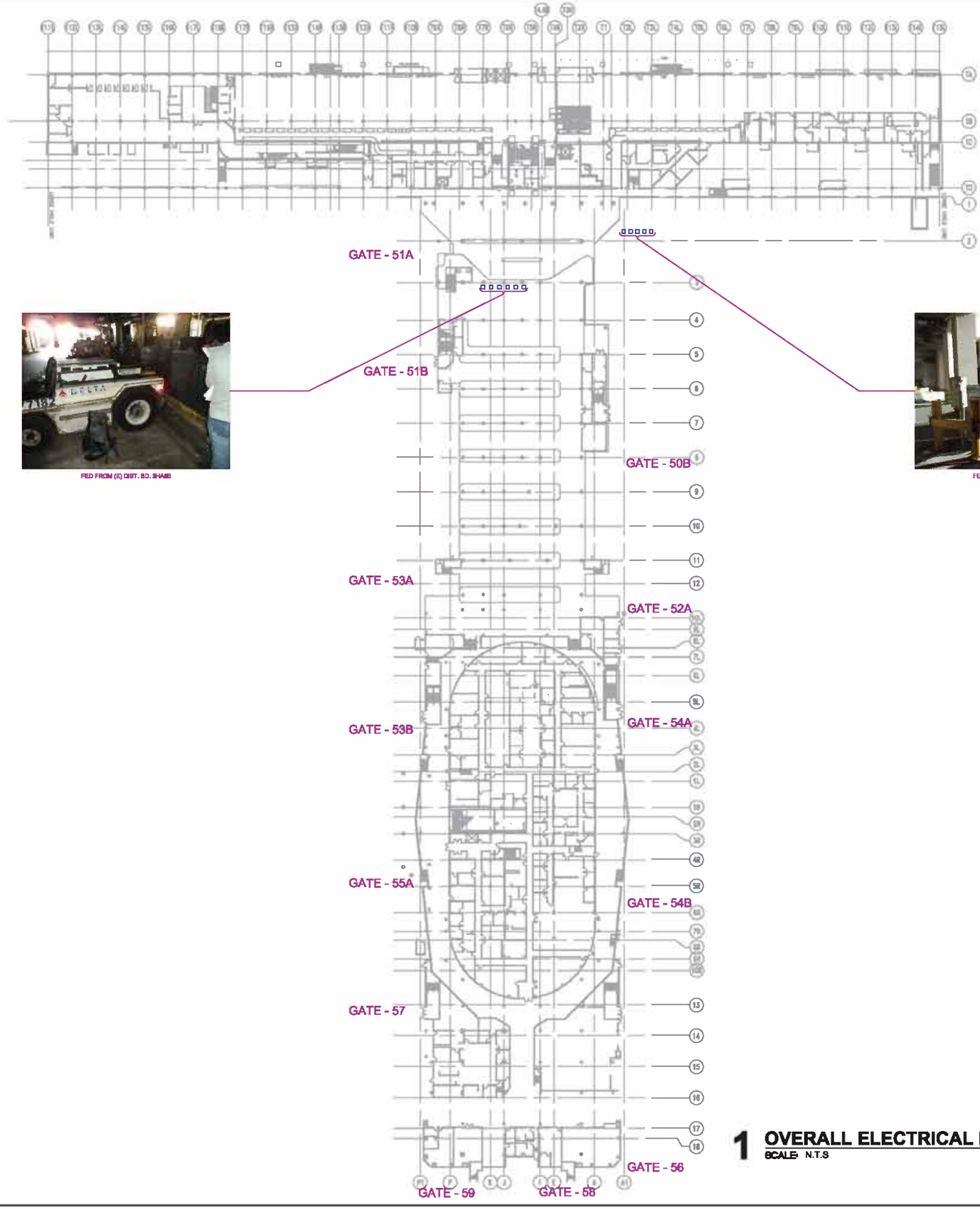
Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
3200 East Guasti Rd. Suite 100, Ontario, CA 91761 T 909.390.0900 F 909.390.0905
Los Angeles | Riverside | Orange County | Phoenix

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T5-E01

P:\2013\2013-017-00\APE\T5-E01.dwg Aug 14,2013 - 4:36pm
User: achdms

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



FED FROM (E) DIST. BD. 3HA8B

FED FROM (E) DIST. BD. 3HPA8

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 5 - LEVEL 2 (EXISTING CONDITIONS)
SCALE: N.T.S

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elektGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN
TERMINAL 5 - LEVEL 2

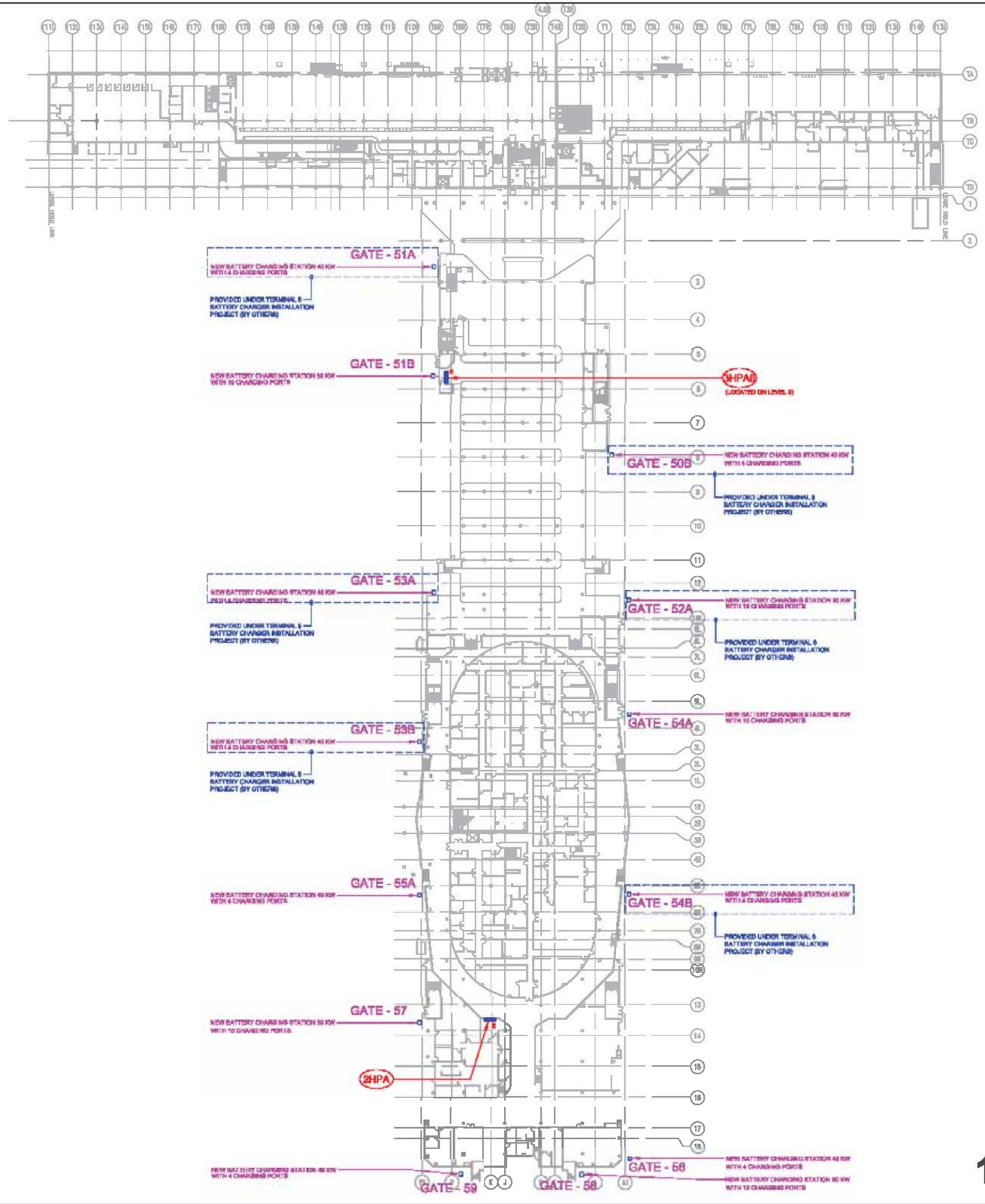
Professionals:
PBS ENGINEERS
3120 East Mesa St., Suite 101 Ontario, CA
Ph No. 909.390.0888 Fax 909.390.0889
Mahmud Rashid Pandey

LAX Los Angeles World Airports

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T5-E21

P:\2013\2013-017-00\MPE\T5-E21.dwg Aug 14,2013-4:37pm
User: achavez



INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATION TO BE FIELD VERIFIED.

1 OVERALL ELECTRICAL PLAN - TERMINAL 5 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
clientGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE NEW EQUIPMENT LOCATION PLAN PROPOSED
TERMINAL 5 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
2001 Land Rover Dr., Suite 110 Glendora, CA
T: 626.852.0000 / 888.600.0000
Architecture | Engineering | Planning | Consulting | Program Management

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

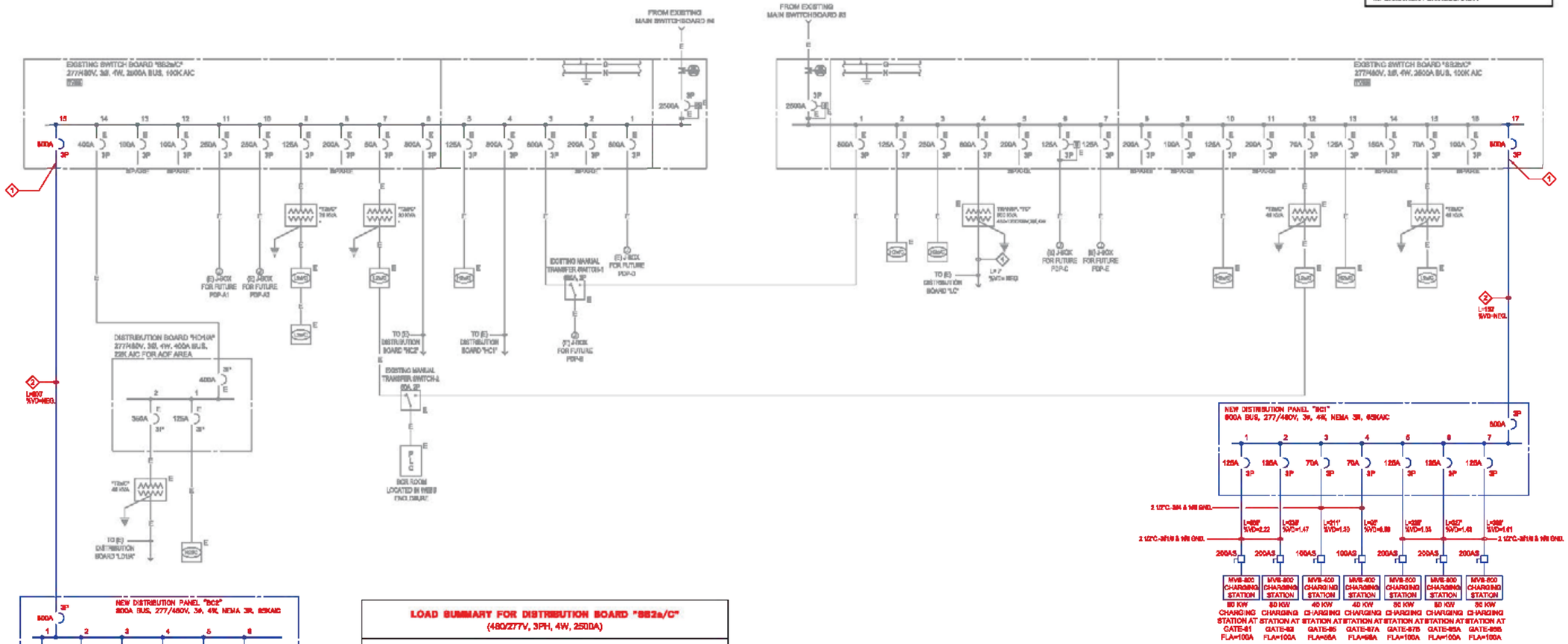
Sheet No:
T5-E22

P:\2013\2013-017-00\ARFE\T5-E22-Proposed.dwg Aug 14,2013-4:37pm
User: achatma

SHEET KEY NOTES

1. PROVIDE NEW 800A, 3P CIRCUIT BREAKER IN EXISTING SPACE TO MATCH CHARACTERISTICS OF EXISTING DISTRIBUTION BOARD.
2. PROVIDE AND INSTALL (2)#1"C-#600 KCMIL AND 1#1/0 GND.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



LOAD SUMMARY FOR DISTRIBUTION BOARD "SB2a/C"
(480/277V, 3PH, 4W, 2500A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM DWP YEAR 2013-218KW)	=	270 kVA
25% EXISTING LOAD	=	67.5 kVA
TOTAL LOAD ADDED		
NEW ADDED LOAD IN "BC2"	=	425 kVA
NEW TOTAL LOAD	=	782.5 kVA, 480/277V, 3PH, 4W 918.23 AMPS

LOAD SUMMARY FOR DISTRIBUTION BOARD "SB2b/C"
(480/277V, 3PH, 4W, 2500A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM DWP YEAR 2013-132KW)	=	165 kVA
25% EXISTING LOAD	=	41.25 kVA
TOTAL LOAD ADDED		
NEW ADDED LOAD IN "BC1"	=	509 kVA
NEW TOTAL LOAD	=	715.25 kVA, 480/277V, 3PH, 4W 861.33 AMPS

TERMINAL 6 - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title: LOS ANGELES INTERNATIONAL AIRPORT dist/GSE FEASIBILITY STUDY LOS ANGELES, CALIFORNIA

Sheet Title: REMODEL SINGLE LINE DIAGRAM TERMINAL 6

Professionals: LAX Los Angeles World Airports; PBS ENGINEERS

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-07-00

Sheet No: T6-E01

P:\2013\2013-07-00\MFE\T6-E01.dwg Aug 14,2013-4:37pm
User: achahine

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

FED FROM (E) DIST. BD. R4C1B, CIRCUITS 1,3,5

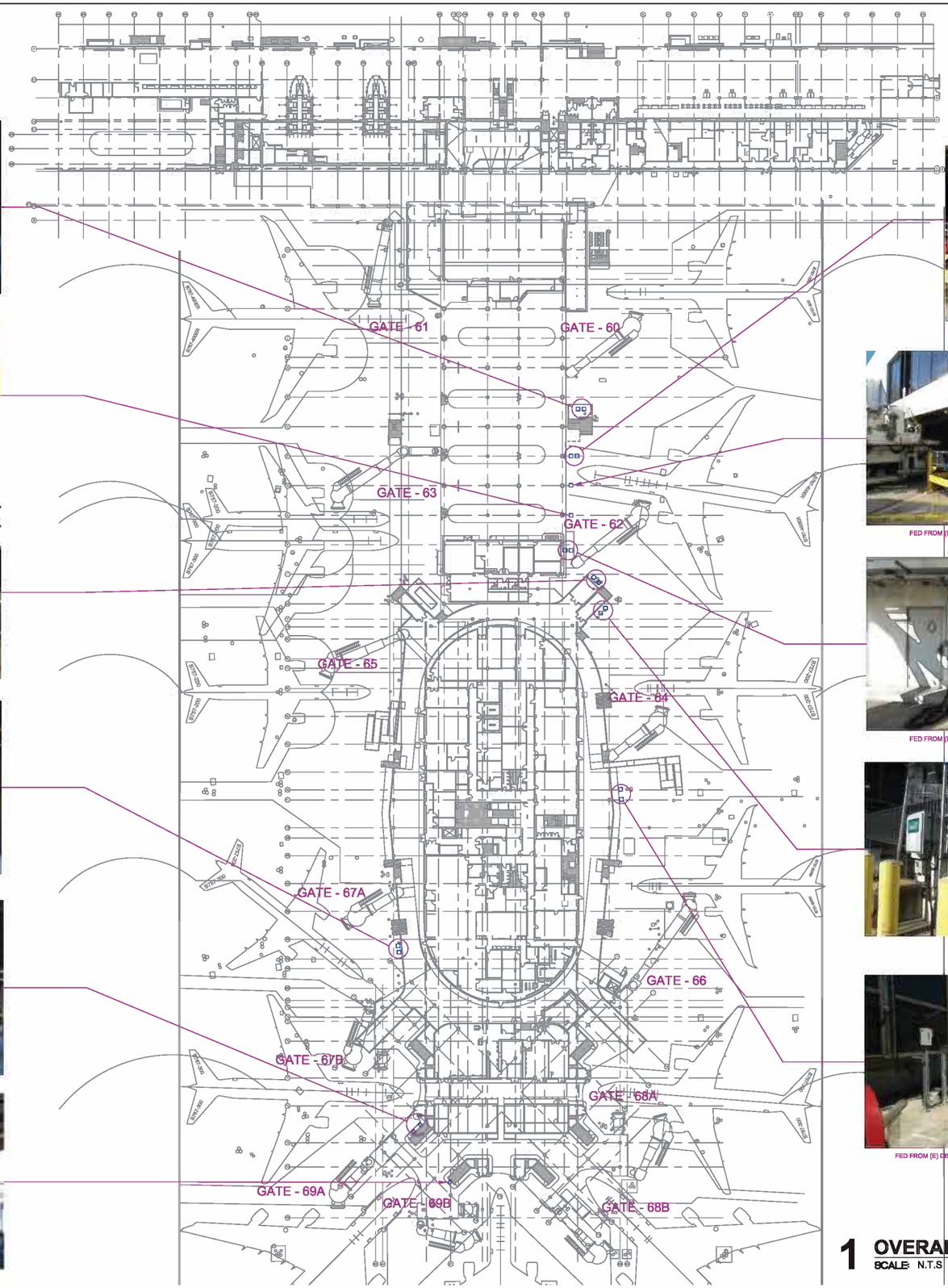
FED FROM (E) DIST. BD. R4C1B, CIRCUITS 1,3,5

FED FROM (E) DIST. BD. R4C1B, CIRCUITS 1,3,5

BC-4 FED FROM (E) DIST. BD. P-70
BC-5 FED FROM (E) DIST. BD. P-70

FED FROM (E) DIST. BD. HUPA4, CIRCUITS 25,27,29,31,33,35,35,40,42

SOUCE-UNKNOWN



FED FROM (E) DIST. BD. R4C1B, CIRCUITS 1,3,5

FED FROM (E) DIST. BD. R4C1B, CIRCUITS 1,3,5

FED FROM (E) DIST. BD. R4C1B, CIRCUITS 1,3,5

SOUCE-UNKNOWN

FED FROM (E) DIST. BD. PCA1, CIRCUITS 7,9,11,13,15,17

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 6 - LEVEL 2 (EXISTING CONDITIONS)

SCALE: N.T.S

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elevtGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

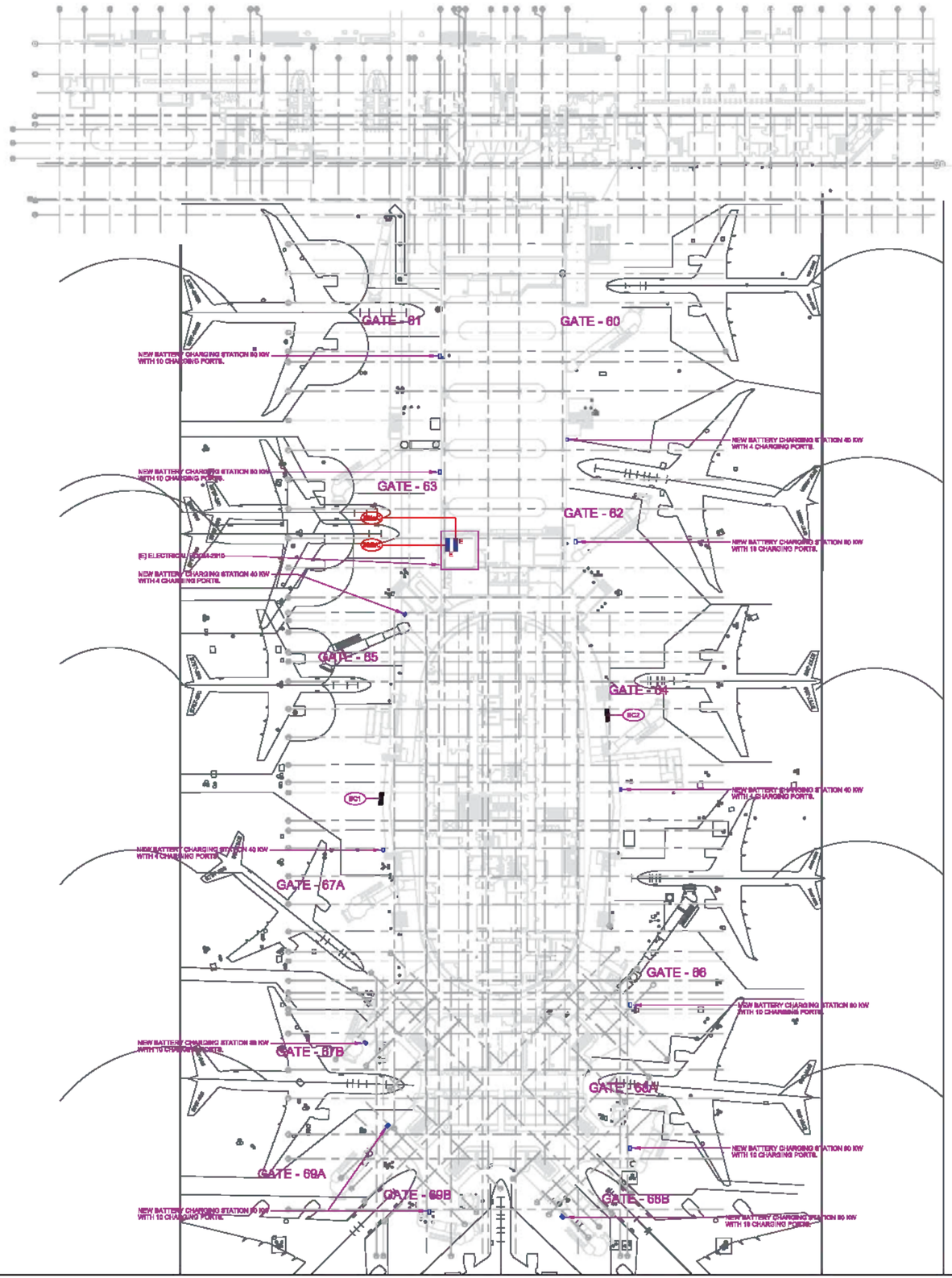
Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN
TERMINAL 6 - LEVEL 2

Professionals:
PBS ENGINEERS
2100 East Florida Rd, Suite 101 Glendora, CA
p. No. 201 | T 626.963.0300 | F 626.963.0308
Mechanical Electrical Plumbing | Commissioning | Engineers

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T6-E21

P:\2013\2013-017-00\MPE\T6-E21.dwg Aug 14,2013-4:38pm
User: acharez



INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATION TO BE FIELD VERIFIED.

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 6 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RSH ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSS ON PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elektGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE NEW EQUIPMENT LOCATION PLAN -PROPOSED
TERMINAL 6 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
2964 East Spring Street, Suite 310, Long Beach, CA 90806
T 562.426.8000 | F 562.426.8200
San Diego | Riverside | Orange County | Los Angeles

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T6-E22

P:\2013\2013-017-00\MFE\T6-E22-Proposed.dwg Aug 14,2013-4:39pm
User: achilmz

SHEET KEY NOTES

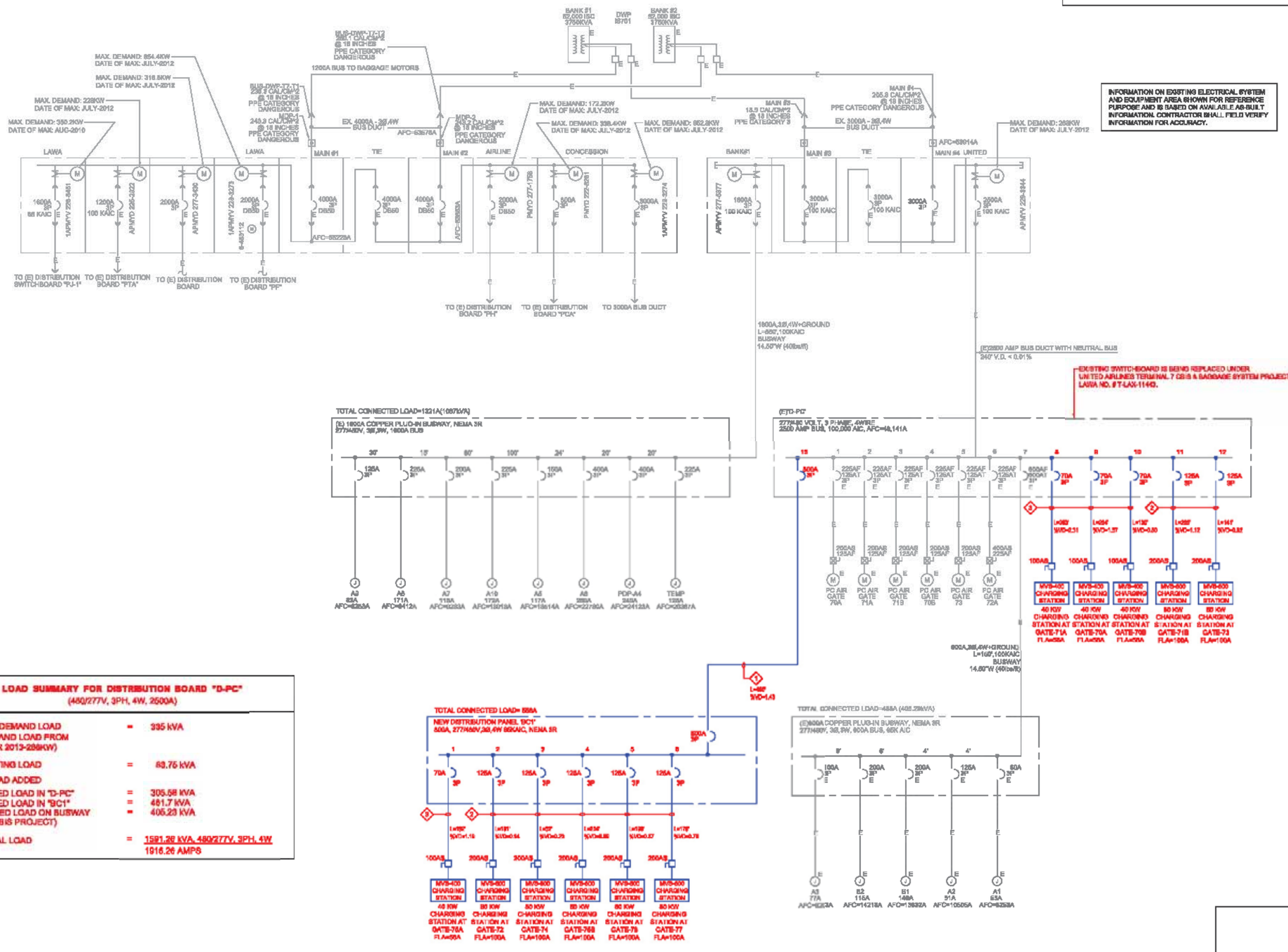
1. PROVIDE & INSTALL (3)#1-4/0AWG XHHW, AND 1#1/0 GND.
2. PROVIDE & INSTALL 2 1/2"C.-3#1/0 AND 1#6 GND.
3. PROVIDE & INSTALL 2 1/2"C.-3#4 AND 1#6 GND.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



LOAD SUMMARY FOR DISTRIBUTION BOARD "D-PC"
(480/277V, 3PH, 4W, 2500A)

EXISTING DEMAND LOAD (PER DEMAND LOAD FROM DWP YEAR 2013-298KW)	=	335 kVA
25% EXISTING LOAD	=	83.75 kVA
TOTAL LOAD ADDED		
NEW ADDED LOAD IN "D-PC"	=	305.58 kVA
NEW ADDED LOAD IN "DC1"	=	461.7 kVA
CONNECTED LOAD ON BUSWAY (UNDER CBIS PROJECT)	=	405.23 kVA
NEW TOTAL LOAD	=	1591.26 kVA, 480/277V, 3PH, 4W 1916.26 AMPS

TERMINAL 7 - PARTIAL SINGLE LINE DIAGRAM
SCALE: N.T.S.

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
clientGSE FEASIBILITY STUDY
LOS ANGELES, CALFORNA

Sheet Title:
REMODEL SINGLE LINE DIAGRAM TERMINAL 7

Professionals:
PBS ENGINEERS
2040 Main Street, Suite 175 Irvine, CA 92614 (949) 809-0060 (949) 809-0066
Los Angeles | Riverside | Phoenix | Consulting Engineers

Drawn By:	P.P.
Checked By:	
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T7-E01

P:\2013\2013-017-00\MPE\T7-E01.dwg Aug 14,2013-4:38pm
User: achdiaz

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

GATE - 71A

GATE - 71B

GATE - 70A

GATE - 70B

GATE - 73

GATE - 72

GATE - 75A

GATE - 74

GATE - 75B

GATE - 77

GATE - 76

FED FROM (E) DIST. BD. EDSDP, CIRCUITS 19,21,23

FED FROM (E) DIST. BD. D-PC, CIRCUIT 8

FED FROM (E) DIST. BD. BC75, CIRCUIT 2

FED FROM (E) DIST. BD. BC76, CIRCUIT 1

FED FROM POWER SERVER 1 & 2

FED FROM POWER SERVER 1 & 2

FED FROM (E) DIST. BD. D-PC, CIRCUIT 13

FED FROM (E) DIST. BD. D-PC, CIRCUIT 10

FED FROM (E) DIST. BD. D-PC, CIRCUIT 9

FED FROM (E) DIST. BD. D-PC, CIRCUIT 11

FED FROM POWER SERVER 1 & 2

FED FROM POWER SERVER 1 & 2

FED FROM (E) DIST. BD.

POWERSERVER 1 — ETAA-1,2,3
POWERSERVER 2 — PD-4

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 7 - LEVEL 2 (EXISTING CONDITIONS)

SCALE: N.T.S

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
elektriSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

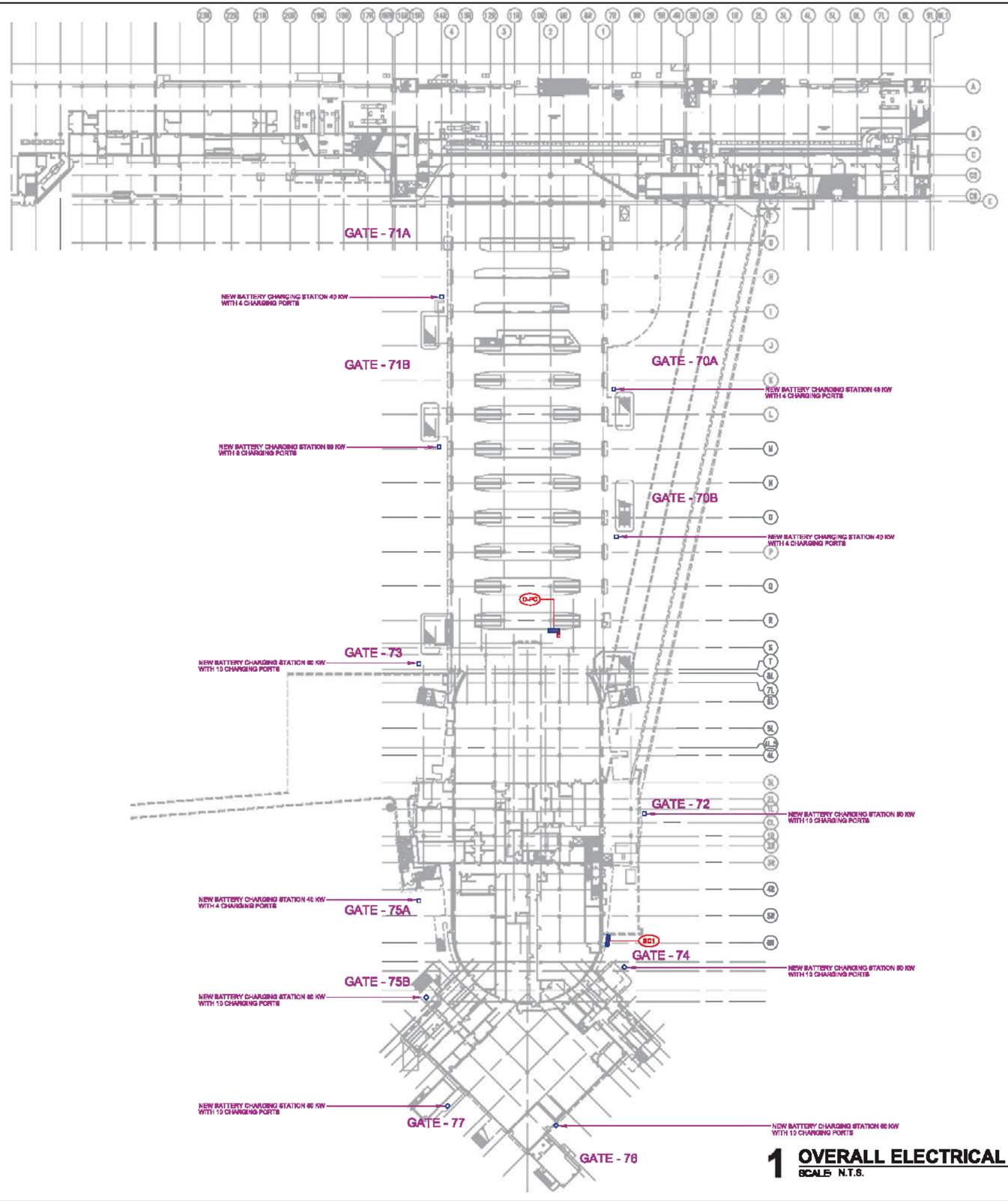
Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN TERMINAL 7 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
2100 East Howell Ave, Suite 101, Anaheim, CA
tel: (714) 685-6200 | www.pbsj.com
[Planning Engineers]

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T7-E21

P:\2013\2013-017-00\WPE\T7-E21.dwg Aug 14,2013 - 4:39pm
User: dchlintz



INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATION TO BE FIELD VERIFIED.

1 OVERALL ELECTRICAL PLAN - TERMINAL 7 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
delnGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
GSE NEW EQUIPMENT LOCATION PLAN - PROPOSED TERMINAL 7 - LEVEL 2

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
300 East Esplanade Drive, Suite 500, Oakland, CA 94621-2018 / 510.873.2300 / www.pbsj.com
Los Angeles (213) 312-2410 | Sacramento | Riverside | Ontario | Orange | Ventura | Monterey | Fresno | Bakersfield | Temecula | Pleasanton

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

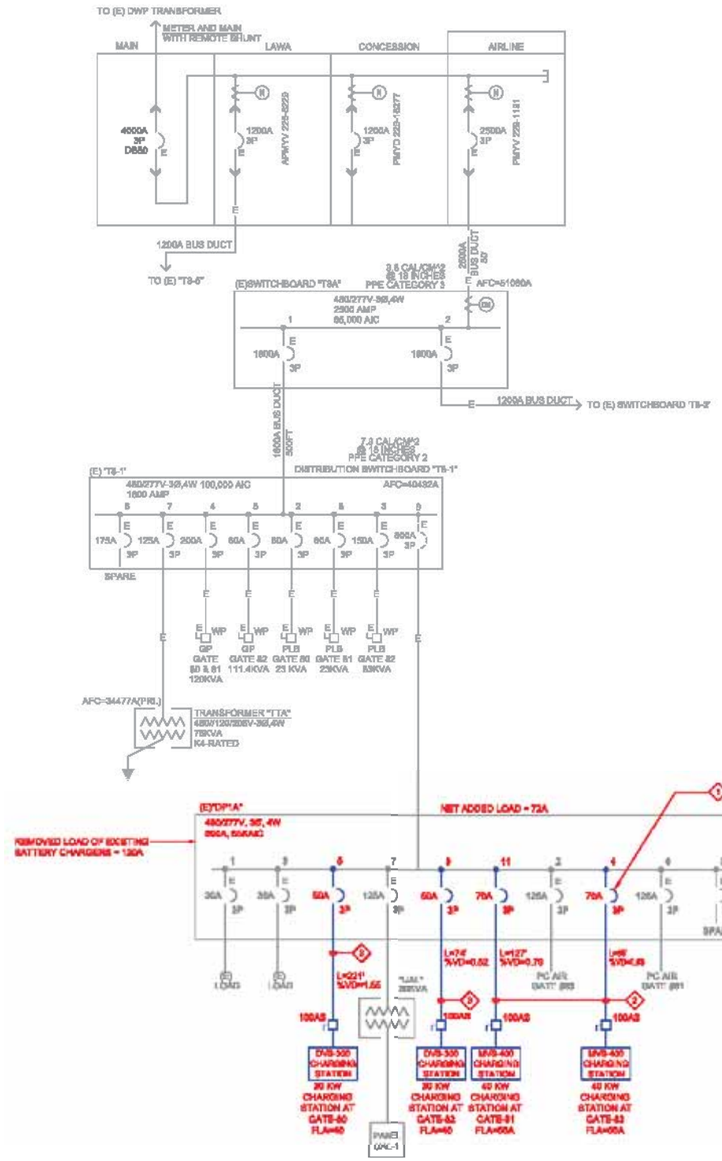
Sheet No:
T7-E22

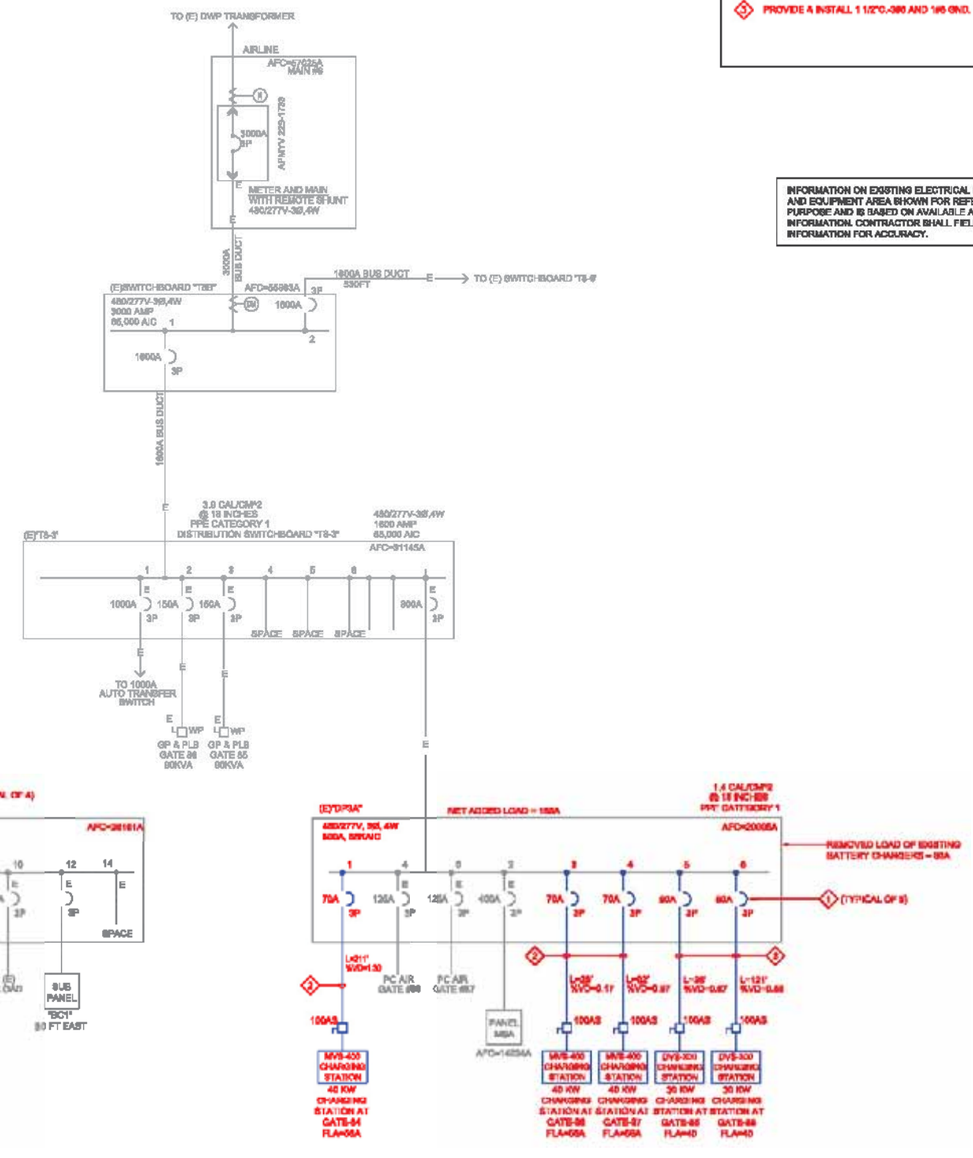
P:\2013\2013-017-00\MPE\T7-E22-Proposed.dwg Aug 14,2013-4:39pm
User: achavez

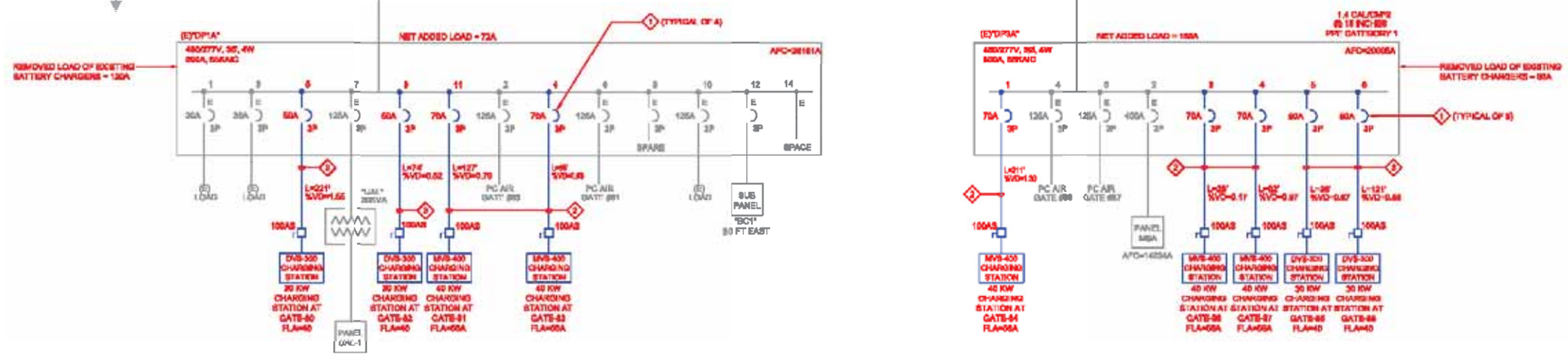
SHEET KEY NOTES

1. PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE TO MATCH CHARACTERISTICS OF EXISTING DISTRIBUTION BOARD.
2. PROVIDE & INSTALL 2 1/2"C.-3Ø4 AND 1Ø GND.
3. PROVIDE & INSTALL 1 1/2"C.-3Ø AND 1Ø GND.

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.







TERMINAL 8 - PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

P:\2013\2013-017-00\AIP\T8-E01.dwg Aug 14,2013--4:30pm
User: achima

MAINTENANCE ☐ CARGO ☐ RON ☐ TERMINAL ☒

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
distrIBSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

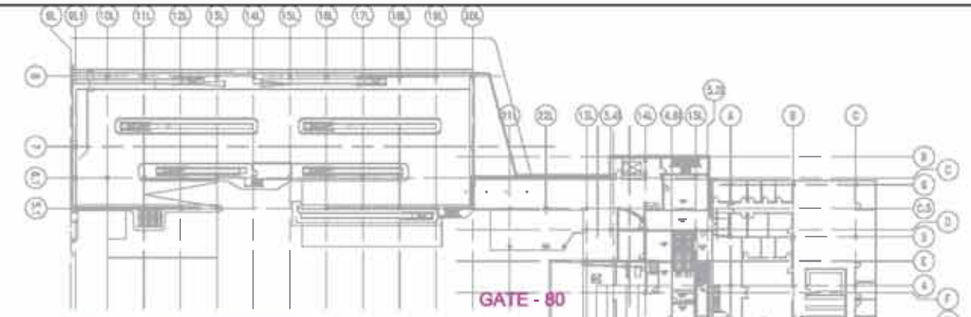
Sheet Title:
REMODEL SINGLE LINE DIAGRAM TERMINAL 8

Professionals:
LAX Los Angeles World Airports
PBS ENGINEERS
[illegible]

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T8-E01

INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.



GATE - 80

GATE - 81

GATE - 82

GATE - 83

GATE - 84

GATE - 85

GATE - 86

GATE - 87

GATE - 88

FED FROM (E) DIST. BD. DP1A, CIRCUIT 5

FED FROM (E) DIST. BD. P3A, CIRCUIT 23

FED FROM (E) DIST. BD. DP1A, CIRCUIT 10

FED FROM (E) DIST. BD. M4A, CIRCUITS 25,27,29

FED FROM (E) DIST. BD. DP3A, CIRCUITS 1,3,5

SOURCE - UNKNOWN

FED FROM (E) DIST. BD. DP1A, CIRCUIT 4

FED FROM (E) DIST. BD. M3A, CIRCUITS 19,21,23

FED FROM (E) DIST. BD. DP3A, CIRCUITS 7,9,11

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 8 - LEVEL 2 (EXISTING CONDITIONS)

SCALE: N.T.S

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
distrGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

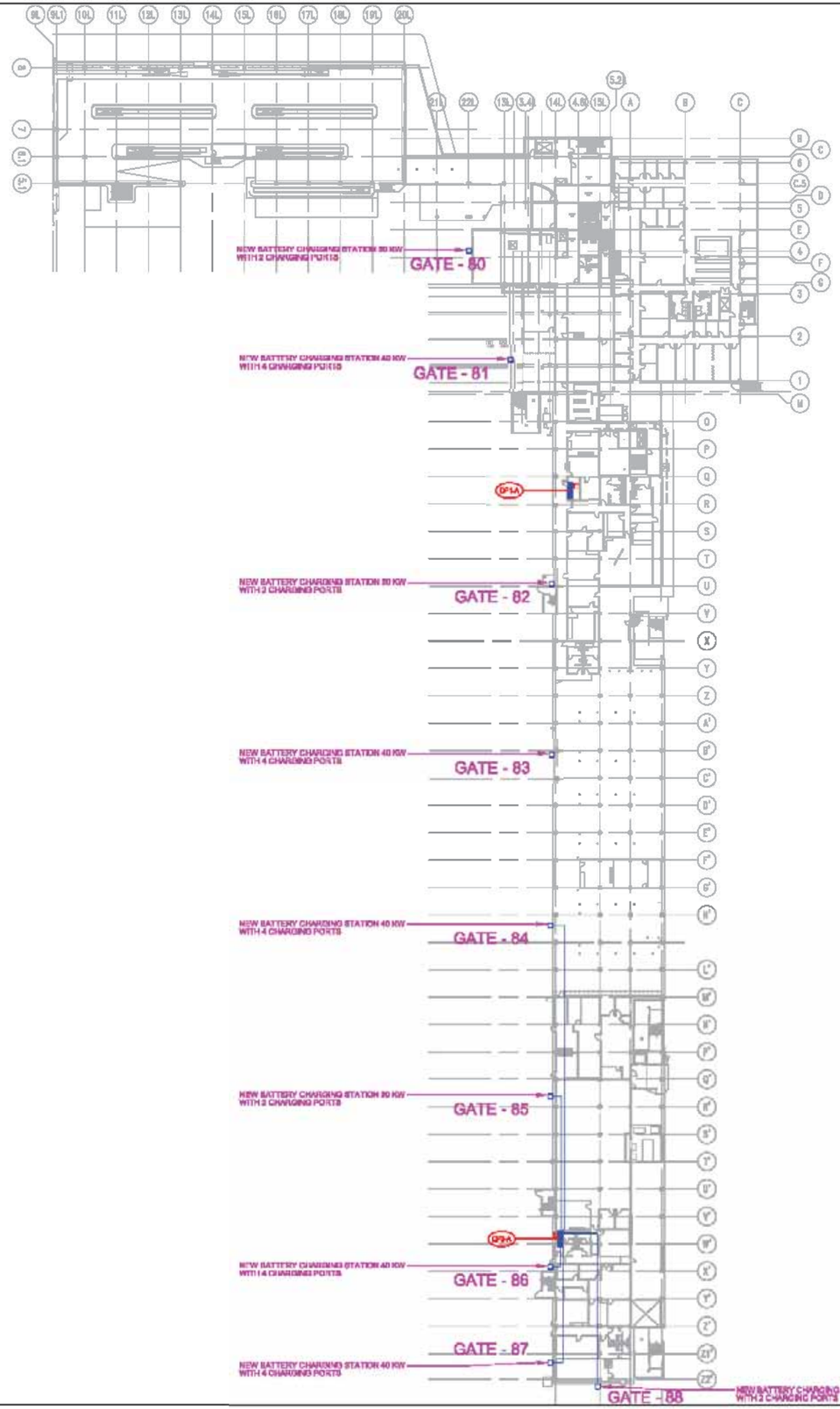
Sheet Title:
GSE EXISTING EQUIPMENT LOCATION PLAN TERMINAL 8 - LEVEL 2

Professionals:
LAX
PBS ENGINEERS
2100 East Route 66, Suite 100 Glendora, CA
ph. No. 909.3.7 FAX 626.852.0220 / E: pbs@pbsusa.com
Mechanical Electrical Plumbing | Consulting Engineers

Drawn By:	A.C.
Checked By:	P.P.
Date:	08/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T8–E21

P:\2013\2013-017-00\MPE\T8-E21.dwg Aug 14,2013-4:39pm
User: achavez



INFORMATION ON EXISTING ELECTRICAL SYSTEM AND EQUIPMENT AREA SHOWN FOR REFERENCE PURPOSE AND IS BASED ON AVAILABLE AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY INFORMATION FOR ACCURACY.

NEW BATTERY CHARGING STATION LOCATION TO BE FIELD VERIFIED.

N

1 OVERALL ELECTRICAL PLAN - TERMINAL 8 - LEVEL 2 (PROPOSED DESIGN)
SCALE: N.T.S.

☐ MAINTENANCE ☐ CARGO ☐ RON ☒ TERMINAL

ELECTRICAL CONCEPTUAL DESIGN

CONFIDENTIAL - PRELIMINARY DRAFT FOR DISCUSSION PURPOSE ONLY

Project Title:
LOS ANGELES INTERNATIONAL AIRPORT
delnGSE FEASIBILITY STUDY
LOS ANGELES, CALIFORNIA

Sheet Title:
G9E REMOVE &PACE NEW EQUIPMENT LOCATION PLAN - PROPOSED TERMINAL 8 - LEVEL 2

Professionals:
PBS ENGINEERS
LAX

Drawn By:	A.C.
Checked By:	P.P.
Date:	06/24/2013
Scale:	NONE
Job No.	2013-017-00

Sheet No:
T8-E22

P:\2013\2013-017-00\MPE\T8-E22-Proposed.dwg Aug 14,2013-4:35pm
User: achilmz

Appendix C

LAX eletGSE Electric Power Infrastructure Assessment

Cost Estimates

C-1A LAX eletGSE Electrification Project Cost Estimate-CARGO FACILITIES (Considering new charger at each position)

Item #	Airline	Position	Switchboard: New Swithboard Cost	Switchboard: (Reusing Existing Switchboard) New Circuit Breaker Cost	Infrastructure Cost: Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Miscellaneous Items: Concrete Pad	Disconnect switch Cost	Summary: Power Infrastructure Cost	Soft Cost: Considering 27% of Power Infrastructure Cost	Summary: Power Infrastructure Cost + Soft Cost	Contigency: Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charging Station: Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger Cost	Stands	Cable Cost	Cable Management	Installation Cost	Summary: Battery Charging Station Cost	Total	Comments
1	**B1 Cargo**	1		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project**. The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	750	$60	$45,000	$800	$750	$51,050	$13,784	$64,834	$16,208	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	1100	$60	$66,000	$800	$750	$72,050	$19,454	$91,504	$22,876	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$165,150	**$44,591**	**$209,741**	**$52,435**	**240KW**	**30**						**$526,500**	$788,676	
2	**C1 Cargo**	941		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing switchboard shall be replaced under **400Hz Electrification Project.** The cost of the switchboard replacement is excluded from this cost estimate.
		943		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$42,100	**$11,367**	**$53,467**	**$13,367**	**160KW**	**20**						**$351,000**	$417,834	
3	**Imperial Terminal**	B		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		C		$4,500	2 1/2"	350	$60	$21,000	$800	$750	$27,050	$7,304	$34,354	$8,588	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$51,100	**$13,797**	**$64,897**	**$16,224**	**160KW**	**20**						**$351,000**	$432,121	
4	**South Pads**	1		$4,500	2 1/2"	750	$60	$45,000	$800	$750	$51,050	$13,784	$64,834	$16,208	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	275	$60	$16,500	$800	$750	$22,550	$6,089	$28,639	$7,160	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		5		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$172,750	**$46,643**	**$219,393**	**$54,848**	**400KW**	**50**						**$877,500**	$1,151,741	
5	**Singapore airlines**	1		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing 1200 Amp Switchboard has adequate capacity and no upgrade required.
		2		$4,500	2 1/2"	350	$60	$21,000	$800	$750	$27,050	$7,304	$34,354	$8,588	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$63,100	**$17,037**	**$80,137**	**$20,034**		**20**						**$351,000**	$451,171	
6	**Korean Air Cargo**	1		$4,500	2 1/2"	950	$60	$57,000	$800	$750	$63,050	$17,024	$80,074	$20,018	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing switchboard shall be replaced under **400Hz Electrification Project.** The cost of the switchboard replacement is excluded from this cost estimate.
		2		$4,500	2 1/2"	750	$60	$45,000	$800	$750	$51,050	$13,784	$64,834	$16,208	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$114,100	**$30,807**	**$144,907**	**$36,227**		**20**						**$351,000**	$532,134	
7	**JAL Cargo**	1		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$69,100	**$18,657**	**$87,757**	**$21,939**		**20**						**$351,000**	$460,696	
8	**FEDEX**	1		$4,500	2 1/2"	1100	$60	$66,000	$800	$750	$72,050	$19,454	$91,504	$22,876	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	850	$60	$51,000	$800	$750	$57,050	$15,404	$72,454	$18,113	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	650	$60	$39,000	$800	$750	$45,050	$12,164	$57,214	$14,303	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		5		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		6		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		7		$4,500	2 1/2"	350	$60	$21,000	$800	$750	$27,050	$7,304	$34,354	$8,588	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		8		$4,500	2 1/2"	120	$60	$7,200	$800	$750	$13,250	$3,578	$16,828	$4,207	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		9		$4,500	2 1/2"	120	$60	$7,200	$800	$750	$13,250	$3,578	$16,828	$4,207	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		10		$4,500	2 1/2"	275	$60	$16,500	$800	$750	$22,550	$6,089	$28,639	$7,160	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		11		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$391,450	**$105,692**	**$497,142**	**$124,285**		**110**						**$1,930,500**	$2,551,927	
9	**DHL/ABX**	1		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$81,150	**$28,404**	**$133,604**	**$33,401**		**40**						**$702,000**	$869,005	
10	**Imperial Cargo**	1		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		5		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		6		$4,500	2 1/2"	650	$60	$39,000	$800	$750	$45,050	$12,164	$57,214	$14,303	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		7		$4,500	2 1/2"	375	$60	$22,500	$800	$750	$28,550	$7,709	$36,259	$9,065	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		8		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		9		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		10		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$284,000	**$76,680**	**$360,680**	**$90,170**		**100**						**$1,755,000**	$2,205,850	

C-1B LAX eletGSE Electrification Project Cost Estimate-Central Terminal Area (Considering new charger at each gate)

Item #	Airline	GATE	Switchboard: New Swithboard/ Panelboard Cost	Switchboard: (Reusing Existing Switchboard) New Circuit Breaker Cost	Infrastructure Cost: Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Miscellaneous Items: Concrete Pad	Disconnect switch Cost	Summary: Power Infrastructure Cost	Soft Cost: Considering 27% of Power Infrastructure Cost	Summary: Power Infrastructure Cost + Soft Cost	Project Contigency: Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charging Station: Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger & Power server Cost	Stands	Cable Cost	Cable Management	Installation Cost	Summary: Battery Charging Station Cost	Total	Comments
1	**TERMINAL 1**		$25,000								$25,000	$6,750	**$31,750**	**$7,937.50**										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing panels (NHF,NHB)serving existing battery chargers shall be reutilized for new battery chargers. Panel BAT-2 shall be replaced with new due to its current condition.
		1		$4,500	2 1/2"	321	$60	$19,260	$800	$750	$25,310	$6,834	$32,144	$8,036	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		2		$4,500	2 1/2"	270	$60	$16,200	$800	$750	$22,250	$6,008	$28,258	$7,064	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		3		$4,500	2 1/2"	35	$60	$2,100	$800	$750	$8,150	$2,201	$10,351	$2,588	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		4A		$4,500	2 1/2"	134	$60	$8,040	$800	$750	$14,090	$3,804	$17,894	$4,474	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		4B		$4,500	2 1/2"	255	$60	$15,300	$800	$750	$21,350	$5,765	$27,115	$6,779	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		5			2 1/2"	325	$60	$19,500	$800	$750	$21,050	$5,684	$26,734	$6,683	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		6		$4,500	2 1/2"	52	$60	$3,120	$800	$750	$9,170	$2,476	$11,646	$2,911	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		7		$4,500	2 1/2"	172	$60	$10,320	$800	$750	$16,370	$4,420	$20,790	$5,197	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		8		$4,500	2 1/2"	124	$60	$7,440	$800	$750	$13,490	$3,642	$17,132	$4,283	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		9		$4,500	2 1/2"	27	$60	$1,620	$800	$750	$7,670	$2,071	$9,741	$2,435	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		10			2 1/2"	41	$60	$2,460	$800	$750	$4,010	$1,083	$5,093	$1,273	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		11		$4,500	2 1/2"	117	$60	$7,020	$800	$750	$13,070	$3,529	$16,599	$4,150	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		12		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		13		$4,500	2 1/2"	150	$60	$9,000	$800	$750	$15,050	$4,064	$19,114	$4,778	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		14			2 1/2"	65	$60	$3,900	$800	$750	$5,450	$1,472	$6,922	$1,730	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
											$242,530	**$65,483**	**$308,013**	**$77,003**		**60**						**$1,071,000**	**$1,456,016**	
The switchboard cost of $25,000 includes the cost of circuit breakers for gates 5, 10 & 14.																								
2	**TERMINAL 2**	21		$4,500	2 1/2"	160	$60	$9,600	$800	$750	$15,650	$4,226	$19,876	$4,969	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New Distribution panels for new battery charging stations shall be provided under **T2 Electrical Upgrade; LAWA Project No.- C-LAX-11654.** Cost of the new distribution panels is not included in this estimate.
		21B		$4,500	2 1/2"	34	$60	$2,040	$800	$750	$8,090	$2,184	$10,274	$2,569	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		22		$4,500	2 1/2"	22	$60	$1,320	$800	$750	$7,370	$1,990	$9,360	$2,340	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		23		$4,500	2 1/2"	40	$60	$2,400	$800	$750	$8,450	$2,282	$10,732	$2,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		24		$4,500	2 1/2"	33	$60	$1,980	$800	$750	$8,030	$2,168	$10,198	$2,550	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		24A		$4,500	2 1/2"	34	$60	$2,040	$800	$750	$8,090	$2,184	$10,274	$2,569	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		25		$4,500	2 1/2"	38	$60	$2,280	$800	$750	$8,330	$2,249	$10,579	$2,645	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		26		$4,500	2 1/2"	79	$60	$4,740	$800	$750	$10,790	$2,913	$13,703	$3,426	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		27		$4,500	2 1/2"	73	$60	$4,380	$800	$750	$10,430	$2,816	$13,246	$3,312	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		28		$4,500	2 1/2"	119	$60	$7,140	$800	$750	$13,190	$3,561	$16,751	$4,188	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$98,420	**$26,573**	**$124,993**	**$31,248**		**88**						**$1,546,800**	**$1,703,042**	
3	**TERMINAL 3**		$485,000								$485,000	$130,950	$615,950	$153,988										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New Distribution boards (D-BC & D-BC1) shall be provided to serve new battery charging stations.
		30			2 1/2"	192	$60	$11,520	$800	$750	$13,070	$3,529	$16,599	$4,150	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		31A			2 1/2"	96	$60	$5,760	$800	$750	$7,310	$1,974	$9,284	$2,321	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		31B			2 1/2"	112	$60	$6,720	$800	$750	$8,270	$2,233	$10,503	$2,626	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		32			2 1/2"	124	$60	$7,440	$800	$750	$8,990	$2,427	$11,417	$2,854	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		33A			2 1/2"	177	$60	$10,620	$800	$750	$12,170	$3,286	$15,456	$3,864	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		33B			2 1/2"	246	$60	$14,760	$800	$750	$16,310	$4,404	$20,714	$5,178	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		34			2 1/2"	140	$60	$8,400	$800	$750	$9,950	$2,687	$12,637	$3,159	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		35			2 1/2"	233	$60	$13,980	$800	$750	$15,530	$4,193	$19,723	$4,931	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		36			2 1/2"	256	$60	$15,360	$800	$750	$16,910	$4,566	$21,476	$5,369	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		37A			2 1/2"	120	$60	$7,200	$800	$750	$8,750	$2,363	$11,113	$2,778	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		37B			2 1/2"	107	$60	$6,420	$800	$750	$7,970	$2,152	$10,122	$2,530	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		38			2 1/2"	119	$60	$7,140	$800	$750	$8,690	$2,346	$11,036	$2,759	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$618,920	**$167,108**	**$786,028**	**$196,507**		**78**						**$1,377,300**	**$2,359,836**	
The switchboard cost of $485,000 includes the cost of circuit breakers for all gates.																								
4	**TERMINAL 4**		$150,000								$150,000	$40,500	$190,500	$47,625										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Due to its current condition, existing distribution panels (PB1,PB1B, PB2 & PB3) serving existing battery chargers shall be replaced with same size to serve new battery charging stations.
		40			2 1/2"	150	$60	$9,000	$800	$750	$9,750	$2,633	$12,383	$3,096	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		41			2 1/2"	175	$60	$10,500	$800	$750	$11,250	$3,038	$14,288	$3,572	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		42A			2 1/2"	189	$60	$11,340	$800	$750	$12,090	$3,264	$15,354	$3,839	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		42B			2 1/2"	189	$60	$11,340	$800	$750	$12,090	$3,264	$15,354	$3,839	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		43			2 1/2"	350	$60	$21,000	$800	$750	$21,750	$5,873	$27,623	$6,906	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		45			2 1/2"	107	$60	$6,420	$800	$750	$7,170	$1,936	$9,106	$2,276	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		46A			2 1/2"	142	$60	$8,520	$800	$750	$9,270	$2,503	$11,773	$2,943	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		46B			2 1/2"	133	$60	$7,980	$800	$750	$8,730	$2,357	$11,087	$2,772	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		47A			2 1/2"	111	$60	$6,660	$800	$750	$7,410	$2,001	$9,411	$2,353	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		47B			2 1/2"	124	$60	$7,440	$800	$750	$8,190	$2,211	$10,401	$2,600	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		48A			2 1/2"	143	$60	$8,580	$800	$750	$9,330	$2,519	$11,849	$2,962	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		48B			2 1/2"	79	$60	$4,740	$800	$750	$5,490	$1,482	$6,972	$1,743	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		49A			2 1/2"	116	$60	$6,960	$800	$750	$7,710	$2,082	$9,792	$2,448	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$280,230	**$75,662**	**$355,892**	**$88,973**		**100**						**$1,761,000**	**$2,205,865**	
The switchboard cost of $150,000 includes the cost of circuit breakers for all gates.																								
5	**TERMINAL 5**	50B													40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New battery chargers for gates 50B, 51A, 52A, 53A, 53B & 54B shall be provided under **Delta T5 Ground Service Equipment(GSE) Infrastructure; LAWA Project No.- T-LAX-11480-8.** The ROM cost of **$642,500** for these battery chargers is excluded from this estimate. New battery chargers for
		51A													40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		51B		$4,500	2 1/2"	10	$60	$600	$800	$750	$6,650	$1,796	$8,446	$2,111	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		52A													80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		53A													40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		53B													40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		54A		$4,500	2 1/2"	290	$60	$17,400	$800	$750	$23,450	$6,332	$29,782	$7,445	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		54B													40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		55A		$4,500	2 1/2"	125	$60	$7,500	$800	$750	$13,550	$3,659	$17,209	$4,302	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		56		$4,500	2 1/2"	170	$60	$10,200	$800	$750	$16,250	$4,388	$20,638	$5,159	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		57		$4,500	2 1/2"	63	$60	$3,780	$800	$750	$9,830	$2,654	$12,484	$3,121	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		

C-1B LAX eletGSE Electrification Project Cost Estimate-Central Terminal Area (Considering new charger at each gate)

Item #	Airline	GATE	Switchboard: New Swithboard/ Panelboard Cost	Switchboard: (Reusing Existing Switchboard) New Circuit Breaker Cost	Infrastructure Cost: Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Miscellaneous Items: Concrete Pad	Disconnect switch Cost	Summary: Power Infrastructure Cost	Soft Cost: Considering 27% of Power Infrastructure Cost	Summary: Power Infrastructure Cost + Soft Cost	Project Contigency: Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charging Station: Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger & Power server Cost	Stands	Cable Cost	Cable Management	Installation Cost	Summary: Battery Charging Station Cost	Total	Comments
		58		$4,500	2 1/2"	155	$60	$9,300	$800	$750	$15,350	$4,145	$19,495	$4,874	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		remaining gates will be part of this project.
		59		$4,500	2 1/2"	138	$60	$8,280	$800	$750	$14,330	$3,869	$18,199	$4,550	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
											$99,410	**$26,841**	**$126,251**	**$31,563**		**82**						**$1,448,700**	**$1,606,513**	
6	**TERMINAL 6**		$80,000								$80,000	$21,600	$101,600	$25,400										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New Distribution boards (BC1 & BC2) shall be provided to serve new battery charging stations.
		60			2 1/2"	260	$60	$15,600	$800	$750	$17,150	$4,631	$21,781	$5,445	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		61			2 1/2"	508	$60	$30,480	$800	$750	$32,030	$8,648	$40,678	$10,170	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		62			2 1/2"	190	$60	$11,400	$800	$750	$12,950	$3,497	$16,447	$4,112	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		63			2 1/2"	335	$60	$20,100	$800	$750	$21,650	$5,846	$27,496	$6,874	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		64			2 1/2"	95	$60	$5,700	$800	$750	$7,250	$1,958	$9,208	$2,302	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		65			2 1/2"	211	$60	$12,660	$800	$750	$14,210	$3,837	$18,047	$4,512	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		66			2 1/2"	263	$60	$15,780	$800	$750	$17,330	$4,679	$22,009	$5,502	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		67A			2 1/2"	96	$60	$5,760	$800	$750	$7,310	$1,974	$9,284	$2,321	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		67B			2 1/2"	235	$60	$14,100	$800	$750	$15,650	$4,226	$19,876	$4,969	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		68A			2 1/2"	405	$60	$24,300	$800	$750	$25,850	$6,980	$32,830	$8,207	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		68B			2 1/2"	433	$60	$25,980	$800	$750	$27,530	$7,433	$34,963	$8,741	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		69A			2 1/2"	327	$60	$19,620	$800	$750	$21,170	$5,716	$26,886	$6,721	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		69B			2 1/2"	368	$60	$22,080	$800	$750	$23,630	$6,380	$30,010	$7,503	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$323,710	**$87,402**	**$411,112**	**$102,778**		**106**						**$1,865,100**	**$2,378,990**	
The switchboard cost of $80,000 includes the cost of circuit breakers for all gates.																								
7	TERMINAL 7		$40,000								40,000	10,800	50,800	12,700										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing switchboard D-PC will be replaced under **United Airlines Terminal 7 CBIS & Baggage System Project; LAWA Project No.- T-LAX-11443.** The replacement cost of **$150,000** for this switchboard is not included in this cost estimate. New Distribution board BC1 shall be provided to serve new battery chargers for gates 72, 74, 75A, 75B, 76 & 77.
		70A		$4,500	2 1/2"	254	$60	$15,240	$800	$750	$20,490	$5,532	$26,022	$6,506	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		70B		$4,500	2 1/2"	130	$60	$7,800	$800	$750	$13,050	$3,524	$16,574	$4,143	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		71A		$4,500	2 1/2"	383	$60	$22,980	$800	$750	$28,230	$7,622	$35,852	$8,963	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		71B		$4,500	2 1/2"	255	$60	$15,300	$800	$750	$20,550	$5,549	$26,099	$6,525	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		72			2 1/2"	191	$60	$11,460	$800	$750	$12,210	$3,297	$15,507	$3,877	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		73		$4,500	2 1/2"	141	$60	$8,460	$800	$750	$13,710	$3,702	$17,412	$4,353	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		74			2 1/2"	52	$60	$3,120	$800	$750	$3,870	$1,045	$4,915	$1,229	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		75A			2 1/2"	192	$60	$11,520	$800	$750	$12,270	$3,313	$15,583	$3,896	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		75B			2 1/2"	204	$60	$12,240	$800	$750	$12,990	$3,507	$16,497	$4,124	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		76			2 1/2"	199	$60	$11,940	$800	$750	$12,690	$3,426	$16,116	$4,029	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		77			2 1/2"	178	$60	$10,680	$800	$750	$11,430	$3,086	$14,516	$3,629	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
											$201,490	**$54,402**	**$255,892**	**$63,973**		**86**						**$1,514,100**	**$1,833,965**	
The switchboard cost of $40,000 includes the cost of circuit breakers for gates 72,74,75A,75B,76 & 77.																								
8	**TERMINAL 8**	80		$4,500	1 1/2"	221	$60	$13,260	$800	$750	$19,310	$5,214	$24,524	$6,131	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing distribution panels (DP1A & DP3A) serving existing battery chargers shall be reutilized to serve new battery charging stations.
		81		$4,500	2 1/2"	127	$60	$7,620	$800	$750	$13,670	$3,691	$17,361	$4,340	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		82		$4,500	1 1/2"	74	$60	$4,440	$800	$750	$10,490	$2,832	$13,322	$3,331	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		83		$4,500	2 1/2"	85	$60	$5,100	$800	$750	$11,150	$3,011	$14,161	$3,540	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		84		$4,500	2 1/2"	211	$60	$12,660	$800	$750	$18,710	$5,052	$23,762	$5,940	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		85		$4,500	1 1/2"	96	$60	$5,760	$800	$750	$11,810	$3,189	$14,999	$3,750	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		86		$4,500	2 1/2"	28	$60	$1,680	$800	$750	$7,730	$2,087	$9,817	$2,454	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		87		$4,500	2 1/2"	92	$60	$5,520	$800	$750	$11,570	$3,124	$14,694	$3,673	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		88		$4,500	1 1/2"	121	$60	$7,260	$800	$750	$13,310	$3,594	$16,904	$4,226	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
											$117,750	**$31,793**	**$149,543**	**$37,386**		**28**						**$545,000**	**$731,928**	
9	**AMERICAN EAGLE**	44A		$4,500	1 1/2"	100	$60	$6,000	$800	$750	$12,050	$3,254	$15,304	$3,826	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing distribution panels (HB1F,HB1K & HB1H) serving existing battery chargers shall be reutilized to serve new battery charging stations.
	COMMUTER	44B		$4,500	1 1/2"	150	$60	$9,000	$800	$750	$15,050	$4,064	$19,114	$4,778	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
	FACILITY	44C		$4,500	1 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44D		$4,500	1 1/2"	100	$60	$6,000	$800	$750	$12,050	$3,254	$15,304	$3,826	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44E		$4,500	1 1/2"	75	$60	$4,500	$800	$750	$10,550	$2,849	$13,399	$3,350	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44F		$4,500	1 1/2"	200	$60	$12,000	$800	$750	$18,050	$4,874	$22,924	$5,731	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44G		$4,500	1 1/2"	75	$60	$4,500	$800	$750	$10,550	$2,849	$13,399	$3,350	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44H		$4,500	1 1/2"	100	$60	$6,000	$800	$750	$12,050	$3,254	$15,304	$3,826	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44I		$4,500	1 1/2"	150	$60	$9,000	$800	$750	$15,050	$4,064	$19,114	$4,778	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44J		$4,500	1 1/2"	200	$60	$12,000	$800	$750	$18,050	$4,874	$22,924	$5,731	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
											$144,500	**$39,015**	**$183,515**	**$45,879**		**20**						**$470,000**	**$699,394**	
10	**BRADLEY WEST**	130														2								All new battery charging station provisions for some of the Individual gates are being provided under **LAX Bradley West Modernization Project.** For South and North side battery charging clusters, only conduit stubs will be provided under **LAX Bardley West Modernization Project.** New conductors,disconnect switches, circuit breakers and Battery chargers & accessories for North & South side battery charging cluster will be part of this project.
		132														2								
		134														2								
		South Cluster				7X350	$25	$61,250		7X$750	$66,500	$17,955	$84,455	$21,114	7X30KW	14	$227,500	$3,500	$18,200	$13,300	$66,500	$329,000		
		151														2								
		152														2								
		153														2								
		154														2								
		155														2								
		156														2								
		157														2								
		North Cluster		$4500X10		14X150	$25	$52,500	$11,200	14X750	$74,200	$20,034	$94,234	$23,559	14X30KW	28	$455,000	$7,000	$36,400	$26,600	$133,000	$658,000		
											$140,700	**$37,989**	**$178,689**	**$44,672**		**62**						**$987,000**	**$1,210,361**	
11	**WEST RON**	201A		$4,500	2 1/2"	700	$60	$42,000	$800	$750	$48,050	$12,974	$61,024	$15,256	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		Existing service and switchboard from Elecctrical room 1 & 2 are being upgraded
		201B		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		

C-1B LAX eletGSE Electrification Project Cost Estimate-Central Terminal Area (Considering new charger at each gate)

Item #	Airline	GATE	Switchboard: New Swithboard/ Panelboard Cost	Switchboard: (Reusing Existing Switchboard) New Circuit Breaker Cost	Infrastructure Cost: Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Miscellaneous Items: Concrete Pad	Disconnect switch Cost	Summary: Power Infrastructure Cost	Soft Cost: Considering 27% of Power Infrastructure Cost	Summary: Power Infrastructure Cost + Soft Cost	Project Contigency: Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charging Station: Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger & Power server Cost	Stands	Cable Cost	Cable Management	Installation Cost	Summary: Battery Charging Station Cost	Total	Comments
		202A		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		202B		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202C		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202D		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202E		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		203		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		203C		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		205A		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		205B		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		205C		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		211		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		213		$4,500	2 1/2"	800	$60	$48,000	$800	$750	$54,050	$14,594	$68,644	$17,161	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		215		$4,500	2 1/2"	700	$60	$42,000	$800	$750	$48,050	$12,974	$61,024	$15,256	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		217		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		219		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
											$681,850	**$184,100**	**$865,950**	**$216,487**		**68**						**$1,213,800**	**$2,296,237**	
12	**MIDFIELD SATELLITE CONCOURSE**		**N/A**																				**N/A**	

C-2A LAX elet GSE Electrification Project Cost Estimate-CARGO FACILITIES (Considering some existing Smart Chargers to remain)

Item #	Airline	Position	Switchboard		Infrastructure Cost				Miscellaneous Items		Summary	Soft Cost	Summary	Project Contigency	Battery Charging Station							Summary		Comments
			New Swithboard Cost	(Reusing Existing Switchboard) New Circuit Breaker Cost	Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Concrete Pad	Disconnect switch Cost	**Power Infrastructure Cost**	**Considering 27% of Power Infrastructure Cost**	**Power Infrastructure Cost + Soft Cost**	**Considering 25% of Power Infrastructure Cost + Soft Cost**	Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger Cost	Stands	Cable Cost	Cable Management	Installation Cost	**Battery Charging Station Cost**	**Total**	
1	**B1 Cargo**	1		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project**. The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	750	$60	$45,000	$800	$750	$51,050	$13,784	$64,834	$16,208	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	1100	$60	$66,000	$800	$750	$72,050	$19,454	$91,504	$22,876	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$209,741	**$52,435**	**240KW**	**30**						**$526,500**	**$788,676**	
2	**C1 Cargo**	941		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing switchboard shall be replaced under **400Hz Electrification Project.** The cost of the switchboard replacement is excluded from this
		943		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$53,467	**$13,367**	**160KW**	**20**						**$351,000**	**$417,834**	
3	**Imperial Terminal**	B		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is
		C		$4,500	2 1/2"	350	$60	$21,000	$800	$750	$27,050	$7,304	$34,354	$8,588	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$64,897	**$16,224**	**160KW**	**20**						**$351,000**	**$432,121**	
4	**South Pads**	1		$4,500	2 1/2"	750	$60	$45,000	$800	$750	$51,050	$13,784	$64,834	$16,208	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	275	$60	$16,500	$800	$750	$22,550	$6,089	$28,639	$7,160	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		5		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$219,393	**$54,848**	**400KW**	**50**						**$877,500**	**$1,151,741**	
5	**Singapore airlines**	1		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing 1200 Amp Switchboard has adequate capacity and no upgrade required.
		2		$4,500	2 1/2"	350	$60	$21,000	$800	$750	$27,050	$7,304	$34,354	$8,588	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$80,137	**$20,034**		**20**						**$351,000**	**$451,171**	
6	**Korean Air Cargo**	1		$4,500	2 1/2"	950	$60	$57,000	$800	$750	$63,050	$17,024	$80,074	$20,018	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing switchboard shall be replaced under **400Hz Electrification Project.** The cost of the switchboard replacement is excluded from this cost estimate
		2		$4,500	2 1/2"	750	$60	$45,000	$800	$750	$51,050	$13,784	$64,834	$16,208	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$144,907	**$36,227**		**20**						**$351,000**	**$532,134**	
7	**JAL Cargo**	1		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is
		2		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$87,757	**$21,939**		**20**						**$351,000**	**$460,696**	
8	**FEDEX**	1		$4,500	2 1/2"	1100	$60	$66,000	$800	$750	$72,050	$19,454	$91,504	$22,876	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	850	$60	$51,000	$800	$750	$57,050	$15,404	$72,454	$18,113	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	650	$60	$39,000	$800	$750	$45,050	$12,164	$57,214	$14,303	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		5		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		6		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		7		$4,500	2 1/2"	350	$60	$21,000	$800	$750	$27,050	$7,304	$34,354	$8,588	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		8		$4,500	2 1/2"	120	$60	$7,200	$800	$750	$13,250	$3,578	$16,828	$4,207	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		9		$4,500	2 1/2"	120	$60	$7,200	$800	$750	$13,250	$3,578	$16,828	$4,207	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		10																						
		11																						
													$422,720	**$105,680**		**90**						**$1,579,500**	**$2,107,899**	
9	**DHL/ABX**	1		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$133,604	**$33,401**		**40**						**$702,000**	**$869,005**	
10	**Imperial Cargo**	1		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing service and switchboards shall be upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		2		$4,500	2 1/2"	450	$60	$27,000	$800	$750	$33,050	$8,924	$41,974	$10,493	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		3		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		4		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		5		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		6		$4,500	2 1/2"	650	$60	$39,000	$800	$750	$45,050	$12,164	$57,214	$14,303	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		7		$4,500	2 1/2"	375	$60	$22,500	$800	$750	$28,550	$7,709	$36,259	$9,065	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		8		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		9		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		10		$4,500	2 1/2"	300	$60	$18,000	$800	$750	$24,050	$6,494	$30,544	$7,636	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$360,680	**$90,170**		**100**						**$1,755,000**	**$2,205,850**	

C-2B LAX eletGSE Electrification Project Cost Estimate-Central Terminal Area (Considering some existing Smart Chargers to remain)

Item #	Airline	GATE	Switchboard		Infrastructure Cost				Miscellaneous Items		Summary	Soft Cost	Summary	Project Contigency	Battery Charging Station							Summary	Total	Comments
			New Swithboard/ Panelboard Cost	(Reusing Existing Switchboard) New Circuit Breaker Cost	Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Concrete Pad	Disconnect switch Cost	Power Infrastructure Cost	Considering 27% of Power Infrastructure Cost	Power Infrastructure Cost + Soft Cost	Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger & Power server Cost	Stands	Cable Cost	Cable Management	Installation Cost	Battery Charging Station Cost		
1	TERMINAL 1		$25,000								$25,000	$6,750	$31,750	$7,937.50										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing panels (NHF,NHB)serving existing battery chargers shall be reutilized for new battery chargers. Panel BAT-2 shall be replaced with new due to its current condition.
		1																						
		2		$4,500	2 1/2"	270	$60	$16,200	$800	$750	$22,250	$6,008	$28,258	$7,064	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		3																						
		4A																						
		4B																						
		5			2 1/2"	325	$60	$19,500	$800	$750	$21,050	$5,684	$26,734	$6,683	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		6		$4,500	2 1/2"	52	$60	$3,120	$800	$750	$9,170	$2,476	$11,646	$2,911	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		7		$4,500	2 1/2"	172	$60	$10,320	$800	$750	$16,370	$4,420	$20,790	$5,197	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		8		$4,500	2 1/2"	124	$60	$7,440	$800	$750	$13,490	$3,642	$17,132	$4,283	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		9																						
		10			2 1/2"	41	$60	$2,460	$800	$750	$4,010	$1,083	$5,093	$1,273	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		11																						
		12		$4,500	2 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		13																						
		14			2 1/2"	65	$60	$3,900	$800	$750	$5,450	$1,472	$6,922	$1,730	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
													$175,057	**$43,764**		**32**						**$571,200**	**$790,021**	
The switchboard cost of $25,000 includes the cost of circuit breakers for gates 5, 10 & 14.																								
2	TERMINAL 2	21		$4,500	2 1/2"	160	$60	$9,600	$800	$750	$15,650	$4,226	$19,876	$4,969	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New Distribution panels for new battery charging stations shall be provided under **T2 Electrical Upgrade; LAWA Project No.- C-LAX-11654.** Cost of the new distribution panels is not included in this estimate.
		21B		$4,500	2 1/2"	34	$60	$2,040	$800	$750	$8,090	$2,184	$10,274	$2,569	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		22		$4,500	2 1/2"	22	$60	$1,320	$800	$750	$7,370	$1,990	$9,360	$2,340	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		23		$4,500	2 1/2"	40	$60	$2,400	$800	$750	$8,450	$2,282	$10,732	$2,683	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		24		$4,500	2 1/2"	33	$60	$1,980	$800	$750	$8,030	$2,168	$10,198	$2,550	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		24A		$4,500	2 1/2"	34	$60	$2,040	$800	$750	$8,090	$2,184	$10,274	$2,569	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		25		$4,500	2 1/2"	38	$60	$2,280	$800	$750	$8,330	$2,249	$10,579	$2,645	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		26		$4,500	2 1/2"	79	$60	$4,740	$800	$750	$10,790	$2,913	$13,703	$3,426	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		27		$4,500	2 1/2"	73	$60	$4,380	$800	$750	$10,430	$2,816	$13,246	$3,312	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		28		$4,500	2 1/2"	119	$60	$7,140	$800	$750	$13,190	$3,561	$16,751	$4,188	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$124,993	**$31,248**		**88**						**$1,546,800**	**$1,703,042**	
3	TERMINAL 3		$485,000								$485,000	$130,950	$615,950	$153,988										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New Distribution boards (D-BC & D-BC1) shall be provided to serve new battery charging stations.
		30			2 1/2"	192	$60	$11,520	$800	$750	$13,070	$3,529	$16,599	$4,150	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		31A			2 1/2"	96	$60	$5,760	$800	$750	$7,310	$1,974	$9,284	$2,321	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		31B			2 1/2"	112	$60	$6,720	$800	$750	$8,270	$2,233	$10,503	$2,626	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		32			2 1/2"	124	$60	$7,440	$800	$750	$8,990	$2,427	$11,417	$2,854	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		33A			2 1/2"	177	$60	$10,620	$800	$750	$12,170	$3,286	$15,456	$3,864	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		33B			2 1/2"	246	$60	$14,760	$800	$750	$16,310	$4,404	$20,714	$5,178	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		34			2 1/2"	140	$60	$8,400	$800	$750	$9,950	$2,687	$12,637	$3,159	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		35			2 1/2"	233	$60	$13,980	$800	$750	$15,530	$4,193	$19,723	$4,931	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		36			2 1/2"	256	$60	$15,360	$800	$750	$16,910	$4,566	$21,476	$5,369	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		37A			2 1/2"	120	$60	$7,200	$800	$750	$8,750	$2,363	$11,113	$2,778	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		37B			2 1/2"	107	$60	$6,420	$800	$750	$7,970	$2,152	$10,122	$2,530	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		38			2 1/2"	119	$60	$7,140	$800	$750	$8,690	$2,346	$11,036	$2,759	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$786,028	**$196,507**		**78**						**$1,377,300**	**$2,359,836**	
The switchboard cost of $485,000 includes the cost of circuit breakers for all gates.																								
4	TERMINAL 4		$150,000								$150,000	$40,500	$190,500	$47,625										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Due to its current condition, existing distribution panels (PB1,PB1B, PB2 & PB3) serving existing battery chargers shall be replaced with same size to serve new battery charging stations.
		40			2 1/2"	150	$60	$9,000	$800	$750	$9,750	$2,633	$12,383	$3,096	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		41			2 1/2"	175	$60	$10,500	$800	$750	$11,250	$3,038	$14,288	$3,572	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		42A			2 1/2"	189	$60	$11,340	$800	$750	$12,090	$3,264	$15,354	$3,839	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		42B			2 1/2"	189	$60	$11,340	$800	$750	$12,090	$3,264	$15,354	$3,839	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		43			2 1/2"	350	$60	$21,000	$800	$750	$21,750	$5,873	$27,623	$6,906	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		45			2 1/2"	107	$60	$6,420	$800	$750	$7,170	$1,936	$9,106	$2,276	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		46A			2 1/2"	142	$60	$8,520	$800	$750	$9,270	$2,503	$11,773	$2,943	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		46B			2 1/2"	133	$60	$7,980	$800	$750	$8,730	$2,357	$11,087	$2,772	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		47A			2 1/2"	111	$60	$6,660	$800	$750	$7,410	$2,001	$9,411	$2,353	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		47B			2 1/2"	124	$60	$7,440	$800	$750	$8,190	$2,211	$10,401	$2,600	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		48A			2 1/2"	143	$60	$8,580	$800	$750	$9,330	$2,519	$11,849	$2,962	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		48B			2 1/2"	79	$60	$4,740	$800	$750	$5,490	$1,482	$6,972	$1,743	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		49A			2 1/2"	116	$60	$6,960	$800	$750	$7,710	$2,082	$9,792	$2,448	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$355,892	**$88,973**		**100**						**$1,761,000**	**$2,205,865**	
The switchboard cost of $150,000 includes the cost of circuit breakers for all gates.																								
5	TERMINAL 5	50B																						Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming
		51A																						
		51B		$4,500	2 1/2"	10	$60	$600	$800	$750	$6,650	$1,796	$8,446	$2,111	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		

C-2B LAX eletGSE Electrification Project Cost Estimate-Central Terminal Area (Considering some existing Smart Chargers to remain)

Item #	Airline	GATE	Switchboard: New Swithboard/ Panelboard Cost	Switchboard: (Reusing Existing Switchboard) New Circuit Breaker Cost	Infrastructure Cost: Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Miscellaneous Items: Concrete Pad	Disconnect switch Cost	Summary: Power Infrastructure Cost	Soft Cost: Considering 27% of Power Infrastructure Cost	Summary: Power Infrastructure Cost + Soft Cost	Project Contigency Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charging Station: Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger & Power server Cost	Stands	Cable Cost	Cable Management	Installation Cost	Summary: Battery Charging Station Cost	Total	Comments
		52A																						service. New battery chargers for gates 50B, 51A, 52A, 53A, 53B & 54B shall be provided under **Delta T5 Ground Service Equipment(GSE) Infrastructure; LAWA Project No.- T-LAX-11480-8.** The ROM cost of **$642,500** for these battery chargers is excluded from this estimate. New battery chargers for remaining gates will be part of this project.
		53A																						
		53B																						
		54A		$4,500	2 1/2"	290	$60	$17,400	$800	$750	$23,450	$6,332	$29,782	$7,445	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		54B																						
		55A		$4,500	2 1/2"	125	$60	$7,500	$800	$750	$13,550	$3,659	$17,209	$4,302	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		56																						
		57		$4,500	2 1/2"	63	$60	$3,780	$800	$750	$9,830	$2,654	$12,484	$3,121	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		58		$4,500	2 1/2"	155	$60	$9,300	$800	$750	$15,350	$4,145	$19,495	$4,874	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		59		$4,500	2 1/2"	138	$60	$8,280	$800	$750	$14,330	$3,869	$18,199	$4,550	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
													$105,613	**$26,403**		**48**						**$844,800**	**$976,817**	
6	**TERMINAL 6**		$80,000								$80,000	$21,600	$101,600	$25,400										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. New Distribution boards (BC1 & BC2) shall be provided to serve new battery charging stations.
		60			2 1/2"	260	$60	$15,600	$800	$750	$17,150	$4,631	$21,781	$5,445	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		61			2 1/2"	508	$60	$30,480	$800	$750	$32,030	$8,648	$40,678	$10,170	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		62			2 1/2"	190	$60	$11,400	$800	$750	$12,950	$3,497	$16,447	$4,112	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		63			2 1/2"	335	$60	$20,100	$800	$750	$21,650	$5,846	$27,496	$6,874	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		64																						
		65																						
		66																						
		67A			2 1/2"	96	$60	$5,760	$800	$750	$7,310	$1,974	$9,284	$2,321	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		67B			2 1/2"	235	$60	$14,100	$800	$750	$15,650	$4,226	$19,876	$4,969	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		68A			2 1/2"	405	$60	$24,300	$800	$750	$25,850	$6,980	$32,830	$8,207	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		68B			2 1/2"	433	$60	$25,980	$800	$750	$27,530	$7,433	$34,963	$8,741	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		69A			2 1/2"	327	$60	$19,620	$800	$750	$21,170	$5,716	$26,886	$6,721	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		69B			2 1/2"	368	$60	$22,080	$800	$750	$23,630	$6,380	$30,010	$7,503	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
													$361,848	**$90,462**		**88**						**$1,546,800**	**$1,999,111**	
The switchboard cost of $80,000 includes the cost of circuit breakers for all gates.																								
7	**TERMINAL 7**		$40,000								40,000	10,800	50,800	12,700										Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing switchboard D-PC will be replaced under **United Airlines Terminal 7 CBIS & Baggage System Project; LAWA Project No.- T-LAX-11443.** The replacement cost of **$150,000** for this switchboard is not included in this cost estimate. New Distribution board BC1 shall be provided to serve new battery
		70A																						
		70B																						
		71A		$4,500	2 1/2"	383	$60	$22,980	$800	$750	$28,230	$7,622	$35,852	$8,963	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		71B																						
		72																						
		73		$4,500	2 1/2"	141	$60	$8,460	$800	$750	$13,710	$3,702	$17,412	$4,353	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		74			2 1/2"	52	$60	$3,120	$800	$750	$3,870	$1,045	$4,915	$1,229	80KW	10	$125,500	$2,500	$13,000	$9,500	$25,000	$175,500		
		75A																						
		75B																						
		76																						
		77																						
													$108,979	**$27,245**		**24**						**$422,400**	**$558,623**	
The switchboard cost of $40,000 includes the cost of circuit breakers for gates 72,74,75A,75B,76 & 77																								
8	**TERMINAL 8**	80		$4,500	1 1/2"	221	$60	$13,260	$800	$750	$19,310	$5,214	$24,524	$6,131	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing distribution panels (DP1A & DP3A) serving existing battery chargers shall be reutilized to serve new battery charging stations.
		81																						
		82		$4,500	1 1/2"	74	$60	$4,440	$800	$750	$10,490	$2,832	$13,322	$3,331	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		83																						
		84		$4,500	2 1/2"	211	$60	$12,660	$800	$750	$18,710	$5,052	$23,762	$5,940	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		85																						
		86																						
		87		$4,500	2 1/2"	92	$60	$5,520	$800	$750	$11,570	$3,124	$14,694	$3,673	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		88		$4,500	1 1/2"	121	$60	$7,260	$800	$750	$13,310	$3,594	$16,904	$4,226	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
													$93,205	**$23,301**		**14**						**$283,800**	**$400,307**	
9	**AMERICAN EAGLE**	44A		$4,500	1 1/2"	100	$60	$6,000	$800	$750	$12,050	$3,254	$15,304	$3,826	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		Existing Electrical service from DWP at the Terminal is adequate and no upgrade is required for incoming service. Existing distribution panels (HB1F,HB1K & HB1H) serving existing battery chargers shall be reutilized to serve new battery charging stations.
	COMMUTER	44B		$4,500	1 1/2"	150	$60	$9,000	$800	$750	$15,050	$4,064	$19,114	$4,778	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
	FACILITY	44C		$4,500	1 1/2"	250	$60	$15,000	$800	$750	$21,050	$5,684	$26,734	$6,683	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44D		$4,500	1 1/2"	100	$60	$6,000	$800	$750	$12,050	$3,254	$15,304	$3,826	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44E		$4,500	1 1/2"	75	$60	$4,500	$800	$750	$10,550	$2,849	$13,399	$3,350	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44F		$4,500	1 1/2"	200	$60	$12,000	$800	$750	$18,050	$4,874	$22,924	$5,731	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44G		$4,500	1 1/2"	75	$60	$4,500	$800	$750	$10,550	$2,849	$13,399	$3,350	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44H		$4,500	1 1/2"	100	$60	$6,000	$800	$750	$12,050	$3,254	$15,304	$3,826	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44I		$4,500	1 1/2"	150	$60	$9,000	$800	$750	$15,050	$4,064	$19,114	$4,778	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
		44J		$4,500	1 1/2"	200	$60	$12,000	$800	$750	$18,050	$4,874	$22,924	$5,731	30KW	2	$32,500	$500	$2,600	$1,900	$9,500	$47,000		
													$183,515	**$45,879**		**20**						**$470,000**	**$699,394**	

C-2B LAX eletGSE Electrification Project Cost Estimate-Central Terminal Area (Considering some existing Smart Chargers to remain)

Item #	Airline	GATE	Switchboard		Infrastructure Cost				Miscellaneous Items		Summary	Soft Cost	Summary	Project Contigency	Battery Charging Station								Summary	Total	Comments
			New Swithboard/ Panelboard Cost	(Reusing Existing Switchboard) New Circuit Breaker Cost	Feeder size	Feeder Length (feet)	Cost per Linear feet	Feeder Cost	Concrete Pad	Disconnect switch Cost	Power Infrastructure Cost	Considering 27% of Power Infrastructure Cost	Power Infrastructure Cost + Soft Cost	Considering 25% of Power Infrastructure Cost + Soft Cost	Battery Charger Size (KW)	#of Battery Charging Ports	Battery Charger & Power server Cost	Stands	Cable Cost	Cable Management	Installation Cost	Battery Charging Station Cost		
10	**BRADLEY WEST**	130														2								
		132														2								
		134														2								
		South Cluster				7X350	$25	$61,250		7X$750	$66,500	$17,955	$84,455	$21,114	7X30KW	14	$227,500	$3,500	$18,200	$13,300	$66,500	$329,000		All new battery charging station provisions for some of the Individual gates are being provided under **LAX Bradley West Modernization Project.** For South and North side battery charging clusters, only conduit stubs will be provided under **LAX Bardley West Modernization Project.** New conductors,disconnect switches, circuit breakers and Battery chargers & accessories for North & South side battery charging cluster will be part of this project.
		151														2								
		152														2								
		153														2								
		154														2								
		155														2								
		156														2								
		157														2								
		North Cluster		$4500X10		14X150	$25	$52,500	$11,200	14X750	$74,200	$20,034	$94,234	$23,559	14X30KW	28	$455,000	$7,000	$36,400	$26,600	$133,000	$658,000		
													$178,689	**$44,672**		**62**						**$987,000**	**$1,210,361**	
11	**WEST RON**	201A		$4,500	2 1/2"	700	$60	$42,000	$800	$750	$48,050	$12,974	$61,024	$15,256	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		Existing service and switchboard from Elecctrical room 1 & 2 are being upgraded under **400Hz Electrification Project.** The cost of the switchboard upgrade is excluded from this cost estimate.
		201B		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202A		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202B		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202C		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202D		$4,500	2 1/2"	550	$60	$33,000	$800	$750	$39,050	$10,544	$49,594	$12,398	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		202E		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		203		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		203C		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		205A		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		205B		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		205C		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		211		$4,500	2 1/2"	400	$60	$24,000	$800	$750	$30,050	$8,114	$38,164	$9,541	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		213		$4,500	2 1/2"	800	$60	$48,000	$800	$750	$54,050	$14,594	$68,644	$17,161	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		215		$4,500	2 1/2"	700	$60	$42,000	$800	$750	$48,050	$12,974	$61,024	$15,256	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		217		$4,500	2 1/2"	600	$60	$36,000	$800	$750	$42,050	$11,354	$53,404	$13,351	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
		219		$4,500	2 1/2"	500	$60	$30,000	$800	$750	$36,050	$9,734	$45,784	$11,446	40KW	4	$49,900	$500	$5,200	$3,800	$12,000	$71,400		
													$865,950	**$216,487**		**68**						**$1,213,800**	**$2,296,237**	
12	**MIDFIELD SATELLITE CONCOURSE**		**N/A**																				**N/A**	

Appendix C – Attachment 1
Battery Charger Installation Manual

DVS
INSTALLATION MANUAL

A Product of AeroVironment Inc.
825 South Myrtle Avenue · Monrovia, California 91016 · U.S.A.
Telephone (626) 357-9983 · FAX (626) 359-9628
www.posicharge.com

CONFIGURATION MANAGEMENT

Author Forbes Bagatelle-Black

REV	ECO#	DESCRIPTION	DATE
A	4915	Initial Release	7/24/03

TABLE OF CONTENTS

FIGURES

TABLES

1 SCOPE

This manual is intended to provide the user with the information necessary to safely install the AeroVironment DVS battery charger.

2 SAFETY PRECAUTIONS

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

The DVS charger was designed with user safety as the highest priority. However, the following safety precautions must be read and observed:

- Do not install the charger if there is physical damage to the charger or cable.
- Follow the National Electrical Code (NEC) and local codes.
- Only use metal conduit above ground.
- Do not block air intake or exhaust.
- Do not disassemble the charger.
- Do not subject the cable to damage or stress.

3 INSTALLATION INSTRUCTIONS

Only authorized installers or repair persons are authorized to perform the installation, maintenance, and repair of the DVS charger.
For locations where summer ambient temperatures consistently exceed 110 degrees Fahrenheit, it is recommended that this product be installed in an area shaded from direct sunlight. This will minimize any product derating that may occur during operation at extremely hot temperatures.

3.1 CONDUIT CONNECTIONS

Use minimum 1" conduit for utility wiring. See Figure 3.5 for acceptable locations for conduit cutouts. Take care to prevent metal shavings in unit when punching conduit holes.

3.2 WIRING

3.2.1 General Guidelines

See Figure 3.1 – DVS Electrical Connections

Table 3.1 for Input parameters. Use only copper conductors for system wiring. All wiring shall conform to the National Electrical Code (NEC) and local codes.

3.2.2 Grounding

Wire shall be green or green with a yellow stripe attached to the terminal provided. See Figure Figure 3.1 for location of ground connection. See Table Table 3.1 for wire gauge.

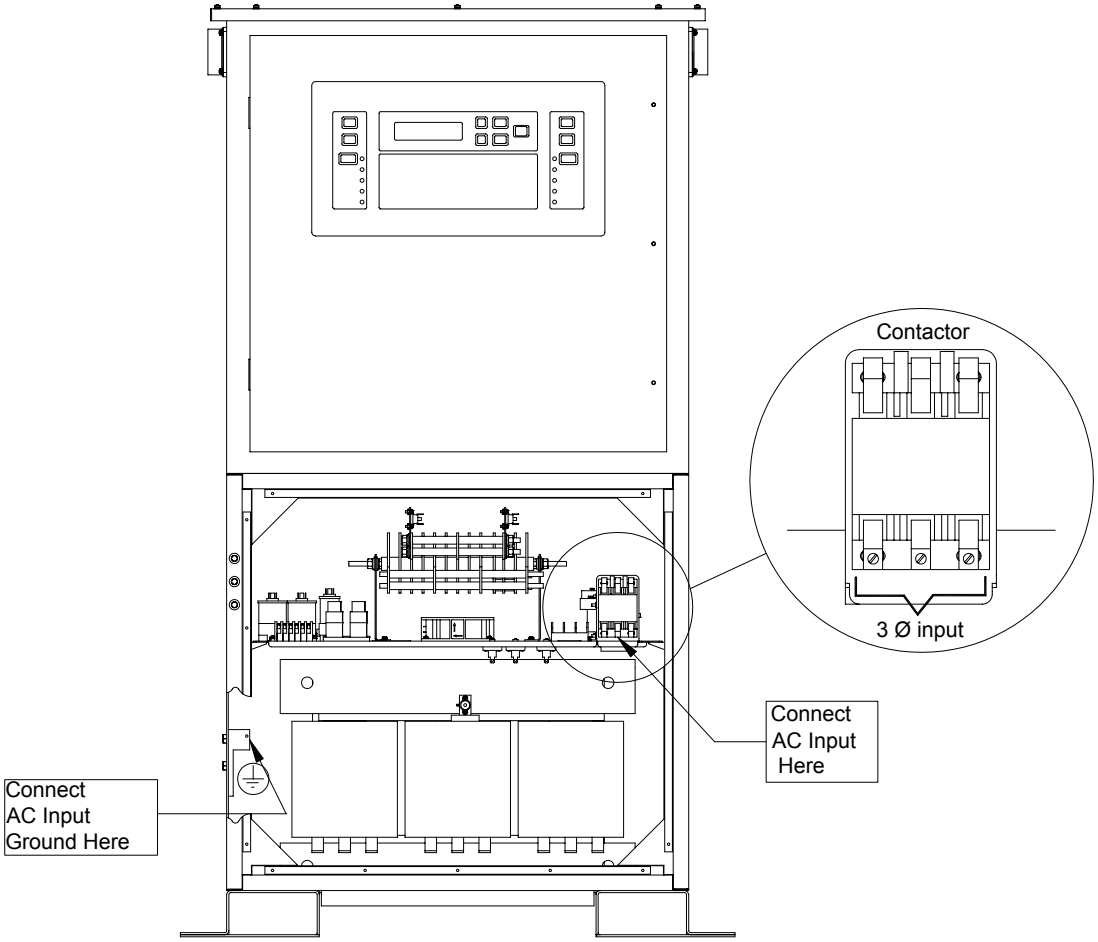


Figure 3.1 – DVS Electrical Connections

Table 3.1– Electrical Characteristics

Characteristic	**Value**
Input Voltage	480 VAC
Input Current at Rated Output	40 Amps
Input Frequency	60 Hz
Number of Input Phases (Excluding Ground)	3
Maximum Circuit Breaker Rating	50 Amps
Minimum Circuit Breaker Inrush Rating	500 Amps
Minimum Disconnect Switch Voltage Rating	600 VAC
Minimum Input Conductor Size	6 AWG
Minimum Grounding Conductor Size	8 AWG
Output Voltage	0-120 VDC
Output Current	0-500 Amps
Output Power	30 kW

Table 3.2 - Torque Ratings for Input and Output Connectors

Connector	Torque Rating
Power Supply Cabinet Input Utility Voltage (3 phases)	65 in-lb
Power Supply Cabinet Input Utility Ground	65 in-lb
Power Station Cabinet Terminal Block Screws	12 in-lb
Power Station Cabinet Output Wiring Terminals	350 in-lb
Power Station Cabinet Grounding Terminal	200 in-lb

3.2.3 Input Power Connection

See Table 3.1 for wire size and additional information. See Figure 3.1 for location of input power connection. See Table 3.2 for torque values associated with input cable connectors. Use THHN or equivalent 600V, 60° C. Higher temperature insulation may be used, but AWG must be based on 60° C insulation.

NOTE:
FOR PROTECTION AGAINST FIRE AND SHOCK 50 AMP UL LISTED BRANCH CIRCUIT OVERLOAD PROTECTION MUST BE USED
ROUTE INPUT WIRE AWAY FROM TRANSFORMER COILS
TAKE CARE TO PREVENT WIRE STRANDS FROM EXTENDING BEYOND INDIVIDUAL TERMINAL BLOCK CONNECTIONS

3.3 Specifications

3.3.1 Electrical

See Table 3.1 for electrical characteristics.

3.3.2 Mechanical

3.3.2.1 Outline Dimensions

The Outline dimensions of the DVS are shown in Figure 3.2.

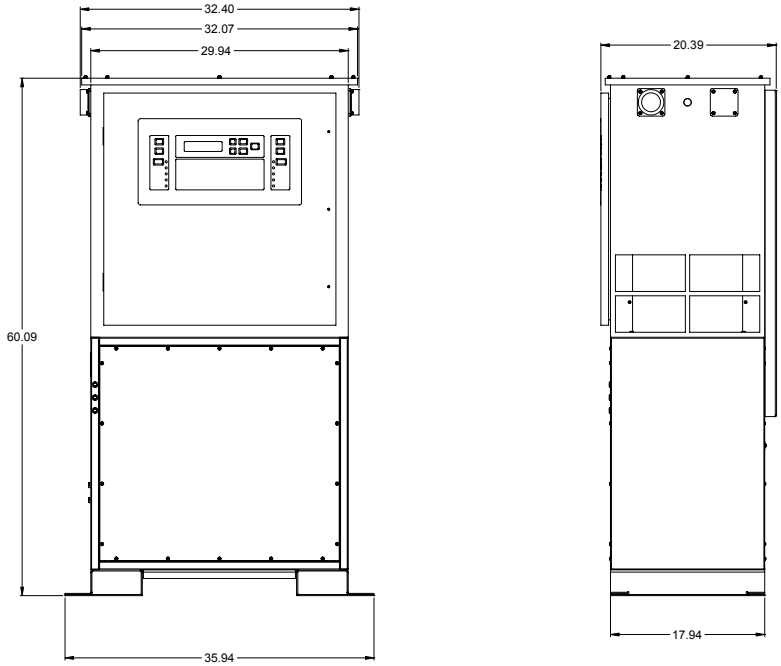


Figure 3.2 – DVS Outline Dimensions

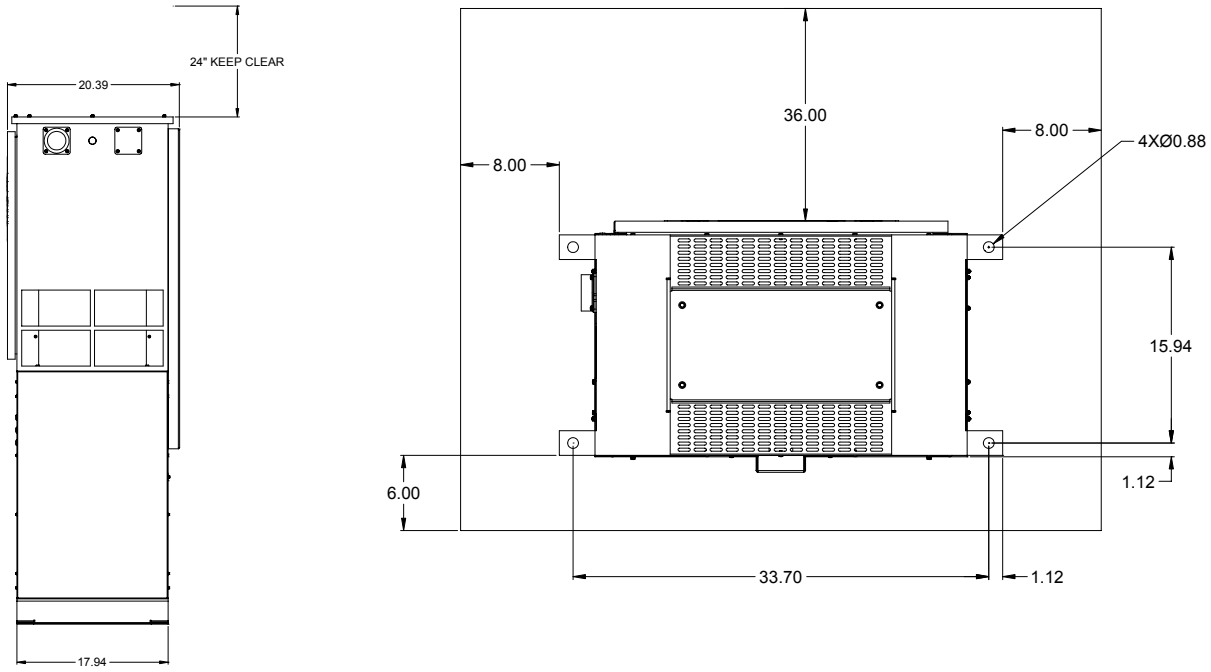
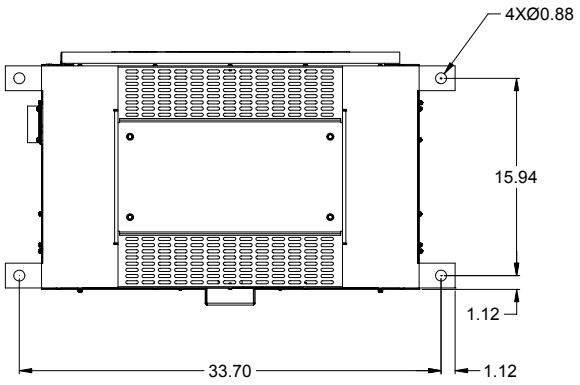


Figure 3.3 Clearance Zones

3.3.2.2 Mounting

The DVS must be securely bolted to the floor using the mounting tabs provided. See Figure 3.4 for mounting dimensions. The unit must have at least: 6 inches of clearance at the back, 8 inches of clearance on the sides, 36 inches in the front, and 24 inches above the top. See Figure 3.3.



All dimensions specified in inches

Figure 3.4 – Mounting Footprint

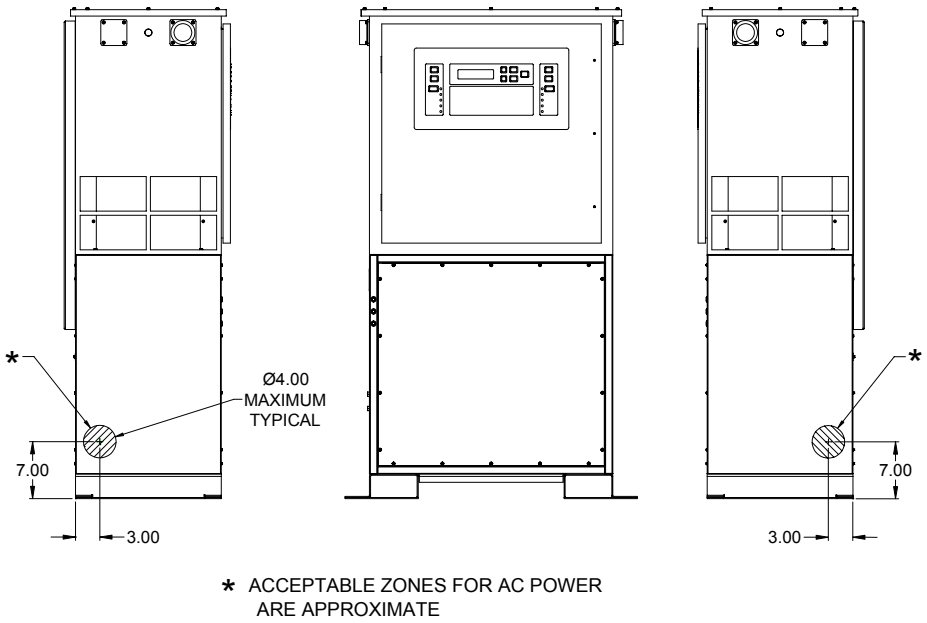


Figure 3.5 – Conduit Connection Zones

4 Output Cable Installation

4.1 Required Tools

Tool	Purpose	Qty
Philips Head Screwdriver	Tighten Screws on Communication Terminal Block in DVS	1
¾" Deep Socket	Tighten Nuts on Power Terminals in DVS	1
Adjustable Wrench Capable of Spanning 3 1/4"	Tighten Conduit Fittings	2
Allen wrench 1/8"	Remove screws on upper compartment	1
Allen wrench 3/32"	Remove screws on lower compartment	1

Cable strain relief components (2 ea)

a) Compression Fitting
b) Compression Bushing
c) Tapered Compression Ring
d) Compression Washer
e) Compression Nut
f) Conduit Reducer

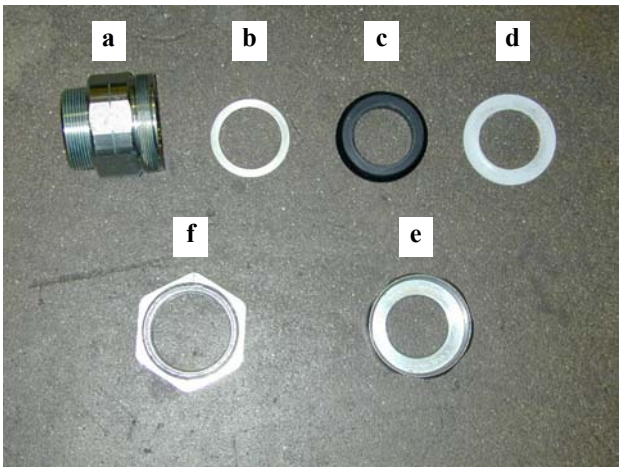


Figure 4.1- Strain Relief Components

4.2 Conduit Hub Installation

Install threaded reducers fitting into conduit hubs on DVS channels A and B as shown in Figure 4.2.

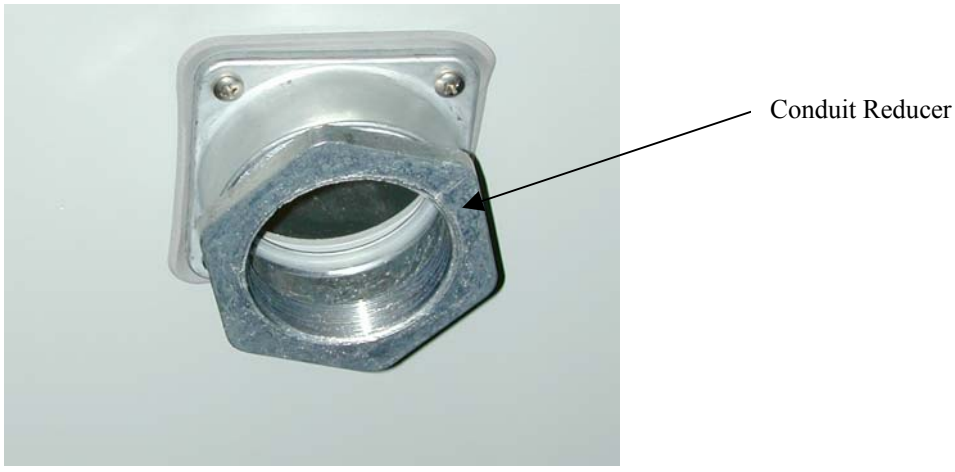


Figure 4.2 Conduit Reducer

4.3 Strain Relief Pre-Assembly

Slide cable retention components onto cable as shown in Figure 4.3 on channels A and B.

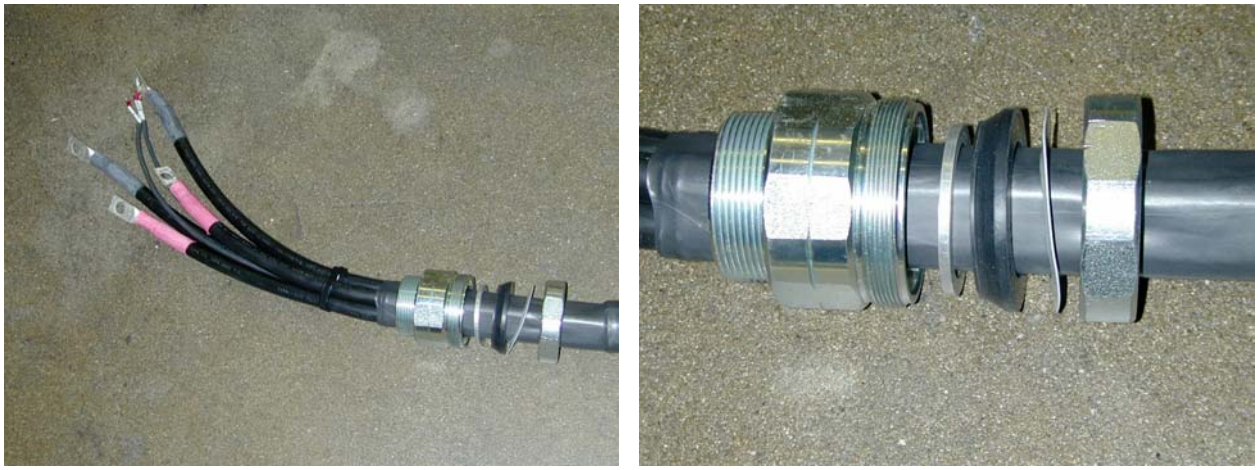


Figure 4.3 Strain Relief Pre-Assembly

4.4 Cable Installation and Connection

See Table 3.2 for all connector torque values. Feed cable assembly through conduit reducer in DVS channel A (right hand side of unit). Be sure to locate compression fitting over section of cable covered with heatshrink tubing as shown in Figure 4.3. Tighten the conduit reducer and compression fitting. Adjust the cable assembly to allow the cable ends with red heatshrink to mount to the (+) terminal in the DVS and the cable ends with black heatshrink to mount to the (-) power terminal. See Figure 4.4. Connect the communication wires marked 1, 2, 3 and 4 to the matching terminals on the communication terminal block in the DVS. See Figure 4.5. Repeat steps to install cable and connections on channel B (left hand side of unit).

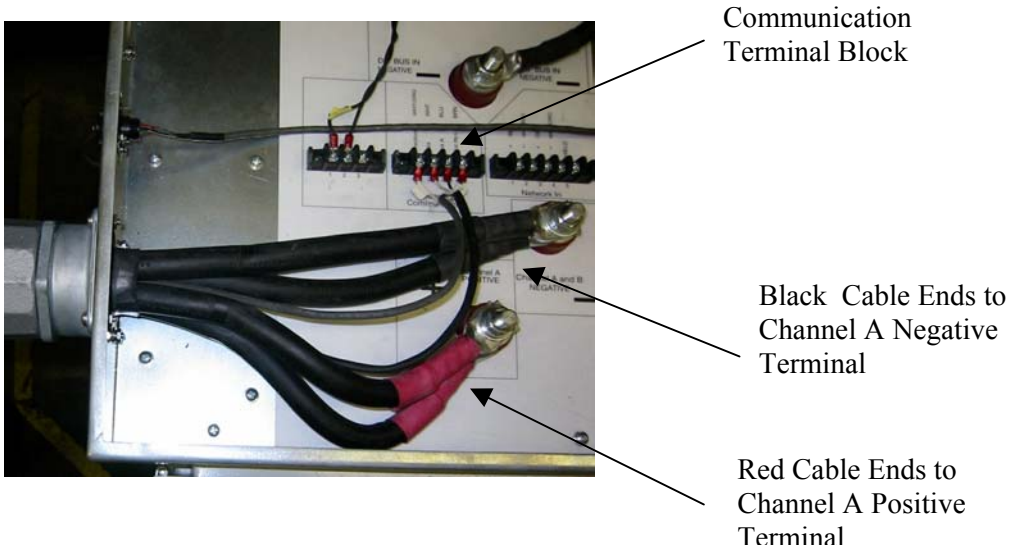


Figure 4.4 DVS Upper Compartment, Channel A

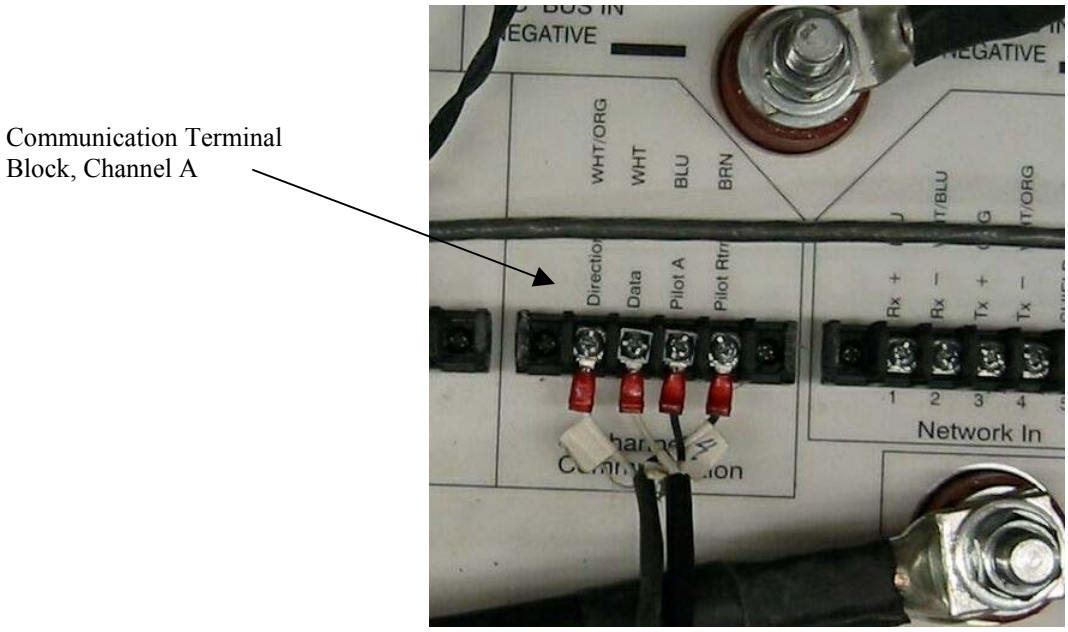


Figure 4.5 Communication Terminal Block Detail, Channel A

4.5 Securing Cables

With the cable assembly in place and the electrical connections secure, slide the compression bushing, tapered compression ring, and compression washer into the compression fitting. Tighten the compression nut until the tapered compression ring achieves a firm grip on the cable. The completed cable and compression hardware assembly is shown in Figure 4.6. Secure cables on channels A and B.

Figure 4.6 Installed Cable

PosiCharge™ DVS

MAXIMUM EFFICIENCY • HIGH OUTPUT • DUAL VEHICLE CHARGE

The PosiCharge™ DVS Dual-Vehicle System:

- *Lower infrastructure costs compared to large scale single-vehicle systems*
- *More charge power for heavy applications, compared to other multiple vehicle systems*
- *Flexible one- or two-vehicle charge option*
- *Affordable stand-alone solution for small or remote fleets*
- *Maximum efficiency*

MODEL DVS300

Power Rating	*30kW*
*Utility Requirements**	*480VAC, 3 Phase*
Full Load Amp Draw	*40A*
Max. Circuit Breaker Rating	*50A*
Power Factor	*0.98*
Battery Voltage Range	*24v – 96v*
Max. Output Current (Dual Mode)	*250A*
Max. Output Current (Single Mode)	*500A*
Weight	*905 lbs.*
Dimensions	*60"h x 32.4"w x 21.9"d*
Communication Port	*RS232*

** 600VAC also available*

Model DVS400

Power Rating	*40kW*
*Utility Requirements**	*480VAC, 3 Phase*
Full Load Amp Draw	*56A*
Max. Circuit Breaker Rating	*70A*
Power Factor	*0.98*
Battery Voltage Range	*24v – 96v*
Max. Output Current (Dual Mode)	*250A*
Max. Output Current (Single Mode)	*500A*
Weight	*915 lbs.*
Dimensions	*60"h x 32.4"w x 21.9"d*
Communication Port	*RS232*

** 600VAC also available*

FLEXIBLE.
Simultaneously charges all common battery types and voltages

INTELLIGENT.
Instantly recognizes voltage, state of charge, temperature

CUSTOMIZED.
Adapts charge rate according to charge acceptance limit and temperature for safest fast charge

SAFE.
Automatic Start/Stop anti-arcing disconnect

EASY.
Easy to install, easy to use

TURNKEY.
Programmable EQ automatically equalizes when it's convenient for your operation

COMPACT.
Small footprint for easy integration and remote placement

EFFICIENT.
High efficiency IGBT technology

ESSENTIAL.
Easy data download provides critical fleet management information

*PosiCharge™ systems eliminate the need for battery changing by keeping trucks running on one battery…**all day**.*

POSICHARGE DVS

PosiCharge™ is an AeroVironment, Inc. Business

825 S. Myrtle Ave., Monrovia, CA 91016
(p) 626.357.9983 x311 (f) 626.357.9729
www.posicharge.com

MVS 400
INSTALLATION MANUAL

Certificate No. 8766

PosiCharge is an AeroVironment, Inc. Business
1610 S. Magnolia Avenue – Monrovia, California 91016 U.S.A.
Telephone (626) 357-9983 – FAX (626) 301-9532

Configuration Management

Author: William H. Conn

Release Date: 11/15/04

ECO	Rev	Change Description	Date
5745	A	Initial Release	11/15/04

TABLE OF CONTENTS

LIST OF FIGURES

TABLES

1 SAFETY PRECAUTIONS - READ BEFORE USING

The MVS 400 and PowerStation are designed with the safety of the user as the highest priority. However, installation must comply with all local codes, and the following safety precautions must be read and observed.

1.1 SYMBOL USAGE

Throughout this manual, take special note of the information marked with the following symbols:

DANGER	Contains information about safety practices necessary to prevent personal injury or death.

WARNING	Contains information about safety practices necessary to prevent fire or equipment overheating.

CAUTION	Contains information to prevent shock hazard or possible damage to the equipment during installation and service.

NOTE: Offers helpful information for installation or usage, but does not contain personnel or equipment safety related information.

CAUTION BEFORE YOU BEGIN	• Read all instructions and cautionary markings on the Industrial PosiCharge Assembly. • Make sure you also read the IMPORTANT SAFETY INSTRUCTIONS below. • Be sure to leave these instructions with the installed unit for future reference. • Only qualified personnel should install, use or service this charger. • Read and understand these Manufacturer's instructions and your employer's safety practices manual.

DANGER	ELECTRIC SHOCK CAN KILL: • Touching live electrical parts can cause fatal shocks or severe burns. • The battery terminals are always electrically live, and the output circuit is live whenever the battery is connected or being charged. • The input power circuitry and internal circuits are live whenever input power is on. • An incorrectly installed or improperly grounded charger is a hazard.

- The unit must be grounded properly with a grounding conductor of size equal to or larger than that recommended by local electrical codes.
- Do not touch uninsulated battery terminals.
- Only qualified service personnel may remove the cover on the MVS 400 or PowerStation cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel. Opening the system or attempted installation or repair by other than qualified service personnel voids the warranty.
- Disconnect battery charger from input power and battery connections before installing or servicing the MVS 400. Lockout/tagout input power according to OSHA 29 CFR 1910.147.
- Do not expose to rain or perform installation/service/repair work when in standing water.
- Before disconnecting the battery, turn off the charger by pressing the stop button on the front panel of all PowerStations. PowerStations are designed to automatically stop a charge event to minimize arcing or burning of the charger connections in the event of a hot disconnect.

⚠ WARNING	OSHA INSTRUCTION STD 1-11.4 OCTOBER 30, 1978 4. Action "Battery charging" areas where power industrial truck batteries are charged only—no maintenance is performed, batteries are not removed from the trucks and no electrolyte is present in the area—are not subject to the requirement of 29 CFR 1910.178 (g) (2). The charging areas shall be in compliance with 29 CFR 1910.178 (g) (1), (8), (9), (10), (11) and (12). Personal protective equipment shall be used when and where required.

⚠ WARNING	IMPROPER INSTALLATION CAN CAUSE FIRE

- Do not install or place unit on, over or near combustible surfaces.
- Do not install unit near flammables.
- Do not block air intake or exhaust.
- Do not block airflow to the unit.
- Replace blown fuses only with same type and rating of fuse.
- Do not overload building wiring - be sure utility power service is properly sized, rated and protected to handle this unit. Use only on circuits provided with the minimum wire size specified in the installation section.
- Protective bollards should be installed where charging equipment location is subject to damage from vehicle activity.
- Do not install the charger if there is physical damage to the charger, coupler, or cable.

- Do not subject the cable or coupler to damage or stress. Do not step on the coupler cable.
- Do not hang from the coupler cable.
- Do not disassemble the MVS 400 or PowerStation.
- Only use metal conduit above ground.
- Follow the National Electrical Code (NEC) and local codes. NEC and local codes take precedence. If any instructions in this manual conflict with NEC or local codes, contact AeroVironment Inc. for further information.

2 GENERAL INFORMATION

2.1 SCOPE

This manual is intended to provide an authorized, fully trained installation technician with the information and guidance necessary to safely install the MVS 400™ and PowerStation™ equipment.

All non-standard tools are listed in Table 2.1. If parts or tools are needed in addition to those listed in this manual to perform service, this service is outside the scope of this manual and AeroVironment should be contacted directly for further assistance.

Training may be scheduled by contacting Customer Service at AeroVironment at:

(626) 357-9983 ext. 211

Fax: (626) 357-9729

E-mail: service@aerovironment.com

2.2 List of AeroVironment-Provided Equipment

Equipment Description	Quantity	Part Number	Comments
MVS 400	1	09190	
PowerStations	1-3	06900	
PowerStation Stands	0-8	08628	Optional
Cable Management Pole Assy	0-16	07233	Optional

2.3 Non-Standard Tools

Table 2.1 – Required Non-Standard Tools

No.	Equipment Description	Suggested Supplier	Part Number
A.	Multimeter	Fluke	8060A TRMS
B.	Bleed down resistor (300Ω, 10W) with alligator clips	AeroVironment, Inc.	FS-100-003
C.	Hex wrench set, SAE, 1/8” to 3/8”	---	---
D.	PowerStation Diagnostic Cable	AeroVironment, Inc.	06969

2.4 Required Literature

The following documents are required reference material for this installation procedure. Installation technicians must read and understand these documents before proceeding with installation process.

Table 2.2 – Required Reference Literature

AeroVironment Document #	Title
08628-76	PowerStation Stand Installation Guide
09416-03	Operation and Maintenance Manual, MVS 400 Fast Charging System

2.5 MVS 400 SYSTEM OVERVIEW

The MVS 400 is a complete multi-port fast charging system. The system may be configured as a stand-alone two port 40 kW fast charging system by connecting utility power and securing the unit to the floor. MVS 400 may be configured as a mult-port fast charging system by adding up to three PowerStations to create a 40 kW parallel fast-charging system comprising 4, 6, or 8 ports.

2.6 ESD Precautions

Electronic circuits are sensitive to damage from electrostatic Discharge. Persons servicing this equipment should be trained in proper techniques for avoiding ESD damage to electronic circuits. As a minimum, when handling circuit boards, wear an appropriate ESD wrist strap connected to the equipment chassis.

3 Installation Instructions

Only authorized installers or repair persons are authorized to perform the installation, maintenance, and repair of the MVS 400 and PowerStation.

3.1 Equipment Access

Be sure to use the proper size driver bits when removing or installing screws to avoid stripping the heads. A driver with a clutch setting just sufficient to drive the screws should be used to install them, this will avoid stripping the threads or breaking the threaded inserts. Screws should be started slowly after aligning the holes to avoid cross threading.

3.2 Conduit Connections

- Conduit size for all connections is 2 -1/2".
- 2-1/2" threaded hubs are provided.
- See Figure 6 for acceptable conduit entry locations

3.3 PowerStation Stand Installation

- Follow instructions in AV document 08628-76, PowerStation Stand Installation Guide

3.4 Cable Management System Installation

- Follow instructions per Figure 9.
- Note that concrete anchors are provided with installation kit.

3.5 Wiring

3.5.1 General Guidelines

- Table 3.3, Table 3.4, Table 3.5 and Table 3.6 for Input/Output parameters.
- See Figure 3 for MVS 400 Input/Output wiring. See Figure 12 for suggested PowerStation wire routing.
- Use only copper conductors and lugs for system wiring.
- External wiring and lugs are not provided.

3.5.2 Ground Wire

- Green or green with a yellow stripe and attached to the compression lug provided.

3.5.3 Output Wire

- Table 3.3, Table 3.4, Table 3.5 and Table 3.6 for wiring size (AWG) and additional information.
- Use THHN or similar type, 600V, 90° C, suitable for conduit use.
- Use copper conductors only.

3.5.4 Chassis Ground

- Table 3.3, Table 3.4, Table 3.5 and Table 3.6 for wiring size (AWG) and additional information.
- Use THHN or similar type, 600V, 90° C, suitable for conduit use.
- Use copper conductors only.

3.5.5 120 VAC Wire

- 120 VAC is from an isolated supply, limited to 10 amps, and is used for internal loads only. These wires are connected to a terminal block that can accept solid wire.
- This wire must be AWG 14 with a temperature rating of 75-90° C, use THHN or similar type, 600V, suitable for conduit use.
- See Table 3.4 for additional information.

3.6 Grounding

- MVS 400 must be connected to an equipment-grounding conductor routed with the circuit conductors. Connections must comply with all local codes and ordinances.
- The MVS 400 must be grounded in accordance with the Facilities Utility grounding method.
- See
- Table 3.3, Table 3.4, Table 3.5 and Table 3.6 for minimum ground wire size.
- The PowerStations are grounded by using the output-grounding stud in the MVS 400.
- See Figurer 1 for illustration of grounding connections.
- All other PowerStations are grounded via the first station and then the next PowerStation using the grounding stud provided in the wiring compartment in each PowerStation.

3.7 Communications and Control Cables

The communication cables from the MVS 400 to the first slave PowerStation and from each subsequent PowerStation to the next PowerStation must meet the following requirements:

A. See Table 3.5 for additional information.

B. Cable construction shall be suitable to be run in conduit.

C. Communications cables shall be constructed of 2 pairs of twisted, shielded wires. A cable comprising two twisted pairs with a single overbraid shield is also acceptable. Cable shields shall be terminated together and connected and routed per Figure 1 and Figure 12.

D. Control cables shall be constructed of 2 pairs of twisted wires. No shielding is required.

E. Conductor wire size shall be no less that 18 AWG with a minimum voltage rating of 300 volts and a minimum temperature rating of 75º C.

F. The recommended communication cable is ANIXTER wire PN: 2L-1802 POS or Alpha wire PN: 45132.

G. Communication cable wire colors are not standardized and are subject to change.

H. Wires, including shield terminations, shall be lugged using an insulated ring lug with a No. 6 hole.

3.8 Hardware

Manufacturer does not supply all external mounting hardware. User-supplied hardware may be needed to complete the installation.

3.9 Specifications

Table 3.1 – Physical Characteristics of GSE Equipment

Component	Height	Width	Depth	Weight
MVS 400	60”	32.4”	21.9”	905 lbs
PowerStation	30.0"	30.0"	19.0"	304 lbs
PowerStation on Stand	60.0"	30.0"	21.0"	363 lbs

Table 3.2 – Clearance Requirements for GSE Equipment

Component	Front	Back	Left	Right
MVS 400	36"	6"	8"	8"
PowerStation	36"	1"	6"	6"
PowerStation on PowerStation Stand	36"	6"	6"	6"

Table 3.3 – MVS 400 Input and Output Power Characteristics

Parameter	Value			
Input Voltage (VAC)	480			
Input Frequency (Hz)	60			
Number of Input Phases (Excluding Ground)	3			
Minimum Circuit Breaker Inrush Rating (Amps)	500			
Minimum Disconnect Switch Voltage Rating (VAC)	600			
Charge Port Output Voltage (VDC)	0-120			
Charge Port Output Current (Amps)	0-500			
Maximum Circuit Breaker Rating (Amps)	40	50	60	70
Input Current at Rated Output (Amps)	32	40	48	56
Minimum Input Conductor Size (AWG)	8	6	4	4
Minimum Grounding Conductor Size (AWG)	8	8	8	8
Minimum Input and Grounding Conductor Terminal Torque (in-lb)	65	65	65	65
Maximum Output Power (kW)	22.5	27	33	40
Maximum DC Bus Current (Amps)	166	201	248	305
Minimum DC Bus Conductor Size (AWG)	2/0	3/0	250 MCM or 2ea. 1/0	350 MCM or 2ea. 2/0
Minimum DC Bus Ground Wire Size (AWG)	4	4	4	2

Reference National Electrical Code. ANSI/NFPA 70.1999

Table 3.4 – Auxiliary AC Output Characteristics for MVS 400

Output Voltage (VAC)	120
Output Current (Amps)	4.2
Minimum Conductor Size (AWG)	14
Terminal Screw Size	#6
Minimum Wiring Terminal Torque (in-lb)	12

Reference National Electrical Code. ANSI/NFPA 70.1999

Table 3.5 – Communication and Control Cable Specifications

Assembly	**Connects**	**Wire Size**	**Description**
Communications Cables	PowerStation to PowerStation	18 AWG	Each cable contains 2 pairs of twisted, shielded (or with overbraid) wires

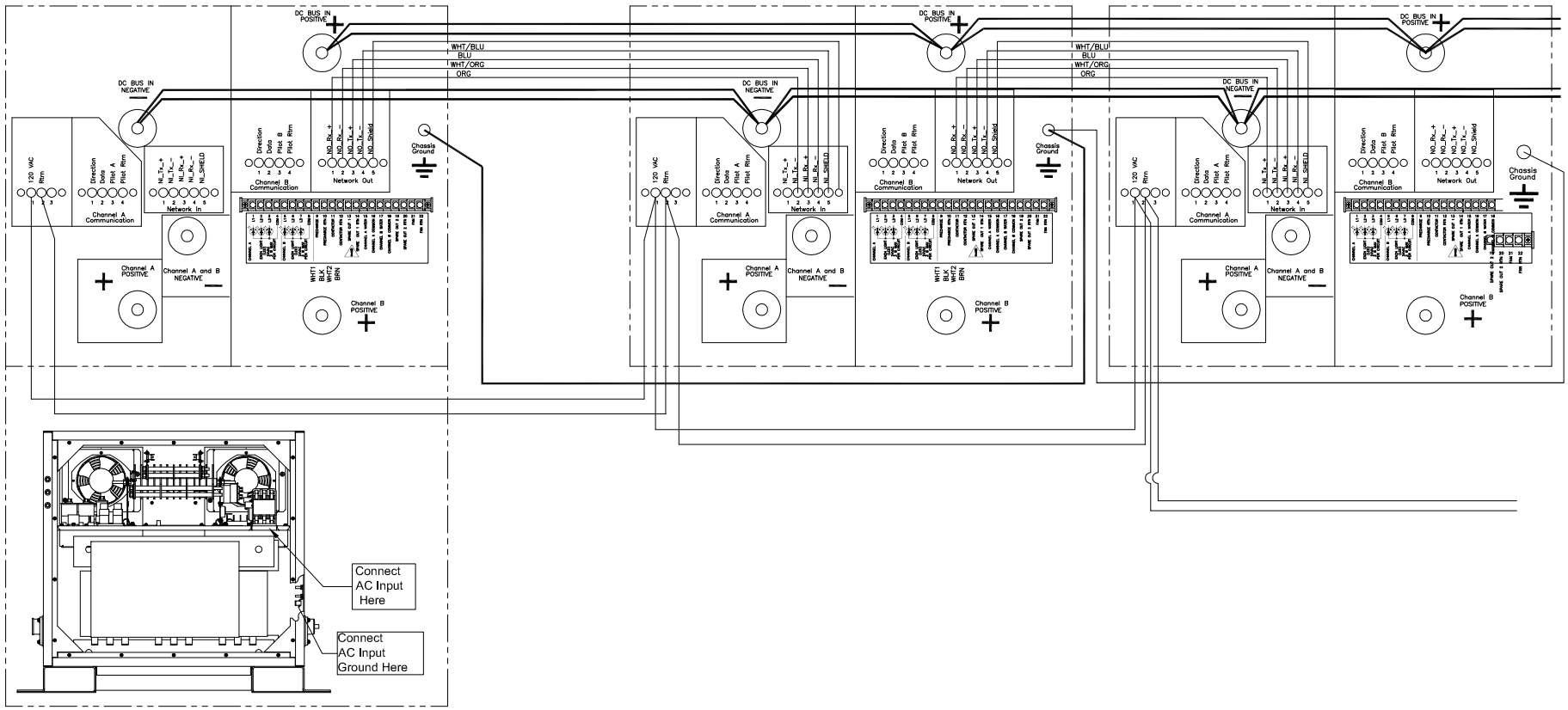
Table 3.6 – Input and Output Power Characteristics for PowerStation

Parameter	**Value**
Input Voltage	150VDC
Input Current, Amperes Maximum at Rated Output	305 A
DC+ and DC- BUS wire size:	See Table 3.3
Input / Output Wiring Stud Size	1/2"
Battery Charger Output Voltage Min. and Max Per Channel (VDC)	0-120
Battery Charger Output Current Min. and Max, 250A mode (Amps)	0-250
Minimum Output Wire Size in AWG, Pos. and Neg., 250A mode, AWG	2/0
Battery Charger Output Current Min. and Max, 500A mode (Amps)	0-500
Minimum Output Wire Size in AWG, Pos. and Neg., 500A mode, AWG	4/0
Minimum Input / Output Wiring Terminal Torque (in-lb)	350
Minimum Input / Output Grounding Conductor Size in AWG	2
Minimum Grounding Terminal Torque (in-lb)	200
Terminal Block Screw Torque (in-lb)	12

Reference National Electrical Code. ANSI/NFPA 70.1999

3.10 Initial Startup

Please see the Operation and Maintenance Manual, AV document #09146-03, for initial startup instructions.



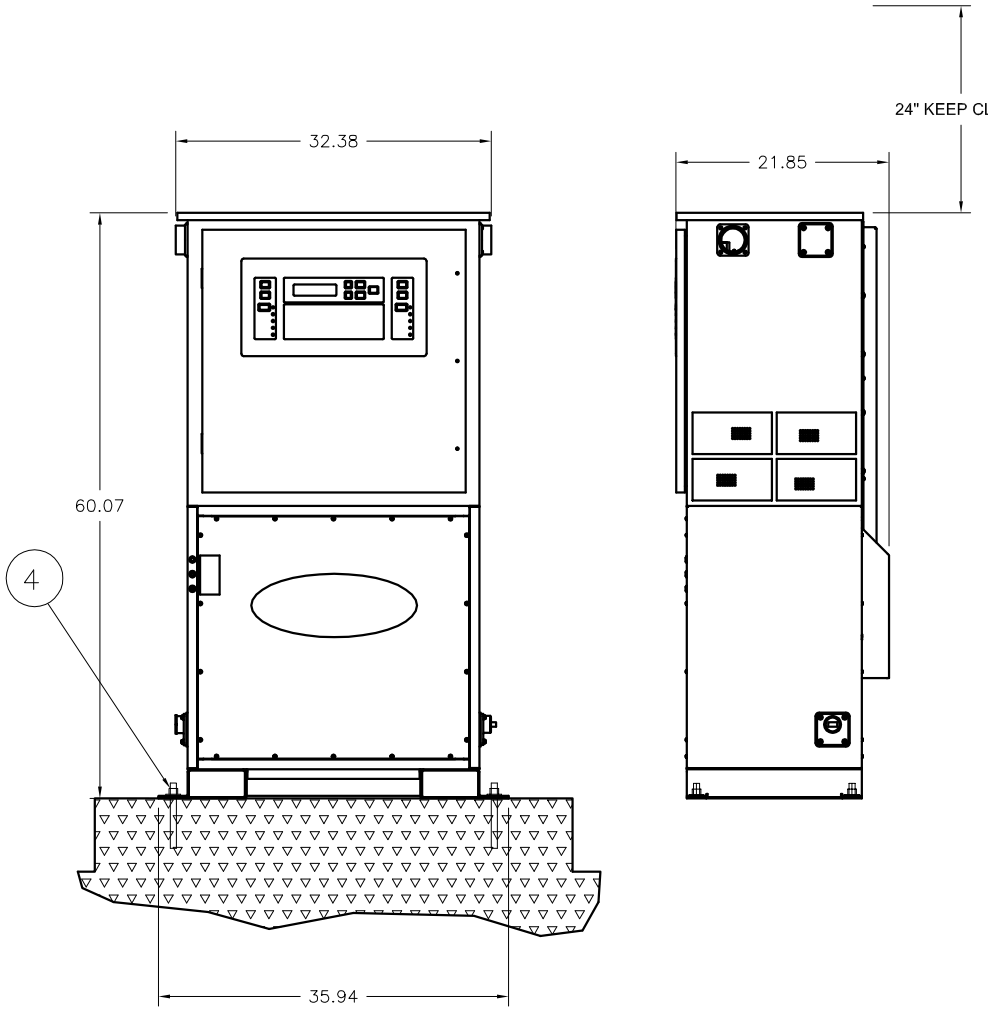
MVS 400™ and PowerStation™ Wiring

1. The MVS 400™ DC output power cable may be wired from the MVS 400™ to the PowerStations™ in any sequence. These DC cables must be wired in "parallel" (not in "series") between PowerStations™.
2. The master PowerStation™ (IN THE MVS 400) Network "OUT" connects to the Network "IN" of the next PowerStation™. All other PowerStations™ have their Network cable connected to the previous PowerStation™ in a similar manner.

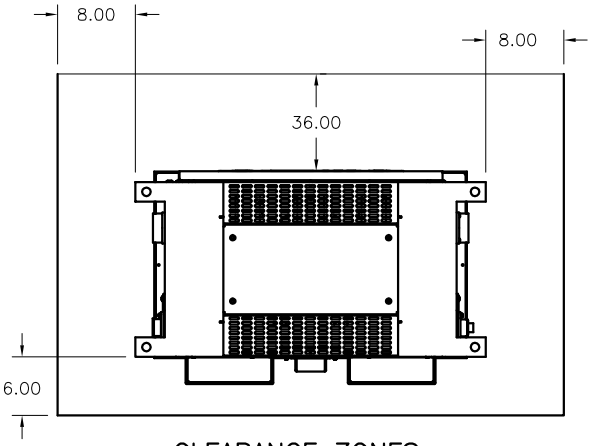
   Note: Always connect terminal 1 of Network out to terminal 1 of network in on the next PowerStation™
   Follow this procedure for terminal 2 through 5
3. The maximum number of PowerStations™ per MVS 400™ is 4, including the master.
4. The 120VAC wiring is generated within the MVS 400™ from an isolated source. The 120VAC cables must be wired in "parallel" (not in "series") between PowerStations™.

NOTES: SEE TABLES 3.3 THRU 3.7 FOR WIRING SIZE AND TYPE

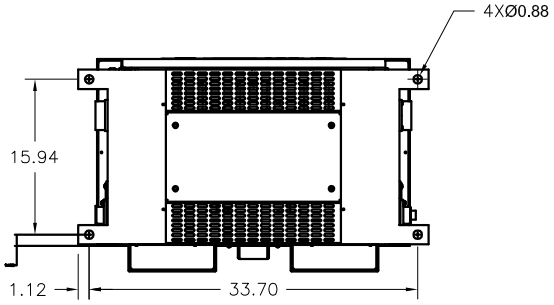
Fig. 1 MVS 400™ And PowerStation™ WIRING DIAGRAM



MVS 400™ OUTLINE DIMENSIONS



CLEARANCE ZONES



MVS 400™ MOUNTING FOOTPRINT

ITEM	QTY	DESCRIPTION
4	4	ANCHOR BOLTS, 5/8 DIA X 6.0"
		PARTS SUPPLIED BY OTHERS

C. MVS 400 MUST BE BOLTED TO CONCRETE PAD USING 5/8" ANCHOR BOLTS AS SPECIFIED

B. ALL DIMENSIONS ARE IN INCHES

A. 6 IN. MINIMUM WORKING CLEARANCE FROM BACK WALL.
36 IN. MINIMUM WORKING CLEARANCE FROM FRONT,
8 IN. MINIMUM WORKING CLEARANCE FROM LEFT,
8 IN. MINIMUM WORKING CLEARANCE FROM RIGHT,
24 IN. MINIMUM WORKING CLEARANCE FROM TOP.

Dimensions are in inches and approximate

Fig. 2 MVS 400™ Installation

FSCM NO. 60107 | DWG. NO. 09415-76 | REV. A | SHEET 15OF26

DWG. NO. 09415-76 | SHEET 15 | REV. A

C. SEE TABLES 3.3 AND 3.4 FOR WIRING INFORMATION

DETAIL VIEW
WIRING COMPARTMENT

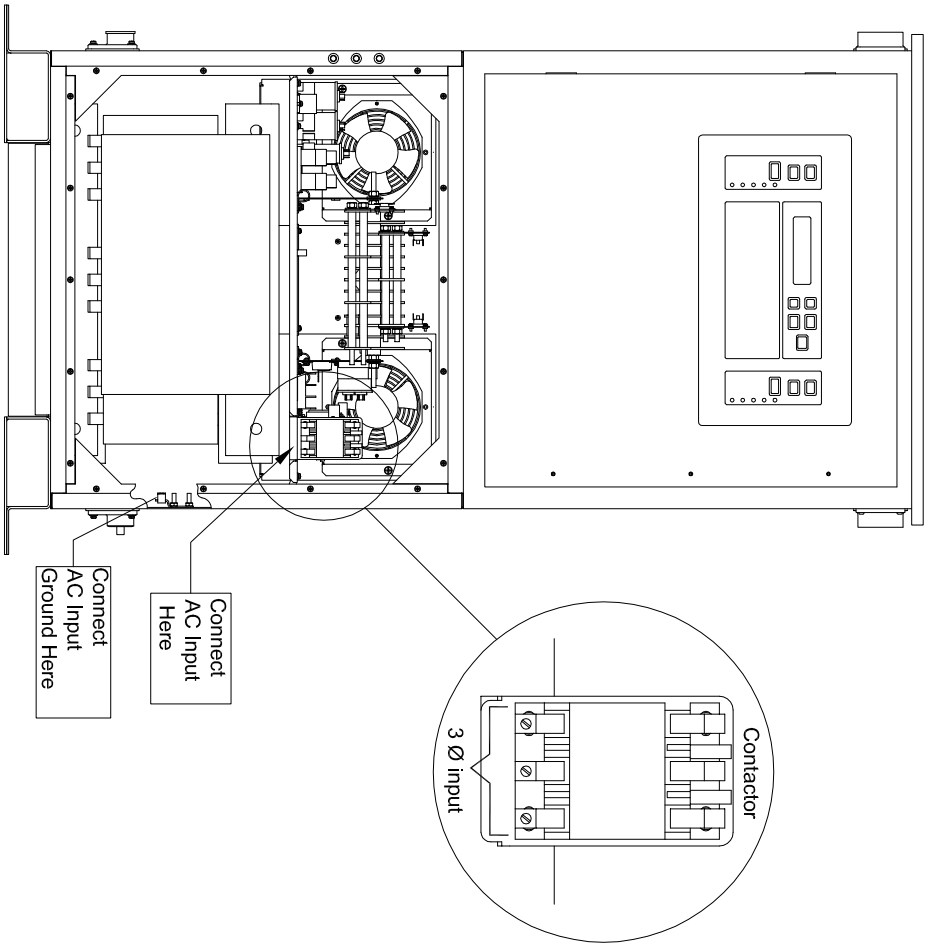


Fig. 3 MVS 400™ Wiring Detail

1. ALL DIMENSIONS ARE IN INCHES.

Weight is approx. 300 lbs.
Dimensions are
approximate

= Approximate Center of Gravity

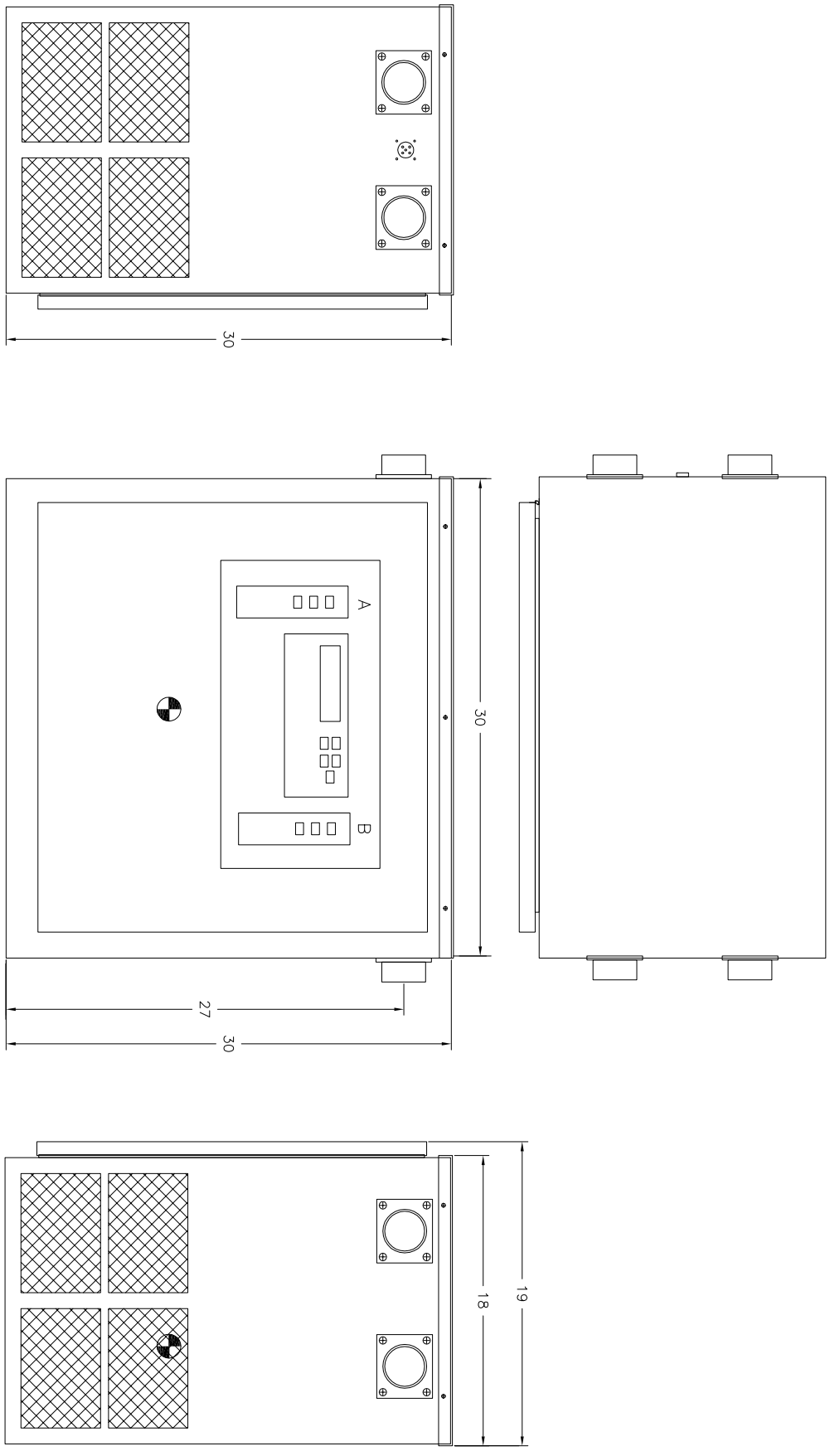


Fig. 4 PowerStation™ Center Of Gravity

B. ALL DIMENSIONS ARE IN INCHES

A. 6 IN. MINIMUM WORKING CLEARANCE FROM BACK WALL.
36 IN. MINIMUM WORKING CLEARANCE FROM FRONT.
6 IN. MINIMUM WORKING CLEARANCE FROM LEFT.
6 IN. MINIMUM WORKING CLEARANCE FROM RIGHT

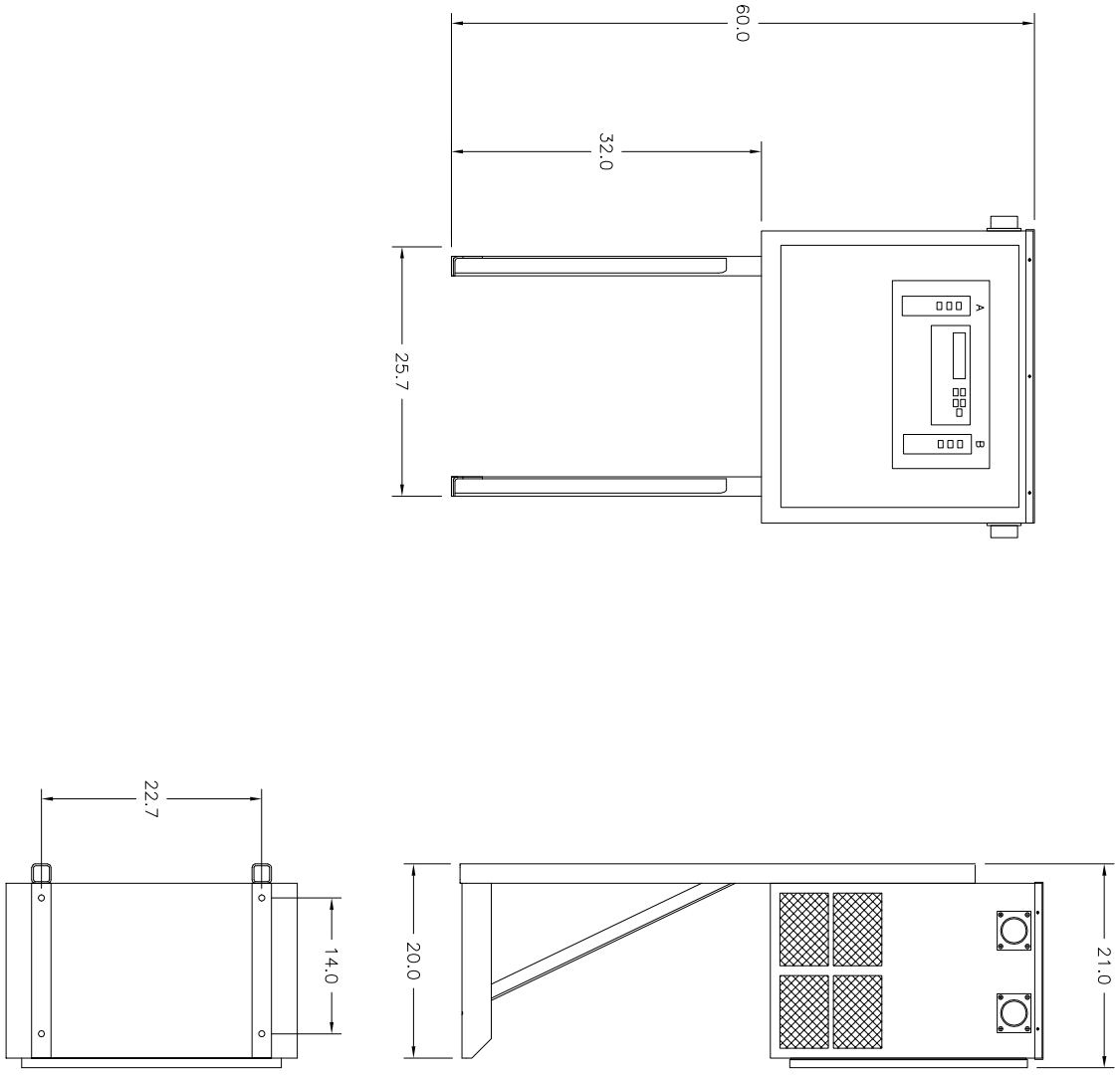
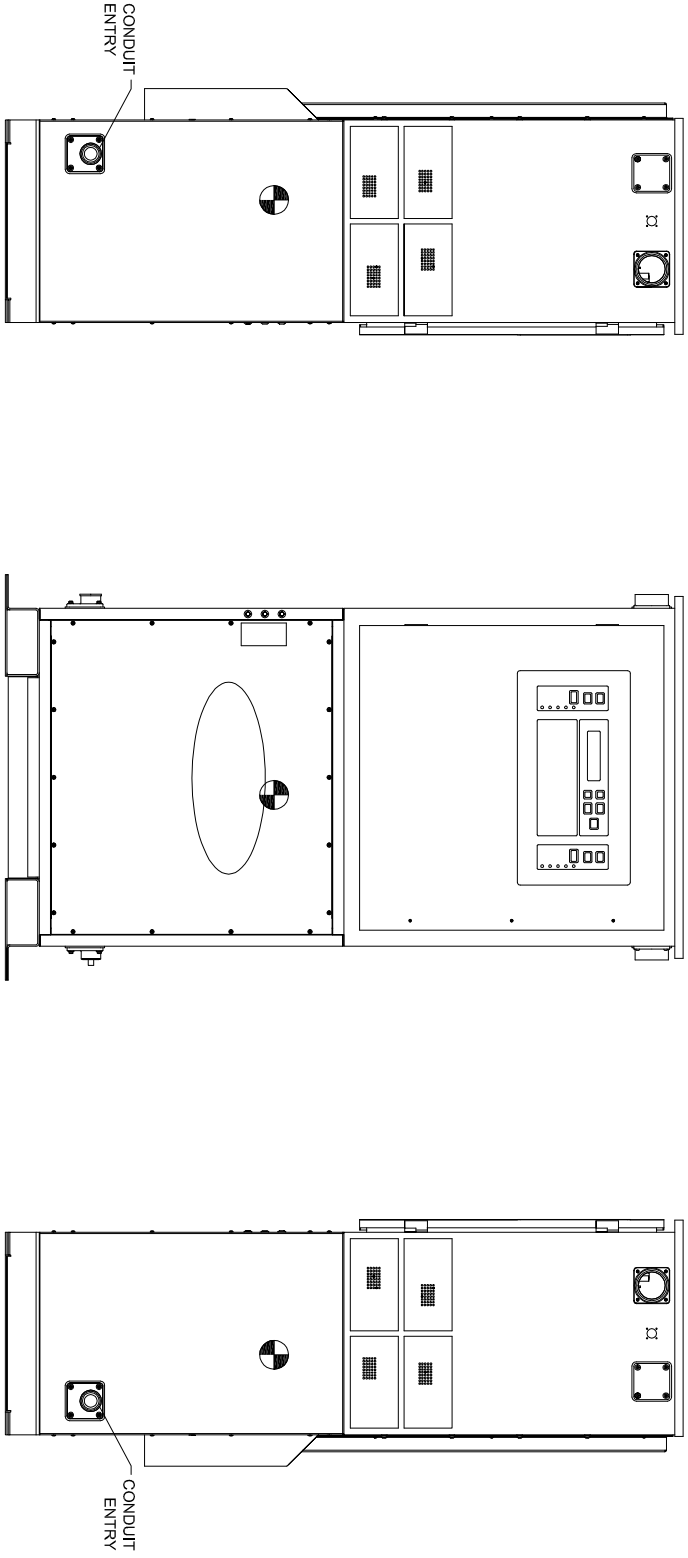


Fig. 5 PowerStation™ Installation

2. ALL DIMENSIONS ARE IN INCHES.



⊕ = Approximate Center of Gravity

Fig. 6 MVS 400™ CENTER OF GRAVITY & CONDUIT CONNECTION LOCATIONS

NOTE: SEE TABLES 3.6 AND 3.7 FOR INSTALLATION DATA

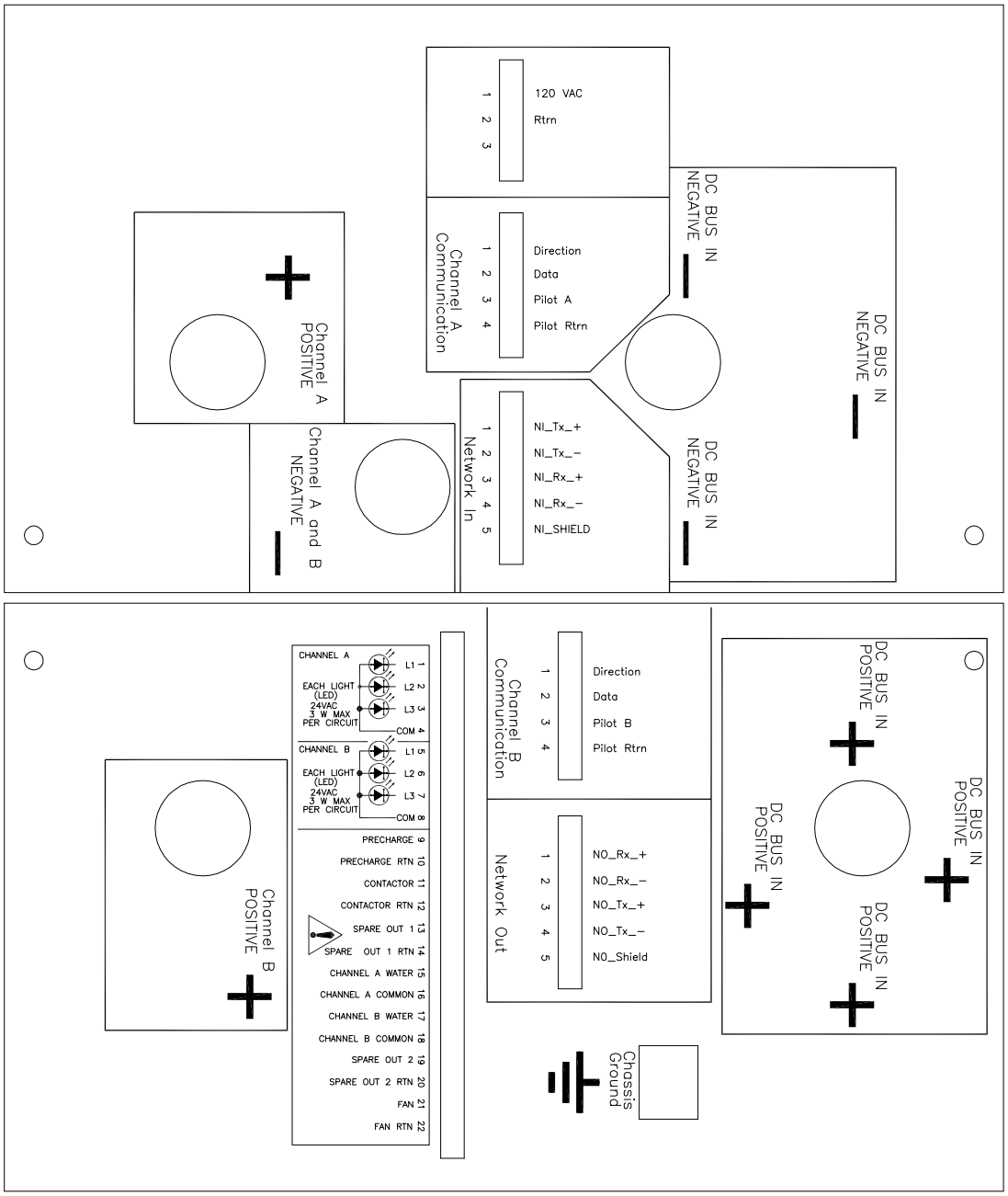
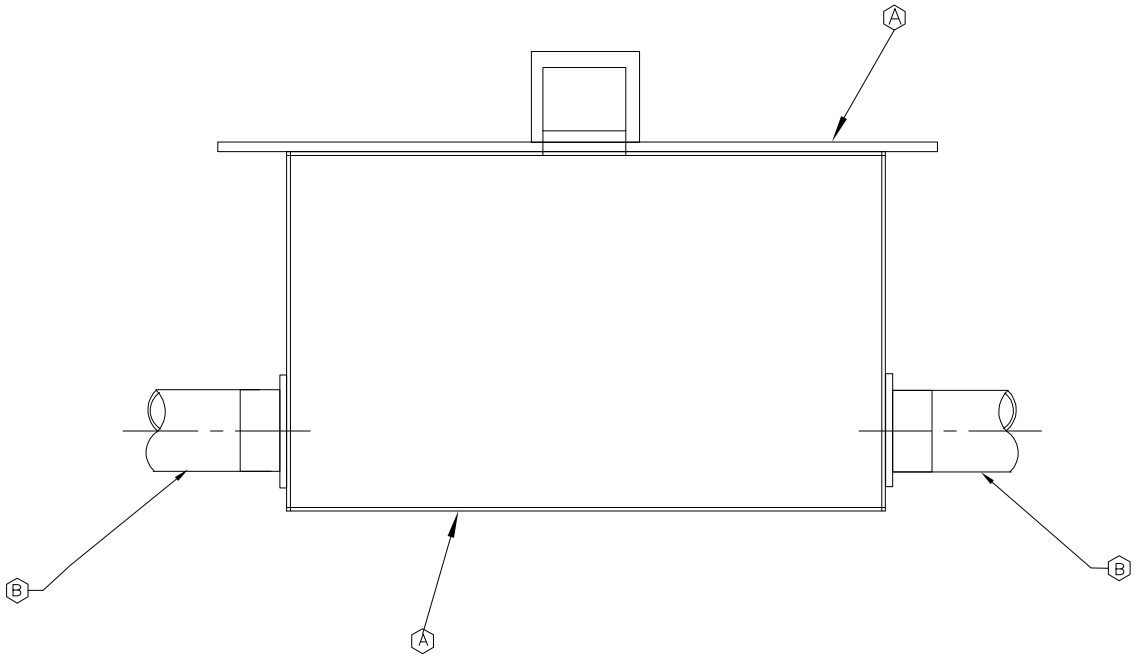
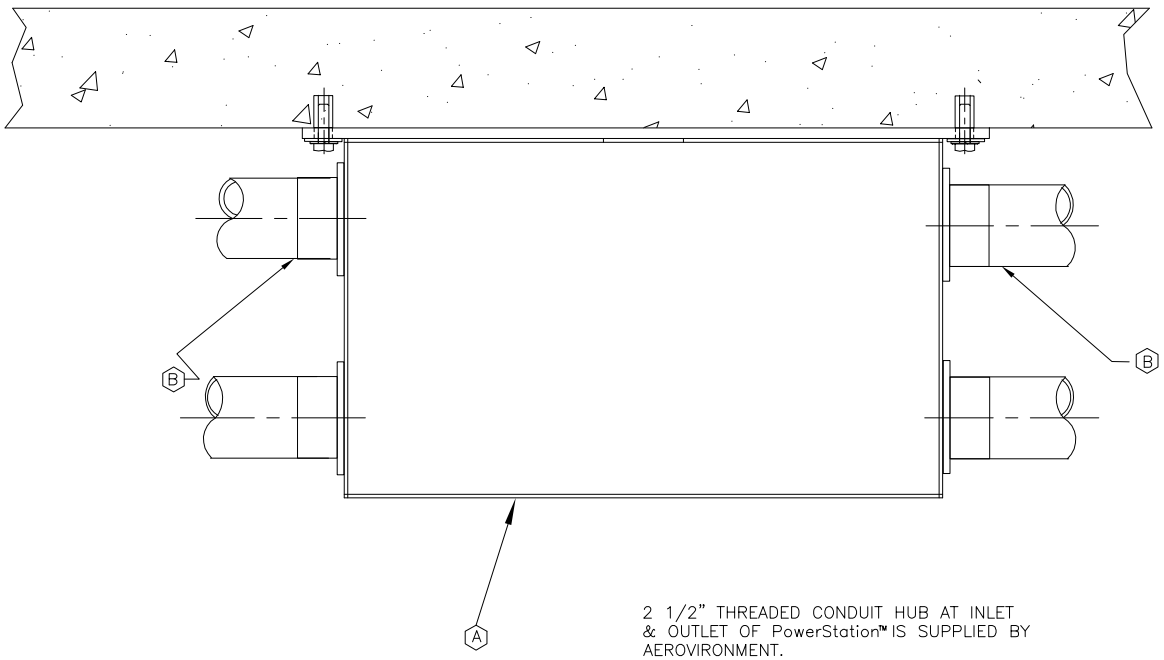


Fig. 7 PowerStation™ Field Wiring Label

TOP VIEW
PEDESTAL MOUNT (SQUARE TUBE)



TOP VIEW
WALL MOUNT



2 1/2" THREADED CONDUIT HUB AT INLET & OUTLET OF PowerStation™ IS SUPPLIED BY AEROVIRONMENT.

(B) OUTPUT CABLE ASSEMBLY and CONDUIT IS PROVIDED BY OTHERS

(A) PowerStation™

Fig. 8 PowerStation™ Installation Connection Wiring

B. ALL DIMENSIONS IN INCHES

A. Power Pole Installation Instructions

1. Measure the locations for each pole.
2. Mount each pole to floor using 4 studs. Install studs into the concrete floor and bolt down pole's base.
3. Screw in first section of pole, followed by the extension piece and then second section of pole.
4. Install cable brackets supplied by AVP and attach charging cables to each pole.

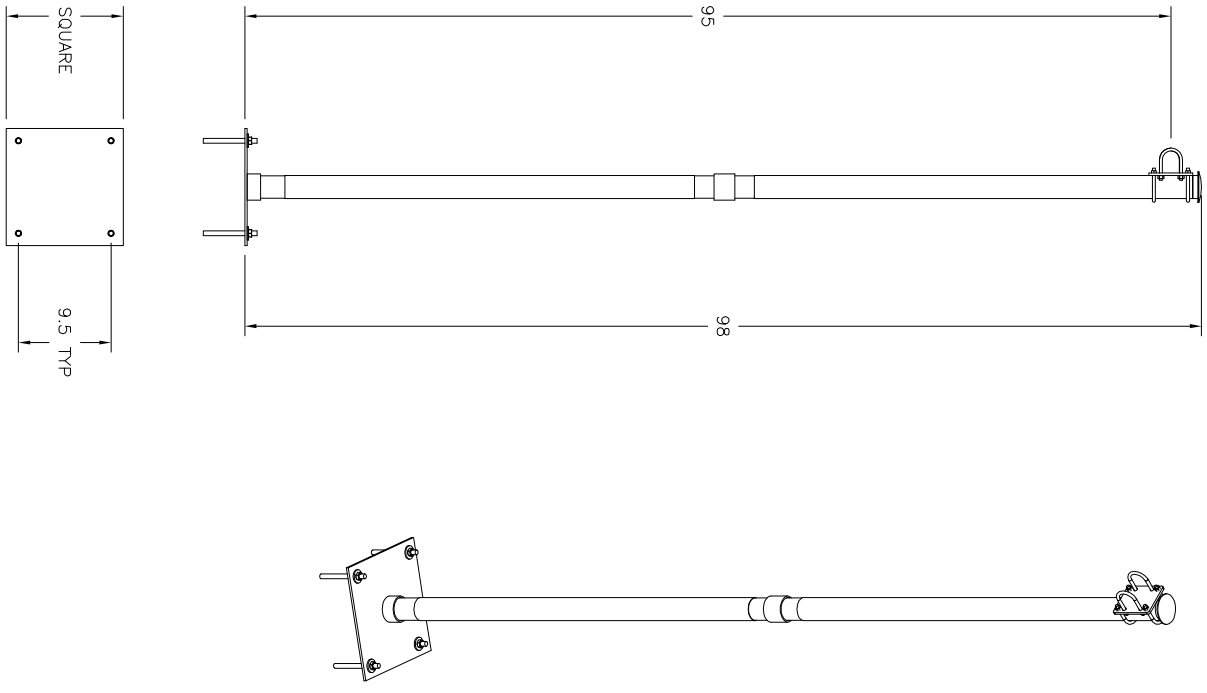


Fig. 9 Power Pole™ Installation

1. ALL DIMENSIONS ARE IN INCHES

① 3/8" HEX HEAD BOLT , SUPPLIED BY OTHERS.
② 1/4" SCREW, SUPPLIED BY AEROVIRONMENT, INC. WITH PowerStation™
③ UNIVERSAL MOUNTING BACK PLATE, SUPPLIED BY AEROVIRONMENT INC WITH PowerStation™
④ WALL, SUPPLIED BY OTHER
⑤ 3/8" THREADED ANCHOR INSERTS SUPPLIED BY OTHER
⑥ PowerStation™ (PHANTOMED FOR CLARITY)

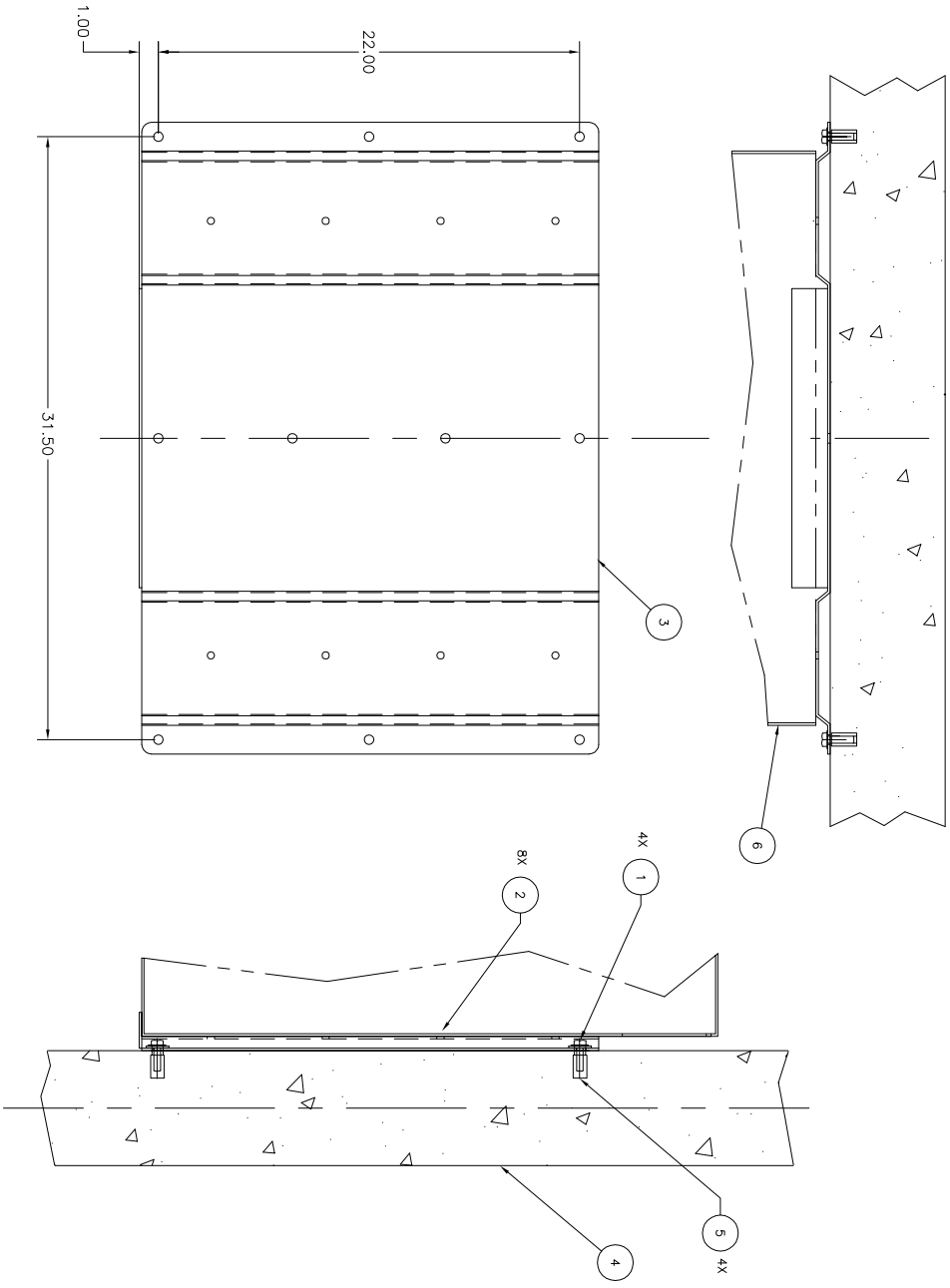
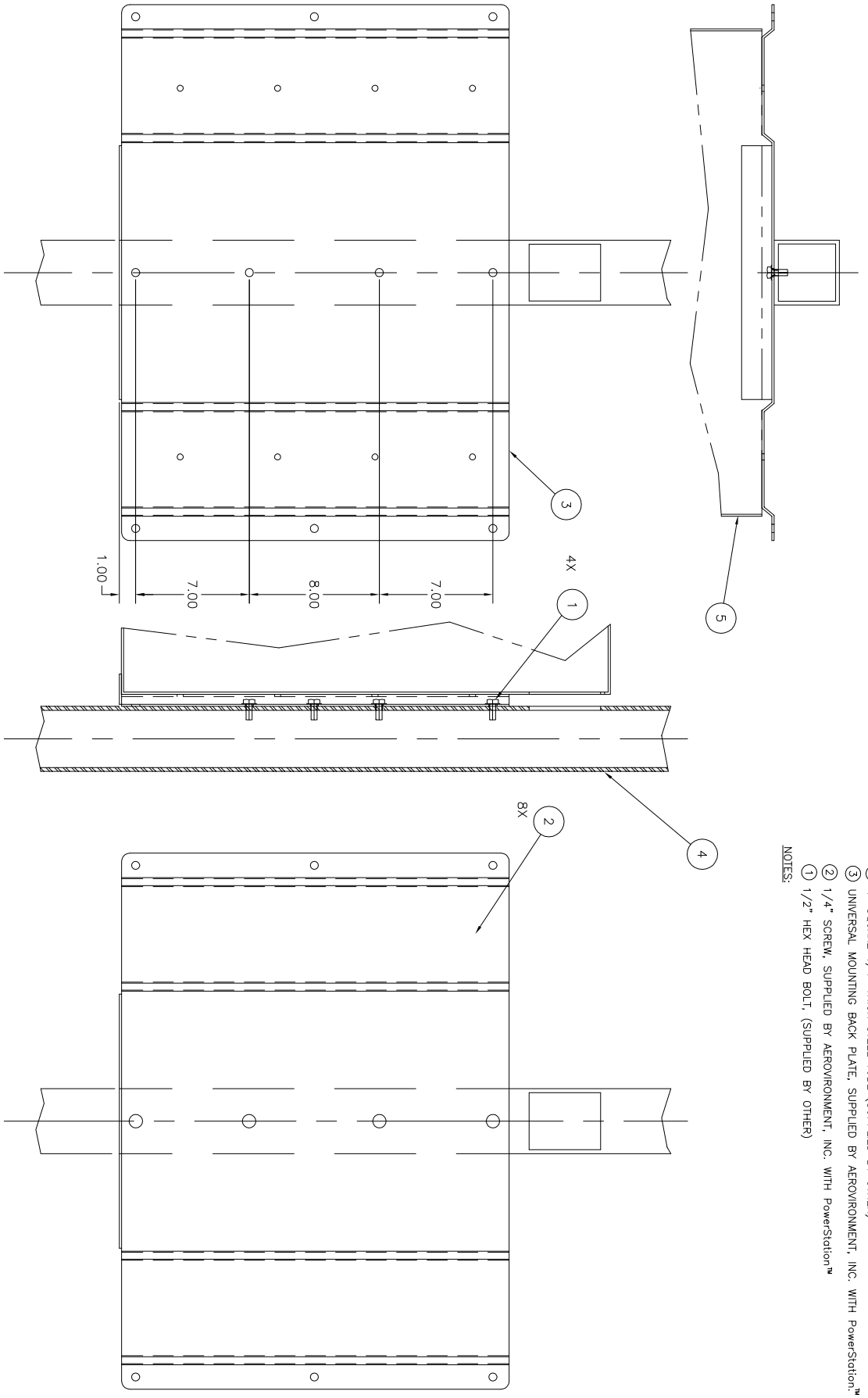


Fig.10 PowerStation™ Wall Mounting Plate

1. ALL DIMENSIONS ARE IN INCHES



NOTES:

⑤ PowerStation™ (PHANTOMED FOR CLARITY)
④ 4" SQUARE 1/4" THICK STEEL TUBE (SUPPLIED BY OTHER)
③ UNIVERSAL MOUNTING BACK PLATE, SUPPLIED BY AEROVIRONMENT, INC. WITH PowerStation.™
② 1/4" SCREW, SUPPLIED BY AEROVIRONMENT, INC. WITH PowerStation™
① 1/2" HEX HEAD BOLT, (SUPPLIED BY OTHER)

Fig 11. PowerStation™ Pole Mounting Plate

A. SEE TABLES 3.6 AND 3.7

B. WHERE POSSIBLE, TIE-WRAP CONTROL CABLES TO POWER CABLES FOR STRAIN RELIEF

SUGGESTED WIRE ROUTING FOR POWER WIRING
WIRE ROUTING AND CABLE CLAMPS FOR COMMUNICATION CABLES

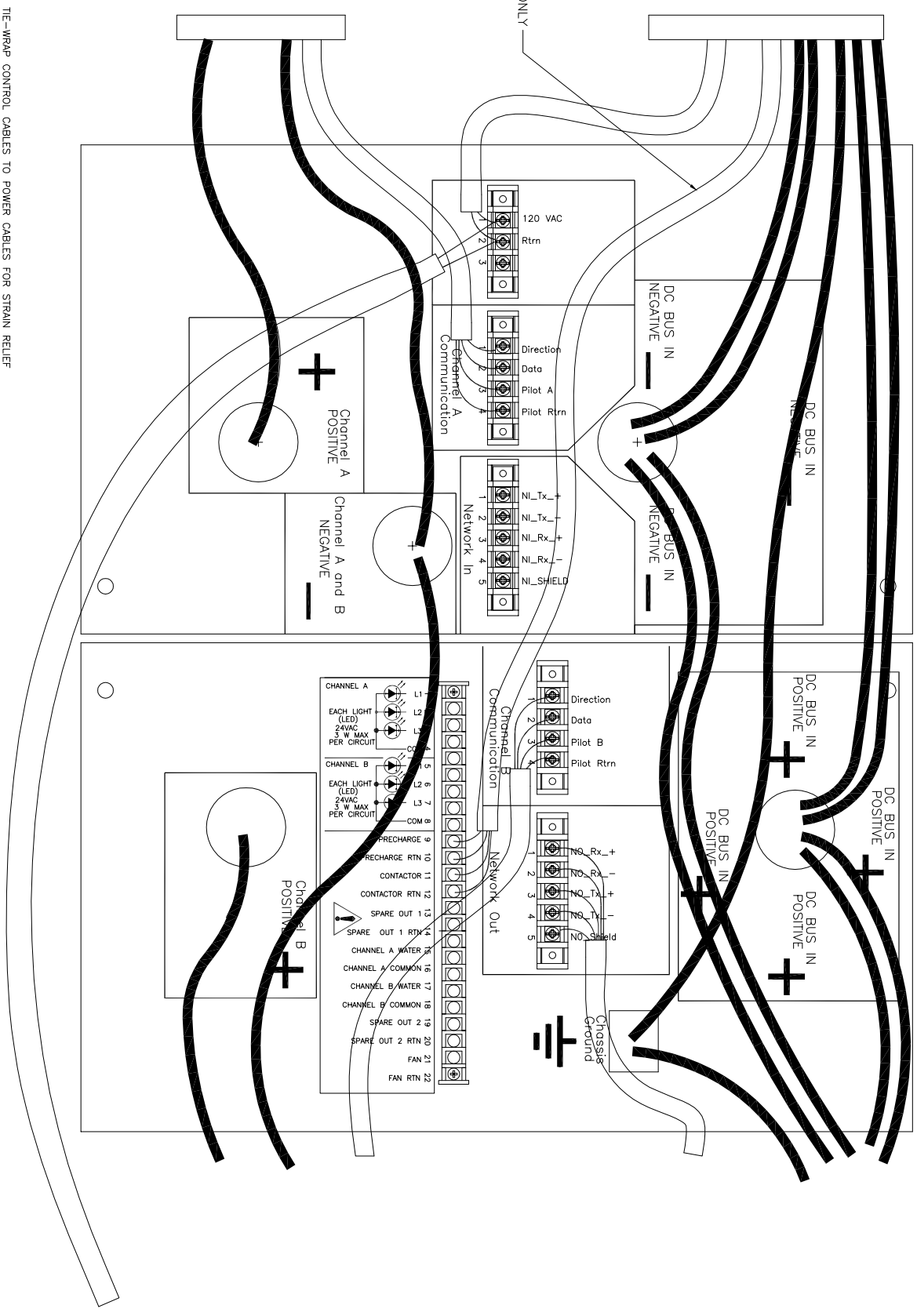


Fig. 12 PowerStation™ Wire routing diagram

MVS 400 - INSTALLATION AND OPERATIONAL CHECKOUT				
MVS	**Slave 1**	**Slave 2**	**Slave 3**	
Serial #	**Serial #**	**Serial #**	**Serial #**	
_ _ _ _ _	_ _ _ _ _	_ _ _ _ _	_ _ _ _ _	
☐				UTILITY CONNECTIONS PROPERLY INSTALLED WITH ALL FASTENERS TIGHTENED TO SPECIFIED TORQUE
☐				ALL DC BUS CONNECTIONS PROPERLY INSTALLED WITH ALL FASTENERS TIGHTENED TO SPECIFIED TORQUE
☐				ALL SLAVE POWERSTATIONS CONNECTED TO MVS PER INSTALLATION MANUAL INSTRUCTIONS
☐	☐	☐	☐	ALL COMMUNICATION AND POWER WIRING IS PROPERLY CONNECTED ON UPPER SHELF
☐	☐	☐	☐	ALL HIGH CURRENT CABLES IN CHARGING PATH ARE SECURELY FASTENED
☐	☐	☐	☐	ALL SCREWS AND WASHERS PROPERLY INSTALLED ON DOOR AND COVER
☐	☐	☐	☐	GASKETS AND SCREWS PROPERLY INSTALLED IN CONDUIT HUBS
☐	☐	☐	☐	SCREWS AND CAP PROPERLY INSTALLED ON SERIAL PORT CONNECTOR
☐	☐	☐	☐	CONDUIT PROPERLY INSTALLED AND SEALED WITH DRIP LOOP, OR EQUIVALENT, TO PREVENT WATER INTRUSION
☐	☐	☐	☐	DRIP LOOP ON PORT “A” AND PORT “B” CHARGE CABLES
☐	☐	☐	☐	UNIT IS SECURELY MOUNTED
☐	☐	☐	☐	PORT “A” CHARGES PROPERLY WHEN CONNECTED TO VEHICLE
☐	☐	☐	☐	PORT “B” CHARGES PROPERLY WHEN CONNECTED TO VEHICLE
☐	☐	☐	☐	FRONT PANEL LED’s WORK PROPERLY
☐	☐	☐	☐	DISPLAY IS FULLY OPERATIONAL
☐	☐	☐	☐	LATEST APPLICATION CODE HAS BEEN LOADED
☐	☐	☐	☐	ALL FRONT PANEL CONTROL BUTTONS ARE FUNCTIONAL
☐	☐	☐	☐	ALL POWERSTATIONS POWER UP AND NETWORK CONFIGURES CORRECTLY WHEN POWER APPLIED TO POWERSERVER

SYSTEM CHECKED BY – NAME / SIGNATURE:	/	**DATE:**	
CUSTOMER / LOCATION:	/	**GATE:**	

PosiCharge™ MVS 400

MAXIMUM EFFICIENCY • LOW INFRASTRUCTURE COST • SIMULTANEOUS CHARGE

FLEXIBLE.
Simultaneously charges all common battery types and voltages

INTELLIGENT.
Instantly recognizes voltage, state of charge, temperature

CUSTOMIZED.
Adapts charge rate according to charge acceptance limit and temperature for safest fast charge

SAFE.
Automatic Start/Stop anti-arcing disconnect

EASY.
Easy to install, easy to use

TURNKEY.
Programmable EQ automatically equalizes when it's convenient for your operation

AFFORDABLE.
One power source charges up to 8 vehicles simultaneously – lowering electrical infrastructure costs significantly

EFFICIENT.
High efficiency IGBT technology

ESSENTIAL.
Easy data download provides critical fleet management information

The PosiCharge™ MVS Multi-Vehicle System:

- *Simultaneously charge up to 8 vehicles at one time*
- *Lower infrastructure cost than most other fast chargers*
- *Doesn't require staggering breaks like many sequential chargers*
- *More likely to adapt seamlessly to your operations than sequential chargers*
- *Highly efficient*

MODEL MVS 400: PowerServer

Power Rating	*40kW*
*Utility Requirements**	*480VAC, 3 Phase*
Full Load Amp Draw	*56A*
Max. Circuit Breaker Rating	*70A*
Power Factor	*.96*
Weight	*915 lbs.*
Dimensions	*60"h x 32.4"w x 21.9"d*

** 600VAC also available*

Model MVS: PowerStation

Max. Output Current (Dual Mode)	*250A*
Max. Output Current (Single Mode)	*500A*
Battery Voltage Range	*24v – 96v*
Power Rating	*60kW*
Communication Port	*RS232*
Weight	*304 lbs.*
Dimensions	*30"h x 30"w x 19"d*

***PosiCharge™** systems eliminate the need for battery changing by keeping trucks running on one battery...**all day**.*

POSICHARGE MVS

PosiCharge™ is an AeroVironment, Inc. Business

825 S. Myrtle Ave., Monrovia, CA 91016
(p) 626.357.9983 x311 (f) 626.357.9729
www.posicharge.com

PosiCharge™ MVS

MAXIMUM EFFICIENCY • LOW INFRASTRUCTURE COST • SIMULTANEOUS CHARGE

FLEXIBLE.
Simultaneously charges all common battery types and voltages

INTELLIGENT.
Instantly recognizes voltage, state of charge, temperature

CUSTOMIZED.
Adapts charge rate according to charge acceptance limit and temperature for safest fast charge

SAFE.
Automatic Start/Stop anti-arcing disconnect

EASY.
Easy to install, easy to use

TURNKEY.
Programmable EQ automatically equalizes when it's convenient for your operation

AFFORDABLE.
One power source charges up to 16 vehicles simultaneously – lowering electrical infrastructure costs significantly

EFFICIENT.
High efficiency IGBT technology

ESSENTIAL.
Easy data download provides critical fleet management information

The PosiCharge™ MVS Multi-Vehicle System:

- *Simultaneously charge up to 16 vehicles at one time*
- *Lower infrastructure cost than most other fast chargers*
- *Doesn't require staggering breaks like many sequential chargers*
- *More likely to adapt seamlessly to your operations than sequential chargers*
- *Highly efficient*

MODEL MVS 800: PowerServer

Power Rating	*80kW*
*Utility Requirements**	*480VAC, 3 Phase*
Full Load Amp Draw	*100A*
Max. Circuit Breaker Rating	*125A*
Power Factor	*.98*
Weight	*1,405 lbs.*
Dimensions	*62"h x 42"w x 27"d*

** 600VAC also available*

Model MVS: PowerStation

Max. Output Current (Dual Mode)	*250A*
Max. Output Current (Single Mode)	*500A*
Battery Voltage Range	*24v – 96v*
Power Rating	*60kW*
Communication Port	*RS232*
Weight	*304 lbs.*
Dimensions	*30"h x 30"w x 19"d*

***PosiCharge™** systems eliminate the need for battery changing by keeping trucks running on one battery…**all day**.*

POSICHARGE MVS

PosiCharge™ is an AeroVironment, Inc. Business

825 S. Myrtle Ave., Monrovia, CA 91016
(p) 626.357.9983 x311 (f) 626.357.9729
www.posicharge.com

MVS SYSTEM
INSTALLATION INSTRUCTION MANUAL

PosiCharge™
AeroVironment®

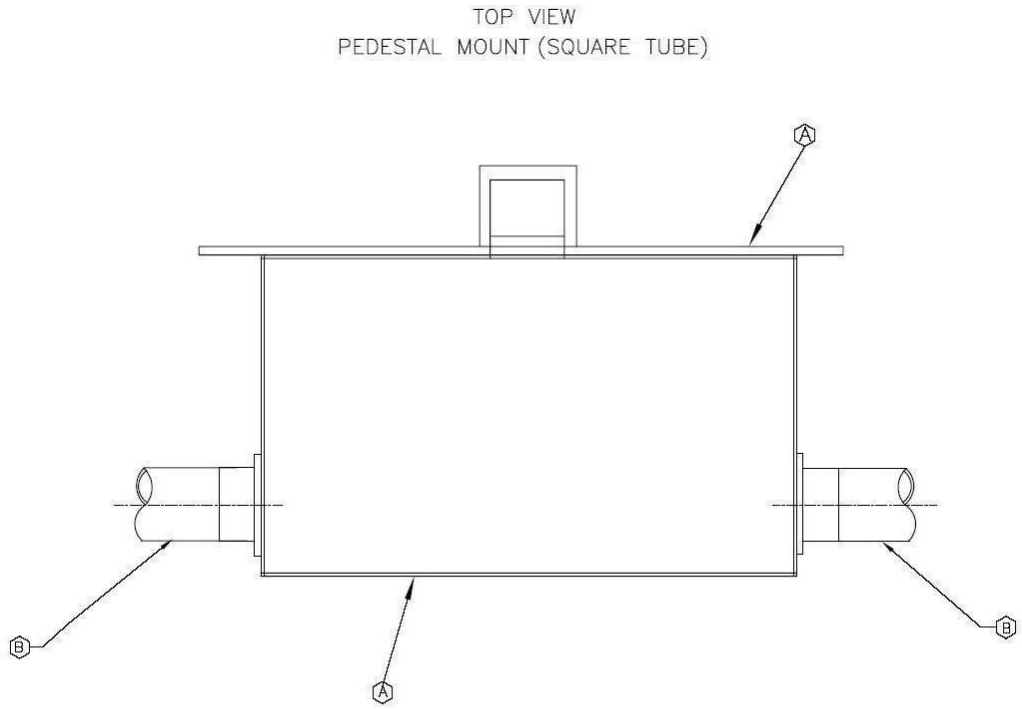
Motive Power Solutions

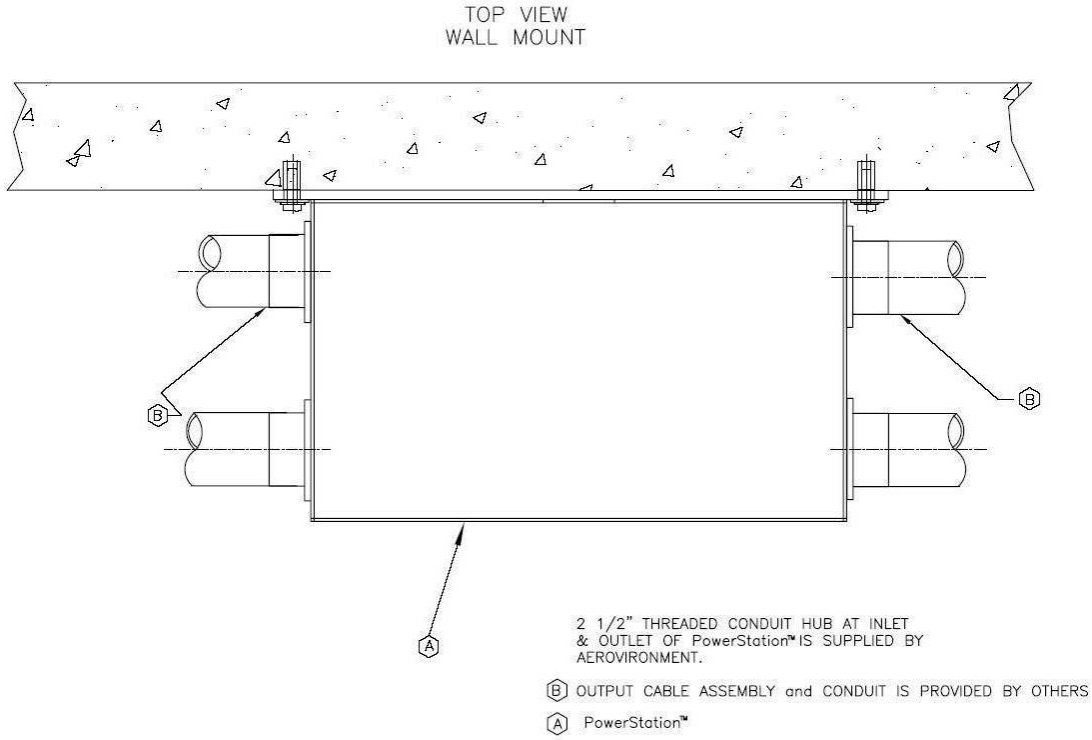
181 W Huntington Dr. Suite 202 – Monrovia, California 91016 – U.S.A.
Telephone (626) 357-9983
www.avinc.com

Configuration Management

ECO	Rev	Change Description	Date
4422	A	New release. Manual, Installation, NGPS PwrSvr	1/23/03
4461	B	Correct drafting error	2/10/03
5331	C	Format change from AutoCAD to MS Word. Various additions	2/25/04
5557	D	Corrected ground wire sizing for power station / server	6/21/04
9234	E	General corrections and addition of the High Voltage PowerStation.	4/20/09

TABLE OF CONTENTS





TABLES

1 SAFETY PRECAUTIONS - READ BEFORE USING

The MVS and PowerStation are designed with the safety of the user as the highest priority. However, installation must comply with all local codes, and the following safety precautions must be read and observed.

1.1 SYMBOL USAGE

Throughout this manual, take special note of the information marked with the following symbols:

DANGER	Contains information about safety practices necessary to prevent personal injury or death.

WARNING	Contains information about safety practices necessary to prevent fire or equipment overheating.

CAUTION	Contains information to prevent shock hazard or possible damage to the equipment during installation and service.

NOTE: Offers helpful information for installation or usage, but does not contain personnel or equipment safety related information.

CAUTION BEFORE YOU BEGIN	• Read all instructions and cautionary markings on the Industrial PosiCharge Assembly. • Make sure you also read the IMPORTANT SAFETY INSTRUCTIONS below. • Be sure to leave these instructions with the installed unit for future reference. • Only qualified personnel should install, use or service this charger. • Read and understand these Manufacturer's instructions and your employer's safety practices manual.

DANGER	ELECTRIC SHOCK CAN KILL: • Touching live electrical parts can cause fatal shocks or severe burns. • The battery terminals are always electrically live, and the output circuit is live whenever the battery is connected or being charged. • The input power circuitry and internal circuits are live whenever input power is on. • An incorrectly installed or improperly grounded charger is a hazard.

- The unit must be grounded properly with a grounding conductor of size equal to or larger than that recommended by local electrical codes.

- Do not touch uninsulated battery terminals.
- Only qualified service personnel may remove the cover on the MVS PowerServer or PowerStation cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel. Opening the system or attempted installation or repair by other than qualified service personnel voids the warranty.
- Disconnect battery charger from input power and battery connections before installing or servicing the MVS PowerServer. Lockout/tagout input power according to OSHA 29 CFR 1910.147.
- Do not expose to rain or perform installation/service/repair work when in standing water.
- Before disconnecting the battery, turn off the charger by pressing the stop button on the front panel of all PowerStations. PowerStations are designed to automatically stop a charge event to minimize arcing or burning of the charger connections in the event of a hot disconnect.

⚠ WARNING	OSHA INSTRUCTION STD 1-11.4 OCTOBER 30, 1978 4. Action "Battery charging" areas where power industrial truck batteries are charged only—no maintenance is performed, batteries are not removed from the trucks and no electrolyte is present in the area—are not subject to the requirement of 29 CFR 1910.178 (g) (2). The charging areas shall be in compliance with 29 CFR 1910.178 (g) (1), (8), (9), (10), (11) and (12). Personal protective equipment shall be used when and where required.

⚠ WARNING	IMPROPER INSTALLATION CAN CAUSE FIRE

- Do not install or place unit on, over or near combustible surfaces.
- Do not install unit near flammables.
- Do not block air intake or exhaust.
- Do not block airflow to the unit.
- Replace blown fuses only with same type and rating of fuse.
- Do not overload building wiring - be sure utility power service is properly sized, rated and protected to handle this unit. Use only on circuits provided with the minimum wire size specified in the installation section.
- Protective bollards should be installed where charging equipment location is subject to damage from vehicle activity.
- Do not install the charger if there is physical damage to the charger, coupler, or cable.
- Do not subject the cable or coupler to damage or stress. Do not step on the coupler cable.
- Do not hang from the coupler cable.

- Do not disassemble the MVS or PowerStation.
- Only use metal conduit above ground.
- Follow the National Electrical Code (NEC) and local codes. NEC and local codes take precedence. If any instructions in this manual conflict with NEC or local codes, contact AeroVironment Inc. for further information.

2 GENERAL INFORMATION

2.1 SCOPE

This manual is intended to provide an authorized, fully trained installation technician with the information and guidance necessary to safely install the MVS ™ PowerServer™ and PowerStation™ equipment.

All non-standard tools are listed in Table 2.1. If parts or tools are needed in addition to those listed in this manual to perform service, this service is outside the scope of this manual and AeroVironment should be contacted directly for further assistance.

Training may be scheduled by contacting Customer Service at AeroVironment at:

(868) 767-4242

Fax: (626) 357-9729

2.2 List of AeroVironment-Provided Equipment

Equipment Description	Quantity	Part Number	Comments
PowerServer - NGPS	1	08100/ 08700	
PowerStations	1-8	06900/ 11350	PowerStation/ High Voltage PowerStation
PowerStation Stands	0-8	08628	Optional
Cable Management Pole Assy	0-16	07233	Optional

2.3 Non-Standard Tools

Table 2.1 – Required Non-Standard Tools

No.	Equipment Description	Suggested Supplier	Part Number
A.	Multimeter	Fluke	8060A TRMS
B.	Bleed down resistor (300Ω, 10W) with alligator clips	AeroVironment, Inc.	
C.	Hex wrench set, SAE, 1/8” to 3/8”	---	---
D.	PowerStation Diagnostic Cable	AeroVironment, Inc.	06969-xxx

2.4 Required Literature

The following documents are required reference material for this installation procedure. Installation technicians must read and understand these documents before proceeding with installation process.

Table 2.2 – Required Reference Literature

AeroVironment Document #	Title
08628-76	PowerStation Stand Installation Guide
07265-03	Operation and Maintenance Manual, MVS Fast Charging System

2.5 MVS SYSTEM OVERVIEW

The MVS PowerServer, also known as the Next Generation Power Server (NGPS), is a simple, robust rectifier-based power supply which connects directly to the electric utility grid. It provides required DC power for up to eight PowerStations, the independent charging stations used in the PosiCharge MVS Fast Charging System.

2.6 ESD Precautions

Electronic circuits are sensitive to damage from electrostatic Discharge. Persons servicing this equipment should be trained in proper techniques for avoiding ESD damage to electronic circuits. As a minimum, when handling circuit boards, wear an appropriate ESD wrist strap connected to the equipment chassis.

3 Installation Instructions

Only authorized installers or repair persons are authorized to perform the installation, maintenance, and repair of the MVS PowerServer and PowerStation.

For geographic locations where summer ambient temperatures consistently exceed 110 degrees Fahrenheit, it is recommended that this product be installed in an area shaded from direct sunlight. This will minimize any power de-rating that may occur during operation at extremely high temperatures.

3.1 Equipment Access

Be sure to use the proper size driver bits when removing or installing screws to avoid stripping the heads. A driver with a clutch setting just sufficient to drive the screws should be used to install them, this will avoid stripping the threads or breaking the threaded inserts. Screws should be started slowly after aligning the holes to avoid cross threading.

3.2 Conduit Connections

- Conduit size for all connections is 2-1/2".
- 2-1/2" threaded hubs are provided.
- See Figure 6 for acceptable conduit entry locations

3.3 PowerStation Stand Installation

- Follow instructions in AV document 08628-76, PowerStation Stand Installation Guide

3.4 Cable Management System Installation

- Follow instructions per Figure 9.
- Note that concrete anchors are provided with installation kit.

3.5 Wiring

3.5.1 General Guidelines

- Check utility configuration tag on PowerServer to make sure that rated input voltage matches local utility voltage. See Figure 2 for details.
- See Table 3.3, Table 3.4, Table 3.5, Table 3.6 and Table 3.7 for Input/Output parameters.
- See Figure 3 for PowerServer Input/Output wiring. See Figure 12 for suggested PowerStation wire routing.
- Use only copper conductors and lugs for system wiring.
- External wiring and lugs are not provided.

3.5.2 Ground Wire

- Green or green with a yellow stripe and attached to the compression lug provided.

3.5.3 Output Wire

- See Table 3.3, Table 3.4, Table 3.5, Table 3.6 and Table 3.7 for wiring size (AWG) and additional information.
- Use THHN or similar type, 600V, 90° C, suitable for conduit use.
- Use copper conductors only.

3.5.4 Chassis Ground

- See Table 3.3, Table 3.4, Table 3.5, Table 3.6 and Table 3.7 for wiring size (AWG) and additional information.

- Use THHN or similar type, 600V, 90° C, suitable for conduit use.
- Use copper conductors only.
- Minimum ground wire size is listed. Refer to local electrical codes for reference.

3.5.5 120 VAC Wire

- 120 VAC is from an isolated supply, limited to 10 amps, and is used for internal loads only. These wires are connected to a terminal block that can accept solid wire.
- This wire must be AWG 14 with a temperature rating of 75-90° C, use THHN or similar type, 600V, suitable for conduit use.
- See Table 3.5 for additional information.

3.6 Grounding

- MVS must be connected to an equipment-grounding conductor routed with the circuit conductors. Connections must comply with all local codes and ordinances.
- The MVS must be grounded in accordance with the Facilities Utility grounding method.
- See Table 3.3, Table 3.4, Table 3.5, Table 3.6 and Table 3.7 for minimum ground wire size.
- The PowerStations are grounded by using the output-grounding stud in the MVS PowerServer .
- See Figure 3 for illustration of grounding connections.
- All other PowerStations are grounded via the first station and then the next PowerStation using the grounding stud provided in the wiring compartment in each PowerStation.

3.7 Communications and Control Cables

The control cables that run from the PowerServer to the master PowerStation and the communication cables from each subsequent PowerStation to the next PowerStation must meet the following requirements:

A. See Table 3.6 for additional information.

B. The control cables that run from the PowerServer to the master PowerStation and the communication cables between adjacent PowerStations are limited to a length of 150' each.

C. Cable construction shall be suitable to be run in conduit.

D. Communications cables shall be constructed of 2 pairs of twisted, shielded wires. A cable comprising two twisted pairs with a single overbraid shield is also acceptable. Cable shields shall be terminated together and connected and routed per Figure 1 and Figure 12.

E. Control cables shall be constructed of 2 pairs of twisted wires. No shielding is required.

F. Conductor wire size shall be no less that 18 AWG with a minimum voltage rating of 300 volts and a minimum temperature rating of 75º C.

G. The recommended communication cable is ANIXTER wire PN: 2L-1802 POS or Alpha wire PN: 45132.

H. Communication cable wire colors are not standardized and are subject to change.

I. Wires, including shield terminations, shall be lugged using an insulated ring lug with a No. 6 hole.

3.8 Hardware

Manufacturer does not supply all external mounting hardware. User-supplied hardware may be needed to complete the installation.

3.9 Specifications

Table 3.1 – Physical Characteristics of MVS Equipment

Component	Height	Width	Depth	Weight
PowerServer	62.0"	42.0"	27.0"	1395 lbs
PowerStation	30.0"	30.0"	19.0"	304 lbs
PowerStation on Stand	60.0"	30.0"	21.0"	363 lbs

Table 3.2 – Clearance Requirements for MVS Equipment

Component	Front	Back	Left	Right
PowerServer	36"	3"	0"	6"
PowerStation	36"	1"	6"	6"
PowerStation on PowerStation Stand	36"	6"	6"	6"

Table 3.3 – Utility Characteristics for MVS PowerServer

Configuration	80 kW		60 kW	
Input Voltage	480	600	480	600
Input AC Current at rated load (Amps)	100	80	80	60
Input Frequency (Hz)	60	60	60	60
Number of input Phases (Excluding Ground)	3	3	3	3
Maximum Circuit Breaker Rating (Amps)	125	100	100	80
Disconnect Switch Rating (Volts)	600	600	600	600
Minimum Inrush Current Capacity (Amps)	1250	1250	1250	1250
Minimum Input Conductor Size (AWG)	1	3	3	3
Input Ground Wire Stud Size	0.25”	0.25”	0.25”	0.25”
Minimum Ground Wire Terminal Torque (in-lb)	65	65	65	65
Minimum Grounding Conductor Size (AWG)	6	6	6	6

Reference National Electrical Code. ANSI/NFPA 70.1999

With internal disconnect option, Input AWG is 480VAC: 1/0 AWG, 600VAC: 1 AWG

Table 3.4 – Output Characteristics for MVS 800 PowerServer

Configuration	80 kW	60 kW
Output DC Voltage (Nominal , Full Load) (Volts)	150	150
Output DC Current at Rated Output (Amps)	533	400
Output Power (kW)	80	60
Minimum Output Wire Size (DC BUS +, AWG)	2 x 250 MCM	2 x 4/0 AWG
Minimum Output Wire Size (DC BUS -, AWG)	2 x 250 MCM	2 x 4/0 AWG
Minimum Output Wire Size (Ground, AWG)	6	6
Minimum Ground Wire Terminal Torque (in-lb)	228	228

Reference National Electrical Code. ANSI/NFPA 70.1999

Table 3.5 – Auxiliary AC Output Characteristics for MVS PowerServer

Output Voltage (VAC)	120
Output Current (Amps)	10
Minimum Conductor Size (AWG)	14
Terminal Screw Size	#6
Minimum Wiring Terminal Torque (in-lb)	12

Reference National Electrical Code. ANSI/NFPA 70.1999

Table 3.6 – Communication and Control Cable Specifications

Assembly	Connects	Wire Size	Description
Communications Cables	PowerStation to PowerStation	18 AWG	Each cable contains 2 pairs of twisted, shielded (or with overbraid) wires
Control Cables	PowerServer to master PowerStation	18 AWG	Each cable contains 2 pairs of twisted, wires. No shielding required

Table 3.7 – Input and Output Power Characteristics for PowerStation

Parameter	Value
Input Voltage	150VDC
Input Current, Amperes Maximum at Rated Output	400 A
DC+ and DC- BUS wire size: see Table 3.4, DC BUS+ and DC BUS-	Table 3.4
Input / Output Wiring Stud Size	1/2"
Battery Charger Output Voltage Min. and Max Per Channel	0-120VDC
PowerStation, 06900	
Battery Charger Output Current Min. and Max, 250A mode	0-250A
Minimum Output Wire Size in AWG, Pos. and Neg., 250A mode, AWG	2/0
Battery Charger Output Current Min. and Max, 500A mode	0-500A
Minimum Output Wire Size in AWG, Pos. and Neg., 500A mode, AWG	4/0
HV PowerStation, 11350	
Battery Charger Output Current Min. and Max. all modes	0-200A
Minimum Output Wire Size in AWG, Pos. and Neg., AWG	2/0
Minimum Input / Output Wiring Terminal Torque	350 in-lb
Minimum Input / Output Grounding Conductor Size in AWG	6
Minimum Grounding Terminal Torque	200 in-lb

Reference National Electrical Code. ANSI/NFPA 70.1999

3.10 Initial Startup

Please see the Operation and Maintenance Manual, AV document #08700-03, for initial startup instructions.

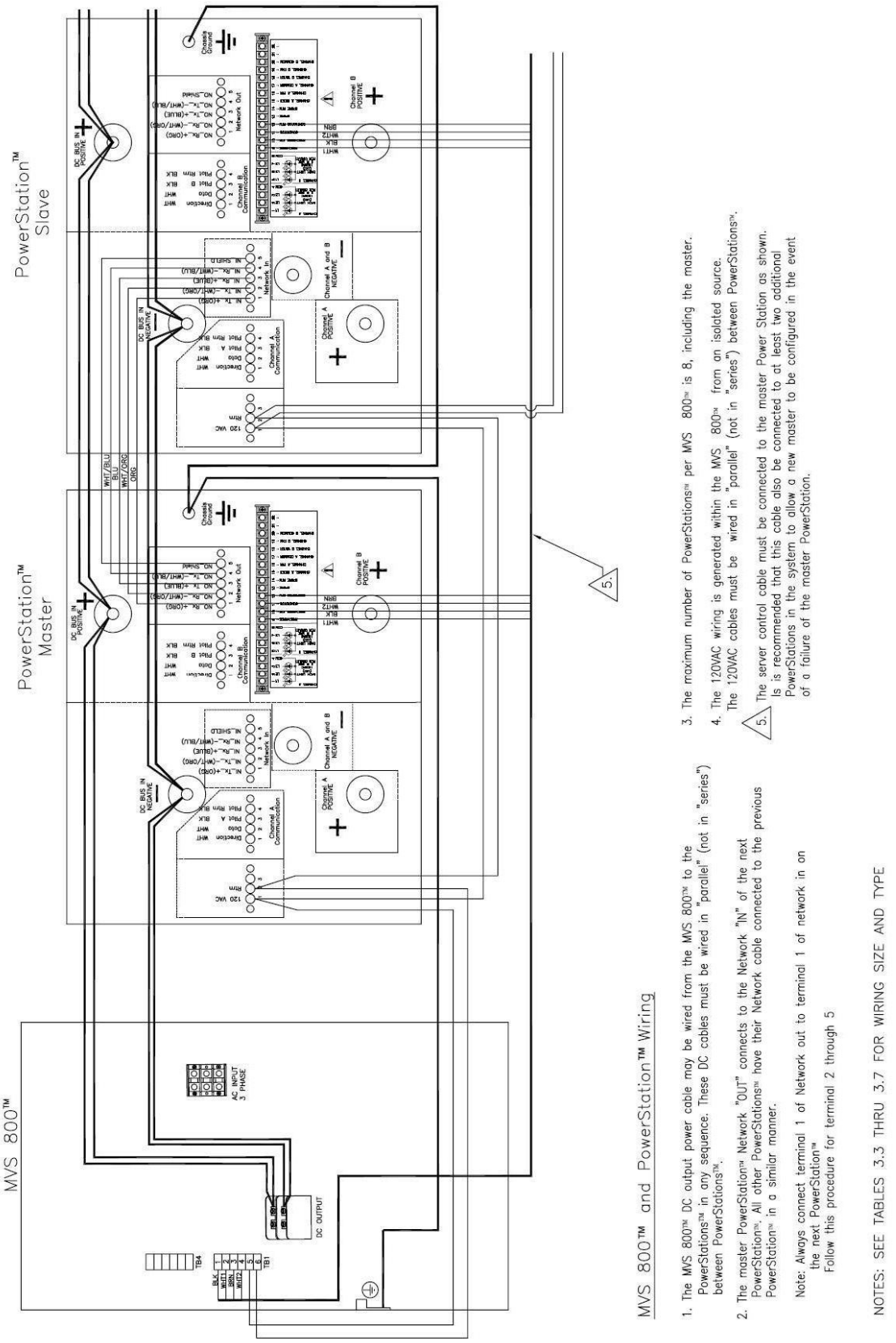


Figure 1. MVS Wiring Diagram

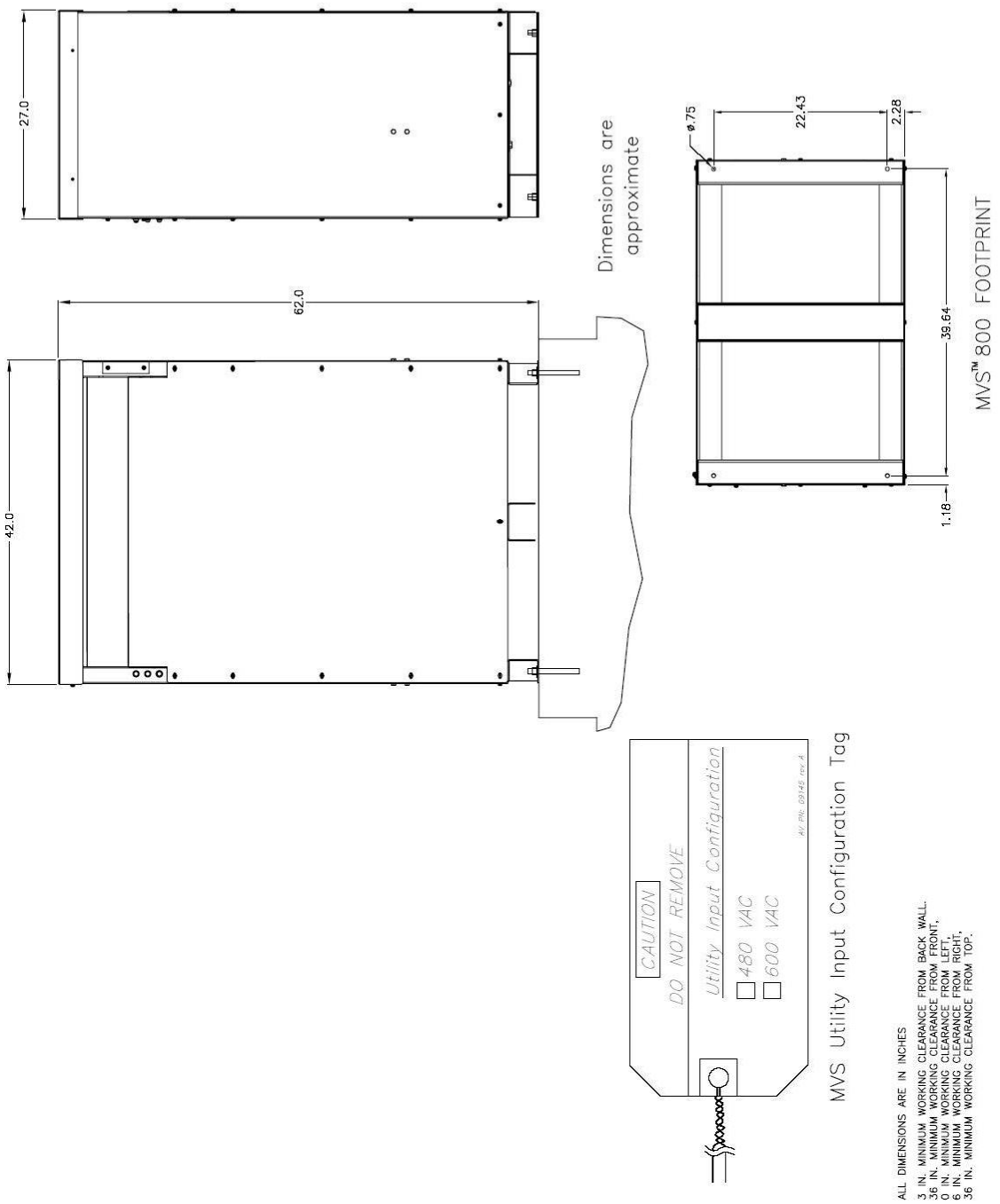


Figure 2. MVS PowerServer Installation

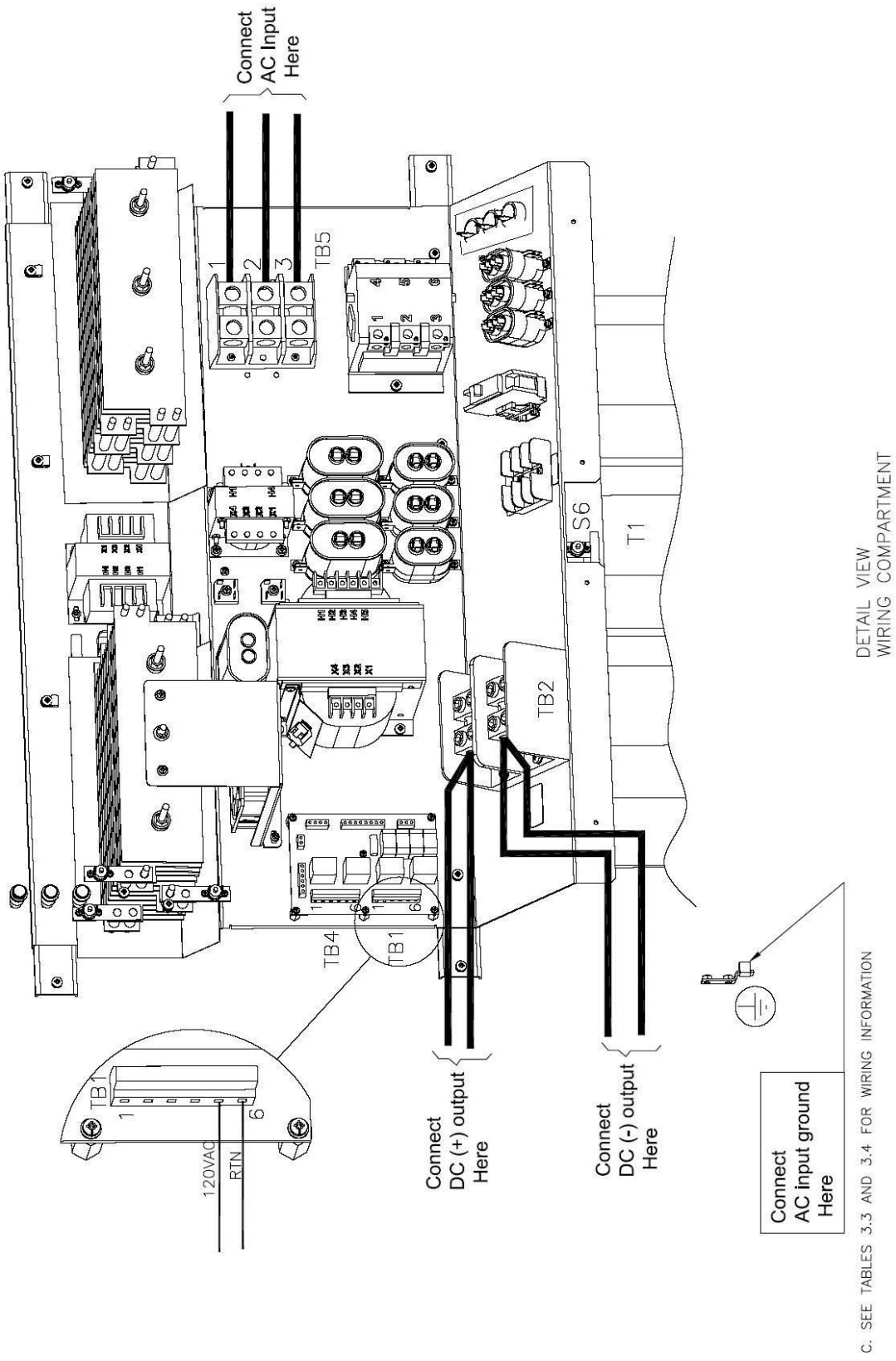


Figure 3. MVS PowerServer Wiring Detail

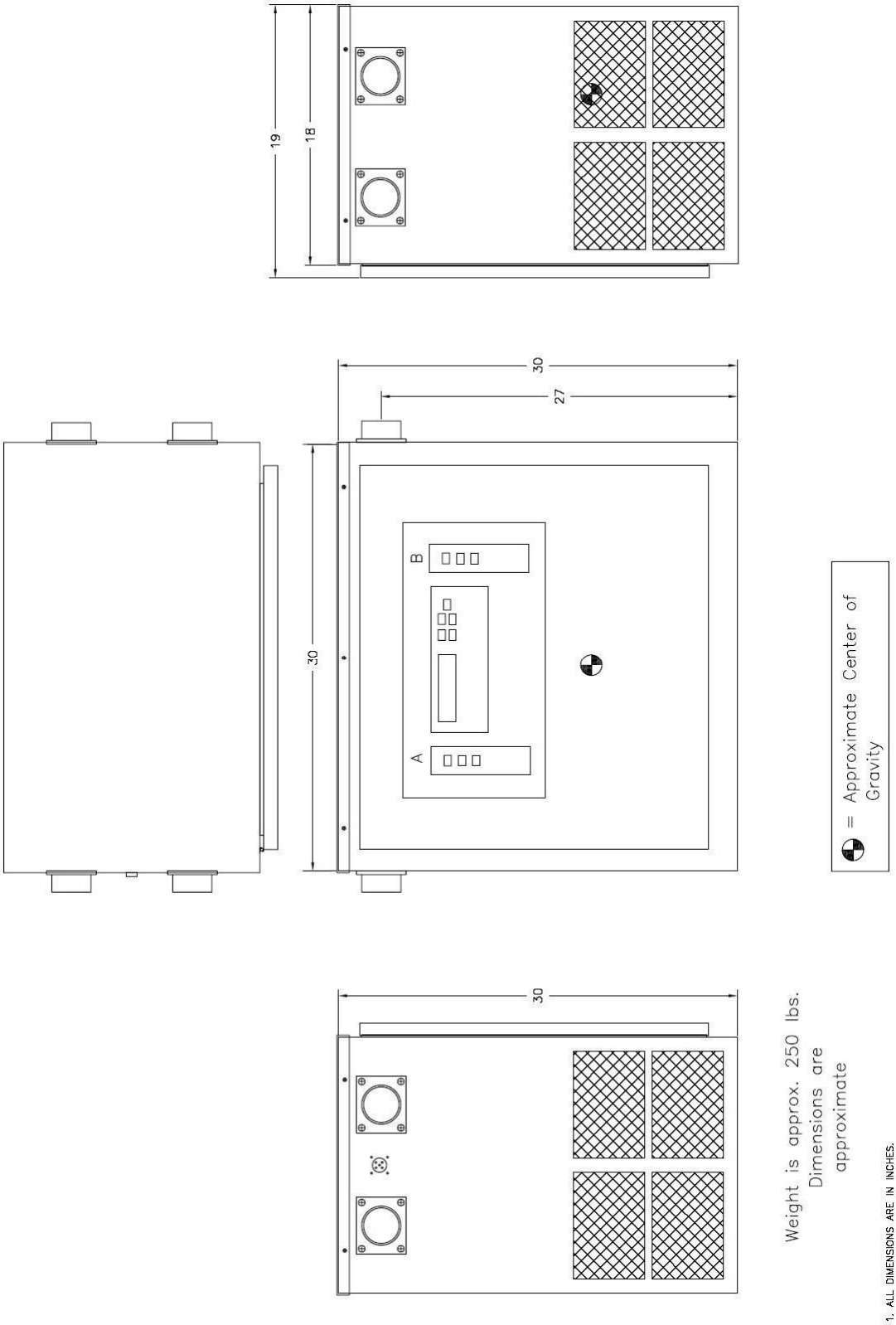


Figure 4. PowerStation Center of Gravity

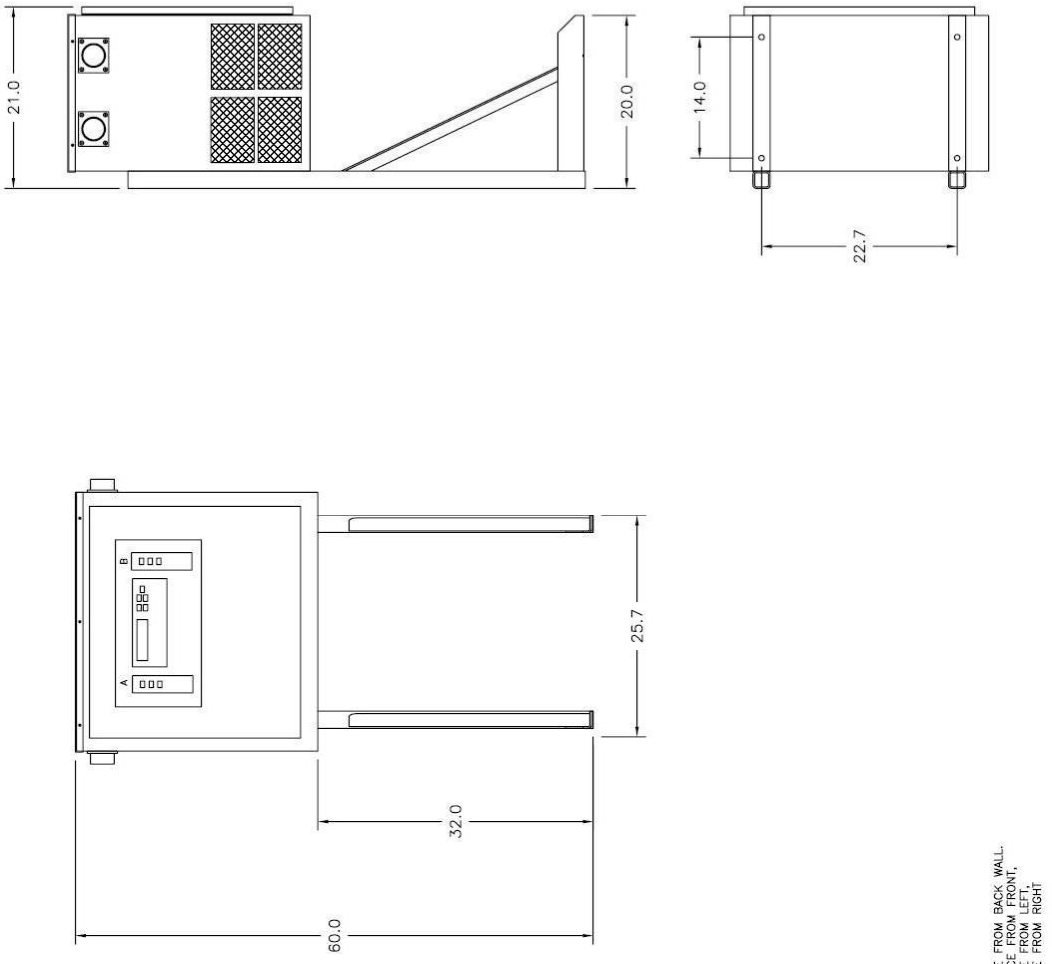


Figure 5. PowerStation Installation

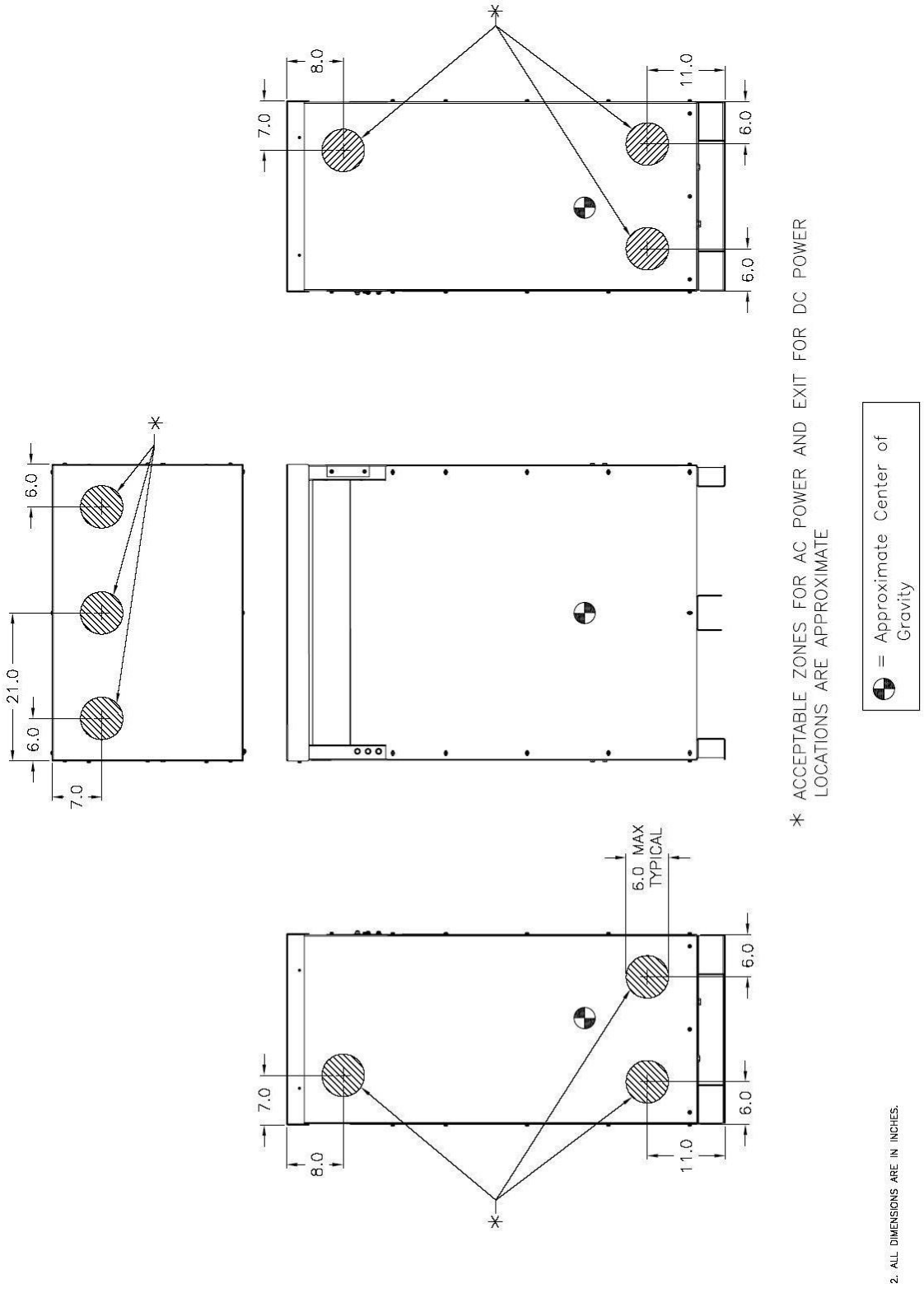
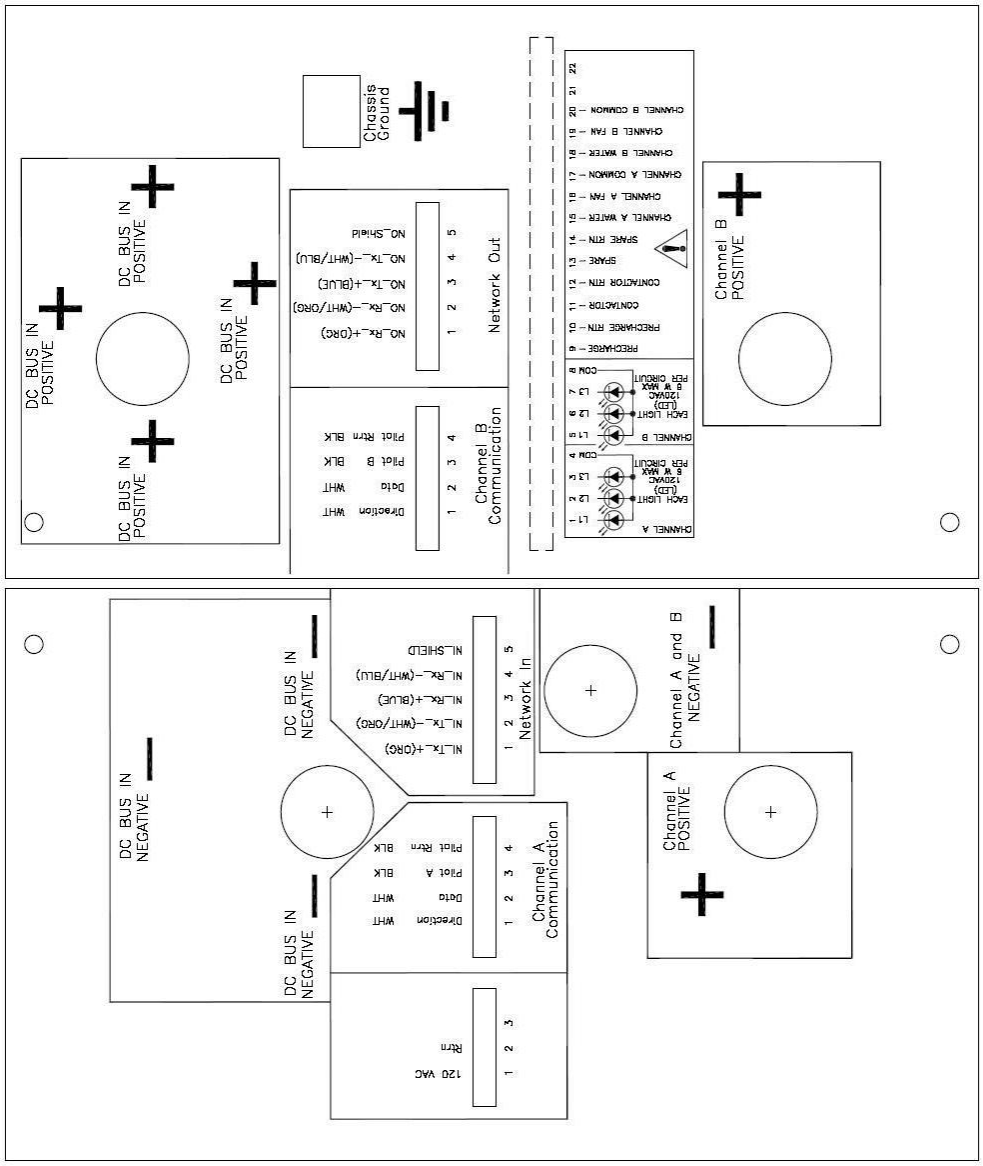
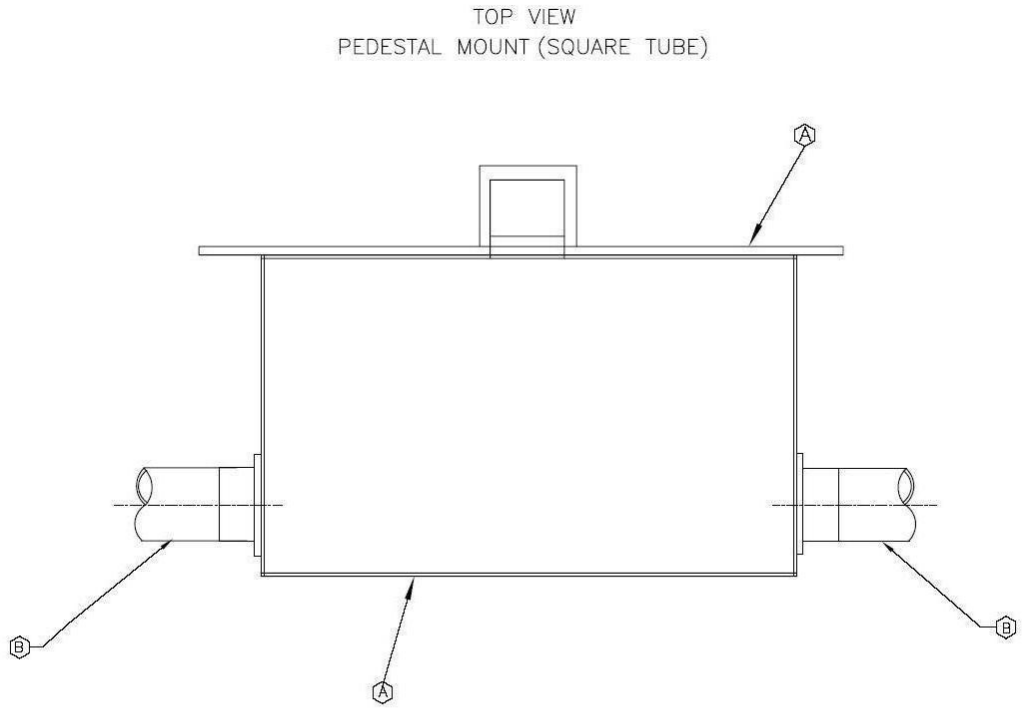


Figure 6. MVS PowerServer Power Locations and Center of Gravity



NOTE: SEE TABLES 3.6 AND 3.7 FOR INSTALLATION DATA

Figure 7. PowerStation Field Label



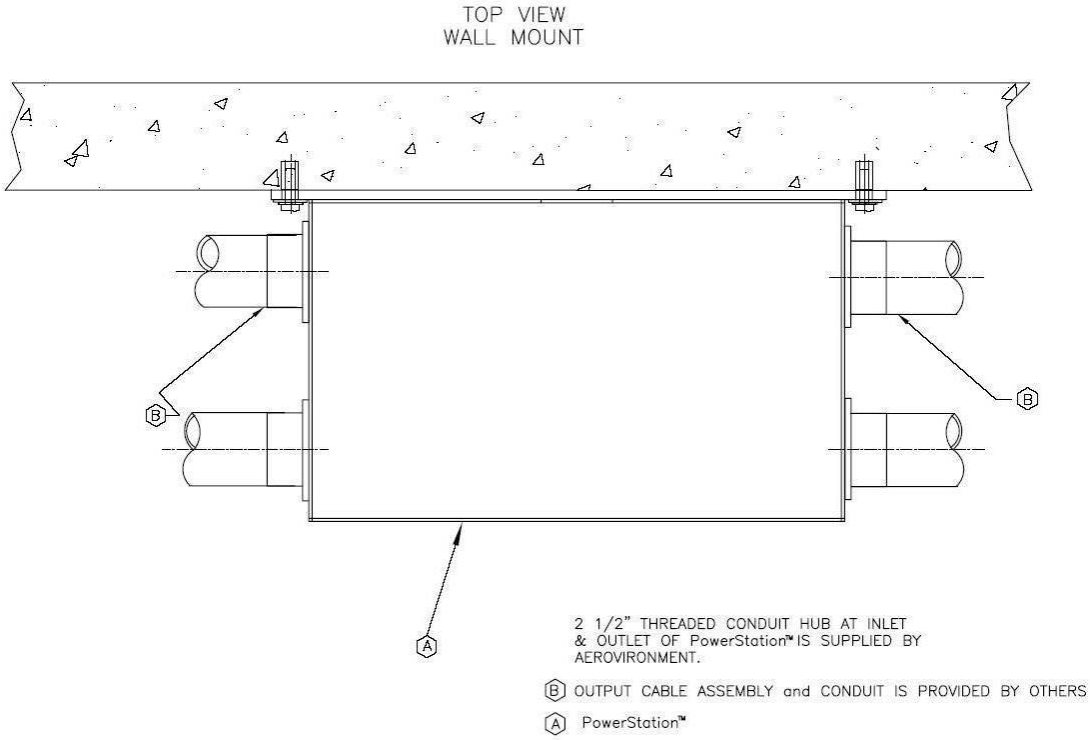
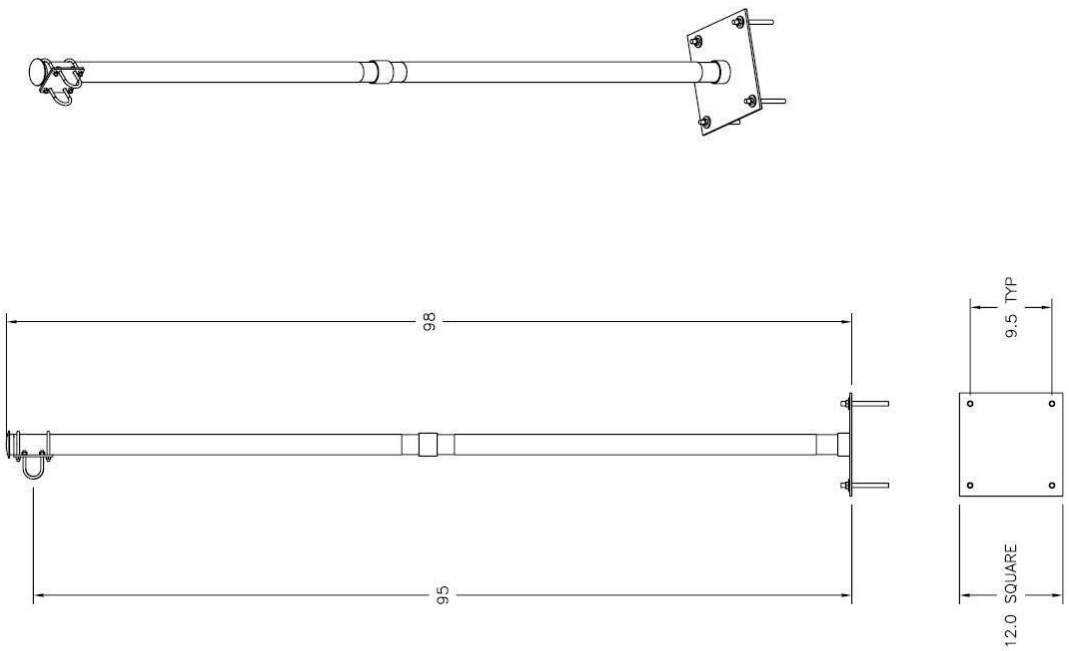


Figure 8. PowerStation Installation Connection Wiring



B. ALL DIMENSIONS IN INCHES

A. Power Pole Installation Instructions

1. Measure the locations for each pole.
2. Mount each pole to floor using 4 studs. Install studs into the concrete floor and bolt down pole's base.
3. Screw in first section of pole, followed by the extension piece and then second section of pole.
4. Install cable brackets supplied by AVP and attach charging cables to each pole.

Figure 9. Power Pole Installation

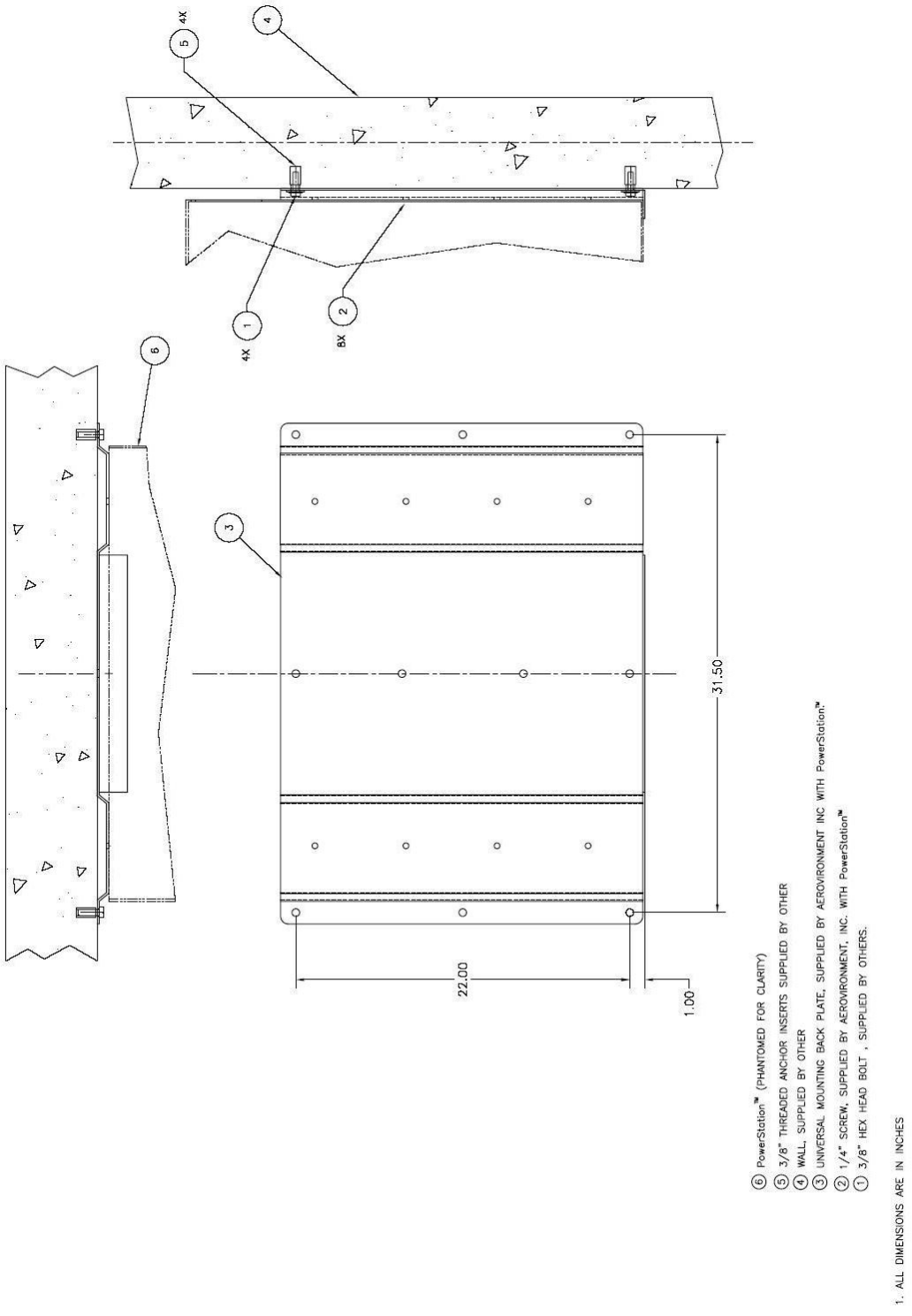


Figure 10. PowerStation Wall Mounting Plate

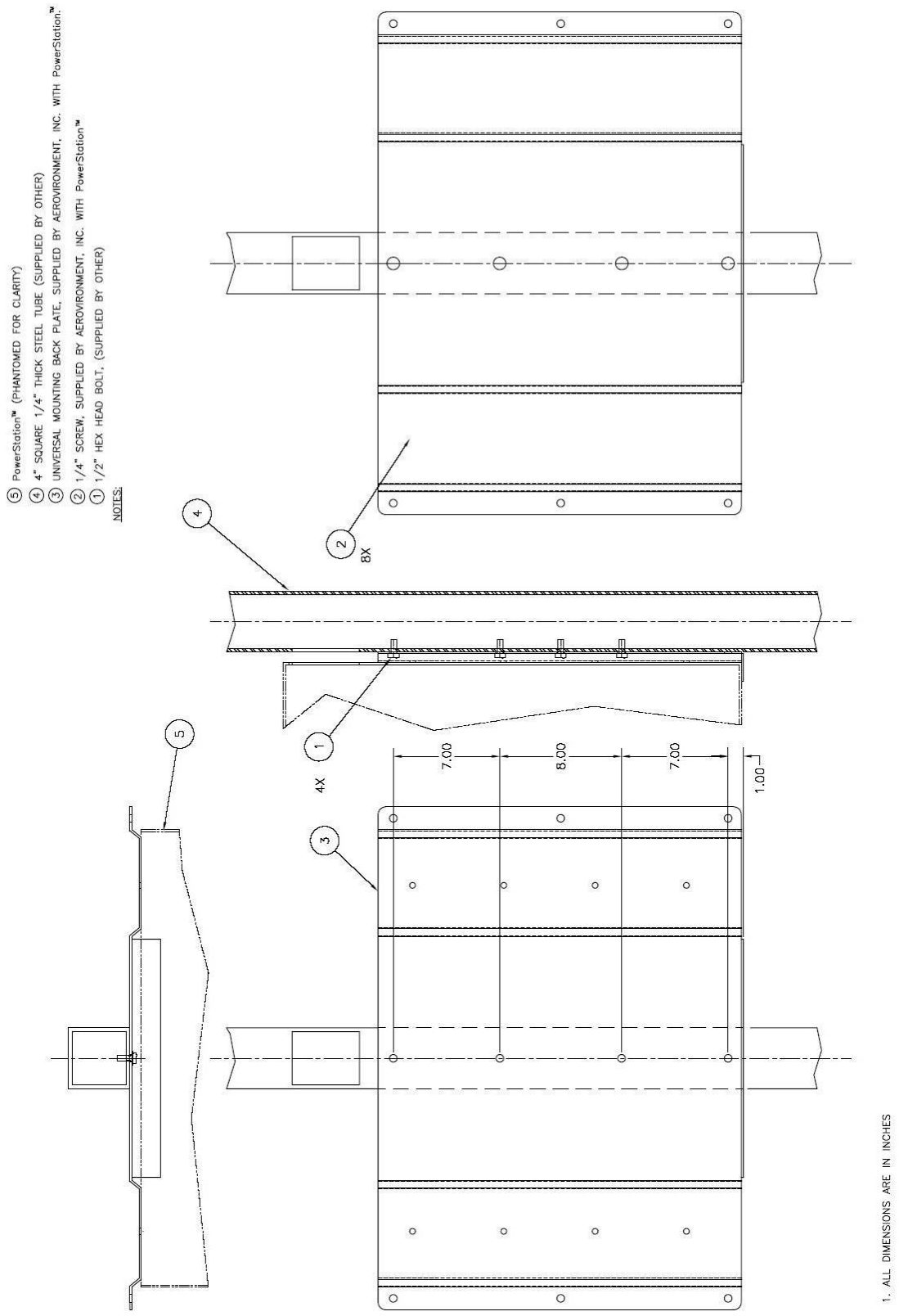


Figure 11. PowerStation Pole Mounting Plate

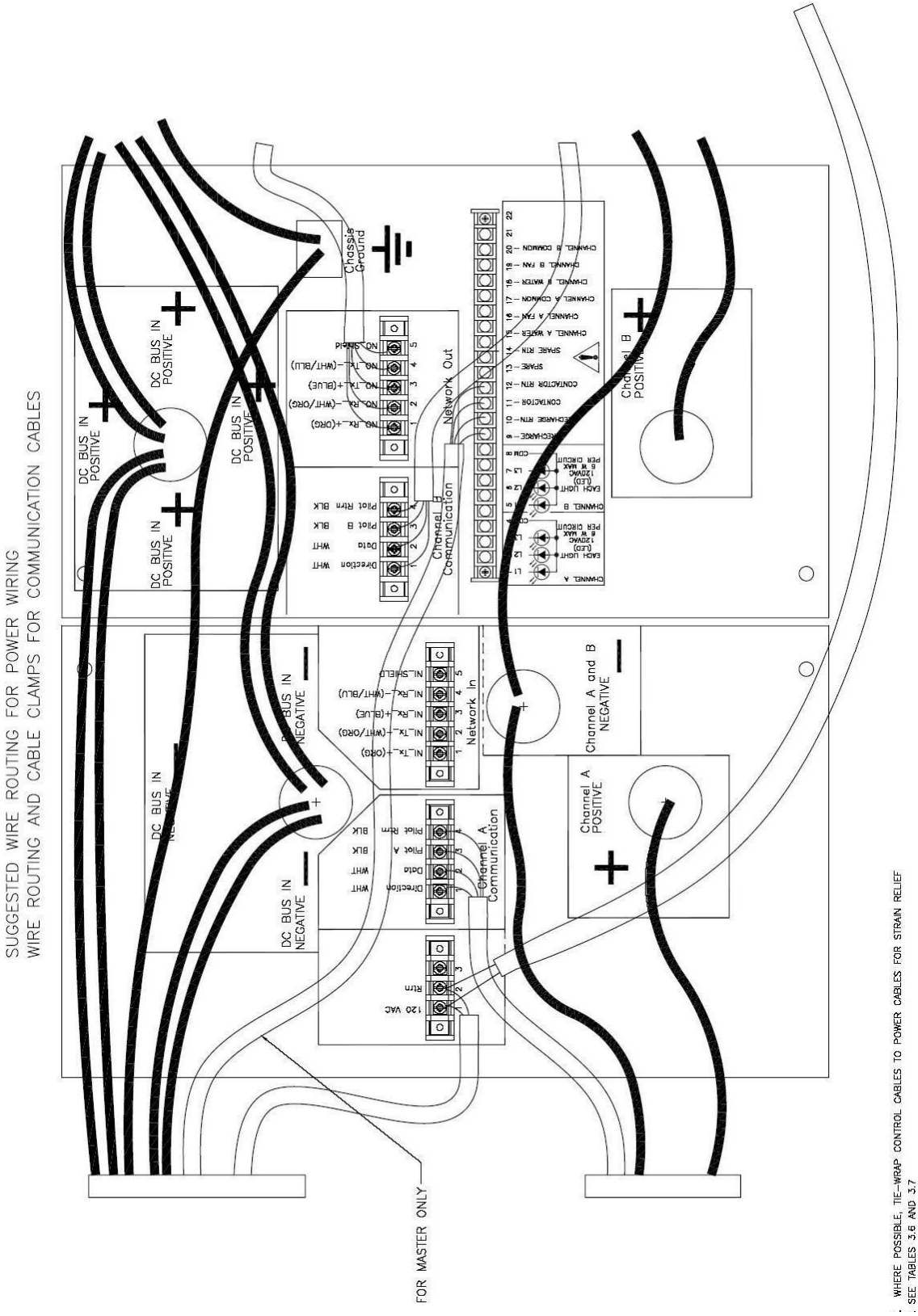


Figure 12. PowerStation Wire Routing Diagram

POWERSERVER - INSTALLATION AND OPERATIONAL CHECKOUT		
Serial #	_ _ _ _ _	
❑	**ALL SCREWS AND WASHERS PROPERLY INSTALLED IN EXTERIOR PANELS**	
❑	**GASKETS AND SEALS PROPERLY INSTALLED ON CONDUIT HUBS**	
❑	**CONDUIT PROPERLY INSTALLED AND SEALED WITH DRIP LOOP, OR EQUIVALENT, TO PREVENT WATER INTRUSION**	
❑	**POWERSERVER PROPERLY MOUNTED**	
❑	**UTILITY CONNECTIONS PROPERLY INSTALLED WITH ALL FASTENERS TIGHTENED TO SPECIFIED TORQUE RATING**	
❑	**ALL DC BUS CONNECTIONS PROPERLY INSTALLED WITH ALL FASTENERS TIGHTENED TO SPECIFIED TORQUE RATING**	
❑	**ALL POWERSTATIONS CONNECTED TO POWERSERVER**	

POWERSTATION - INSTALLATION AND OPERATIONAL CHECKOUT								
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Serial No.	Serial No.	Serial No.	Serial No.	Serial No.	Serial No.	Serial No.	Serial No.	
❑	❑	❑	❑	❑	❑	❑	❑	ALL COMMUNICATION AND POWER WIRING IS PROPERLY CONNECTED ON UPPER SHELF
❑	❑	❑	❑	❑	❑	❑	❑	ALL HIGH CURRENT CABLES IN CHARGING PATH ARE SECURELY FASTENED
❑	❑	❑	❑	❑	❑	❑	❑	ALL SCREWS AND WASHERS PROPERLY INSTALLED ON DOOR AND COVER
❑	❑	❑	❑	❑	❑	❑	❑	GASKETS AND SCREWS PROPERLY INSTALLED IN CONDUIT HUBS
❑	❑	❑	❑	❑	❑	❑	❑	SCREWS AND CAP PROPERLY INSTALLED ON SERIAL PORT CONNECTOR
❑	❑	❑	❑	❑	❑	❑	❑	CONDUIT PROPERLY INSTALLED AND SEALED WITH DRIP LOOP, OR EQUIVALENT, TO PREVENT WATER INTRUSION
❑	❑	❑	❑	❑	❑	❑	❑	DRIP LOOP ON PORT “A” AND PORT “B” CHARGE CABLES
❑	❑	❑	❑	❑	❑	❑	❑	POWERSTATION MOUNTED IN ACCORDANCE WITH INSTALLATION MANUAL
❑	❑	❑	❑	❑	❑	❑	❑	PORT “A” CHARGES PROPERLY WHEN CONNECTED TO VEHICLE
❑	❑	❑	❑	❑	❑	❑	❑	PORT “B” CHARGES PROPERLY WHEN CONNECTED TO VEHICLE
❑	❑	❑	❑	❑	❑	❑	❑	FRONT PANEL LED’s WORK PROPERLY
❑	❑	❑	❑	❑	❑	❑	❑	DISPLAY IS FULLY OPERATIONAL
❑	❑	❑	❑	❑	❑	❑	❑	LATEST APPLICATION CODE HAS BEEN LOADED
❑	❑	❑	❑	❑	❑	❑	❑	ALL FRONT PANEL CONTROL BUTTONS ARE FUNCTIONAL

SYSTEM CHECKED BY – NAME / SIGNATURE:	/	**DATE:**	
CUSTOMER / LOCATION:	/	**GATE:**	

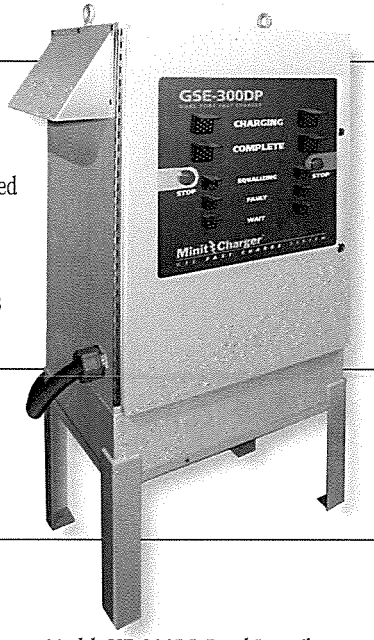
Minit Charger® Model GSE-300DP

The eTec Minit-Charger™ GSE-300DP Dual Port 30kW System

The GSE-300DP is a Dual Port 30kW universal fast charge system specifically designed for airport electric ground support equipment and the harsh environments in which they operate. The GSE-300DP is capable of charging electric baggage tractors, belt loaders and push backs and all of your other electric GSE on the ramp with battery systems from 24 volts 96 volts.

Features of the eTec SuperCharge GSE-300DP include...

- The patented eTec Minit-Charger™ algorithm
- Simultaneous charge times/vehicle (typical GSE battery)
  - 1 hour or less (starting at 60% SOC to 80% SOC)
  - 2 hours or less (starting at 30% SOC to 80% SOC)
- Utilizes the eTec battery module to automatically identify voltage and battery chemistry
- 24 V to 96 V nominal battery pack voltage sealed (VRLA) and flooded batteries
- Automatic equalization
- Rapid shutdown feature for safe operation
- Temperature compensated
- BIW 9-Pin 400 Amp connector standard equipment (optional configurations available)



Model GSE-300DP Dual Port Charger

Power Section Design

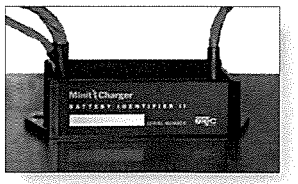
A new High Frequency IGBT design that provides 250Amps and 15kWs of output power per port for a total of 30kW. The GSE-300DP is a high efficient design that provides the maximum power output per port simultaneously in order to service the most demanding GSE applications.

Charge Station Control

Simplistic charge control panel that provides an "auto-start" feature and very bright indicator lights that are highly readible from the ramp. An optional digital display is available for operators that desire more in-depth information regarding the charge.

Battery Identifier II Module

Utilizing the industry standard "CANOpen" protocol, the eTec Battery Identifier II (BI2) communicates critical data between the vehicle battery pack and the charger in order to implement the patented Minit-Charger algorithm that eliminates destructive overcharge and minimizes temperature rise. The BI2 is programmable to allow any size battery pack and battery chemistry and is built rugged for the harsh airport environment.



Battery Identifier Module II

Specifications

Input

Input Voltage	480 VAC, 3-Phase
Maximum Input Current	48 Amps AC RMS
Frequency	60 Hz
Power Quality (for typical airport supply)	Meets IEEE-519 IEC 6100-3-4

Output

Maximum Output Power	30kW
Maximum Output Power per Port	15kW
Maximum Output Current per Port	250Amps
Voltage Operating Range	18VDC–120VDC

General Specifications

Dimensions including stand (H/W/D)	66"h x 38"w x 24"d	Mounting	ground or wall
Weight	450lbs	Battery Types	Sealed VRLA or Flooded
Operating Temperature	-25° C to +40° C	Warranty	2-Year Parts, 1-Year Onsite Labor (Continental US)
Enclosure	outdoor rated		

eTec An ECOtality Company

430 South 2nd Avenue, Phoenix, Arizona 85003 · Tel: 602-716-9576 · Fax: 602-256-2606 · www.minit-charger.com

Appendix D
Financial Analysis

Financial Analysis for Extremely Low Emission Technology Ground Service Equipment Feasibility Analysis

Prepared for:

Los Angeles World Airports
Facilities Management Group (FMG)
Environmental Services Division (ESD)
7301 World Way West
Los Angeles, California 90045
Contact: Jaideep Vaswani

Prepared by:
AvAirPros
October 1, 2013

AvAirPros

This document has been prepared by AvAirPros at the request of Los Angeles World Airports (LAWA) to analyze the fiscal considerations of Extremely Low Emission Technology Ground Service Equipment (eletGSE) and related infrastructure at Los Angeles International Airport (LAX). This effort will also be documented in the Comprehensive Feasibility Analysis for Extremely Low Emission Technology Ground Service Equipment prepared by CDM Smith Inc. (CDM).

The following financial analysis includes GSE unit cost comparisons, annual cost pro formas, and cost modeling for various eletGSE use scenarios. The material is presented for a variety of GSE types and is classified using designations within the California Air Resource Board's OFFROAD2007 emissions model. The financial analysis compares conventional fuel GSE to electric GSE. Electric GSE is considered by LAWA to be the most viable option for substantially reducing air pollutant emissions associated with GSE operations at LAX. As stated in ACRP Report 78, there are more electric GSE units than any other alternative fuel type in the United States. Approximately 10% of the 72,000 GSE units currently in use in the United States are electric. At LAX, the GSE inventory is comprised of a total of 2,724 units. 1,281 units, or 47% of the inventory, use conventional fuels, 999 units, or 37%, use electric battery power, and 444 units, or 16%, use LPG/CNG fuel.

Based on the manufacturers surveyed, electric equipment cost is generally 8% to 23% more than conventional fuel based equipment. In addition, when buying electric the cost of power infrastructure and battery charging station should be considered. However, despite the higher initial cost, many owner operators have elected to purchase electric due to its lower operating costs. Electric GSE have smaller motor part inventories and thus can cost less in maintenance, parts and labor. Fuel costs can also be considerably less with electric versus conventional fuel GSE. Based on our analysis, electric fuel cost is generally 80% lower than conventional GSE fuel cost. In summary, our findings were that while electric has a higher initial cost, the lower operating costs drive a more favorable annual life cycle cost than its conventional GSE counterpart.

In order to substantially reduce GSE emissions at LAX, owner operators will need to transition a portion of their fleet from conventional GSE to alternative fuel GSE. The most viable option in that regard is electric GSE. As part of the analysis, three tiers of recommended GSE electric feasibility were prepared. AvAirPros prepared the fiscal considerations for each tier: Tier A - Readily available as electric GSE and widely used today, Tier B - Generally available and increasing in use, and Tier C - Emerging technology. Tier A required $23 million in one-time capital investment and upon implementation resulted in $2.8 million annual savings. Tier B required $28 million in one-time capital investment and upon implementation resulted in $1.8 million annual savings. Tier C required $70 million in one-time capital investment and upon implementation resulted in $1.5 million annual savings.

The approach, methodologies and results of the financial analysis, are summarized below.

Background

The overall objective of this effort was to provide LAWA with an assessment of the GSE fleet and supporting infrastructure in use at LAX, the potential for eletGSE use scenarios and associated infrastructure needs, and recommendations for increasing the percentage of eletGSE fleet that is powered by alternative fuels. The combined work of these efforts would be culminated in a final project report.

AvAirPros role was to assist in stakeholder coordination, prepare the financial analysis, and to provide input to the technology assessments. Specifically, AvAirPros facilitated the coordination of communications and activities with stakeholder representatives including airline corporate airport affairs representatives, passenger and cargo airline local operators, and third party service providers. AvAirPros assisted in the GSE inventory process, GSE technology assessments and infrastructure, benchmarking of other comparable airports, establishment of eletGSE use scenarios, provided eletGSE and infrastructure financial pro formas, and assisted in the development of eletGSE policy concepts.

Financial Analysis

To evaluate the financial considerations of conventional fuel GSE versus electric GSE, the AvAirPros team surveyed existing GSE owner operators, GSE equipment and infrastructure manufactures, as well as airline environmental and financial representatives. The major factors evaluated included equipment cost, equipment life, maintenance cost, part cost, battery life, battery cost, engine cost, fuel cost, electricity cost, electrical infrastructure and charging unit costs.

Equipment Cost and Ownership

The cost to purchase GSE is an important consideration among owner operators of equipment when deciding whether to purchase conventional fuel or electrical equipment. GSE ownership is a capital intensive proposition. The majority of GSE is purchased in bulk, with specific user requirements, and sold direct from the manufacturer. As a result, pricing can vary greatly based on the quantity and make-up of the order. This makes purchase cost information very difficult to obtain. For our purposes, we targeted mid-level price points with average unit features.

As shown below in the Unit Cost Comparison table, conventional fuel baggage tractors and belt loaders range from $33,100 to $52,000, while their electric equivalents range from $42,100 to $57,200. This price differential is not unique. Based on the manufacturers surveyed, electric equipment cost is generally 8% to 23% more than conventional fuel based equipment. We found that the heavier duty or more complex the unit, the greater the price differential. There was, however, one exception. A narrow body aircraft tractor manufacturer was offering both electric and conventional pushback tractors at the same price point. For all other units, the GSE manufactures conveyed that as the production volume of electric units increases, the price differential will likely decrease.

Rather than buying new electric GSE units, some owner operators have converted conventional fuel based equipment to electric. The conversion can be technically difficult since the original equipment engine is replaced with a new electric motor and batteries while using the original GSE chassis. Given the complexity, conversion cost can be material and vary greatly depending on the type, model, and quantity of equipment converted. GSE equipment with lower unit costs (carts, fork lifts) are generally not economically feasible to convert. Additionally, some equipment types that are used for heavy loads and/or lifting cannot be converted to electric given the vehicle limitations for weight and balance. For equipment that is feasible for conversion, finding a vendor to perform the conversion may be challenging. This has led some airlines to perform selected conversion work in-house. Estimated conversion costs for selected GSE are shown below.

UNIT COST COMPARISON				
	Conventional	**Electric**	**Difference**	**Conversion**
Aircraft Tractor (NB)	$132,000	$132,000	$0	$25,000
Aircraft Tractor (WB)	$370,000	$400,000	$30,000	$80,000
Baggage Tug	$33,100	$42,100	$9,000	$25,000
Belt Loader	$52,000	$57,200	$5,200	$15,000
Cargo Loader (15,000 lbs.)	$250,000	$275,000	$25,000	$50,000
Cargo Loader (60,000 lbs.)	$570,000	$620,000	$50,000	$75,000
Cargo Tractors (Medium Capacity)	$57,500	$66,500	$9,000	$40,000
Cart	$15,000	$19,500	$4,500	N/A
Forklift (3,000 - 6,000 lbs.)	$24,700	$35,500	$10,800	N/A
Forklift (10,000 lbs.)	$49,000	$70,600	$21,600	N/A
Hydrant Cart	$15,000	$19,500	$4,500	N/A
Lavatory Cart	$14,700	$19,100	$4,400	N/A
Lift (NB)	$58,200	$65,900	$7,700	$40,000
Lift (WB)	$140,000	$160,000	$20,000	$100,000
Passenger Stand	$55,000	$71,500	$16,500	$33,000
Sweeper	$60,000	$78,000	$18,000	$36,000

In our research we found that the GSE life span of equipment can range from fifteen (15) years to twenty-five (25) years depending on type, use, and maintenance of the equipment. The specific equipment life span assumptions used in our financial analysis can be referenced in Attachment 6: Assumptions. In Attachment 1: eletGSE Annual Cost Comparison by Equipment Type - Terminal Airlines, and Attachment 2: eletGSE Annual Cost Comparison by Equipment Type - Cargo Airlines, and discussed in greater detail below, you'll find a side by side comparison of annual ownership costs by GSE type. The Annual Equipment Expenditure is represented by the GSE unit cost divided by the life span of the equipment.

When buying electric, the cost of the power infrastructure and battery charging stations must be considered. Power charging infrastructure can be expensive at an airport that does not have sufficient existing electric power available. At LAX, the analysis of existing power conditions determined that a moderate level of investment was required for power capacity and distribution at the terminals. As shown below, the terminal power infrastructure totaled approximately $4.7 million. The battery charging station cost for 782 ports totaled approximately $13.9 million. Total cost for the terminal electrification project is estimated at $18.6 million.

TERMINAL ELECTRIFICATION PROJECT			
Location	**Power Infrastructure**	**Battery Charging Station**	**Total**
Terminal 1	$385,016	$1,071,000	$1,456,016
Terminal 2	$156,242	$1,546,800	$1,703,042
Terminal 3	$982,536	$1,377,300	$2,359,836
Terminal 4	$444,865	$1,761,000	$2,205,865
Terminal 5	$157,813	$1,448,700	$1,606,513
Terminal 6	$513,890	$1,865,100	$2,378,990
Terminal 7	$319,865	$1,514,100	$1,833,965
Terminal 8	$186,928	$545,000	$731,928
American Eagle Commuter Facility	$229,394	$470,000	$699,394
Bradley West	$223,361	$987,000	$1,210,361
West Ron	$1,120,616	$1,285,200	$2,405,816
Midfield Satellite Concourse	N/A	N/A	N/A
TOTAL	**$4,720,527**	**$13,871,200**	**$18,591,727**

An analysis of existing power conditions was also conducted for cargo facilities. For this analysis, it was assumed that LAWA would proceed with the 400 Hz electrification as an enabling project. The level of incremental investment required for the LAX cargo infrastructure totaled approximately $2.3 million. The battery charging station cost for 430 ports totaled approximately $7.5 million. Total cost for the cargo electrification project is estimated at $9.9 million.

INFRASTRUCTURE COST - CARGO			
Location	**Power Infrastructure**	**Battery Charging Station**	**Total**
B1 Cargo	$262,176	$526,500	$788,676
C1 Cargo	$66,834	$351,000	$417,834
Imperial Terminal	$81,121	$351,000	$432,121
South Pads	$274,241	$877,500	$1,151,741
Singapore airlines	$100,171	$351,000	$451,171
Korean Air Cargo	$181,134	$351,000	$532,134
JAL Cargo	$109,696	$351,000	$460,696
FedEx	$621,427	$1,930,500	$2,551,927
DHL/ABX	$167,005	$702,000	$869,005
Imperial Cargo	$450,850	$1,755,000	$2,205,850
TOTAL	**$2,314,654**	**$7,546,500**	**$9,861,154**

For our analysis, we assumed that infrastructure and battery charging stations would be financed and costs amortized over 25 years. To adequately capture the full cost of electric GSE units as compared to conventional GSE units, we allocated the electric infrastructure and battery charging stations cost to each electric GSE unit. To establish the annual electric infrastructure cost, we divided the annual financing cost by the number of GSE units for each area – terminal and cargo. The annual cost per GSE unit at the terminal is approximately $800 and for the cargo area is approximately $1,463.

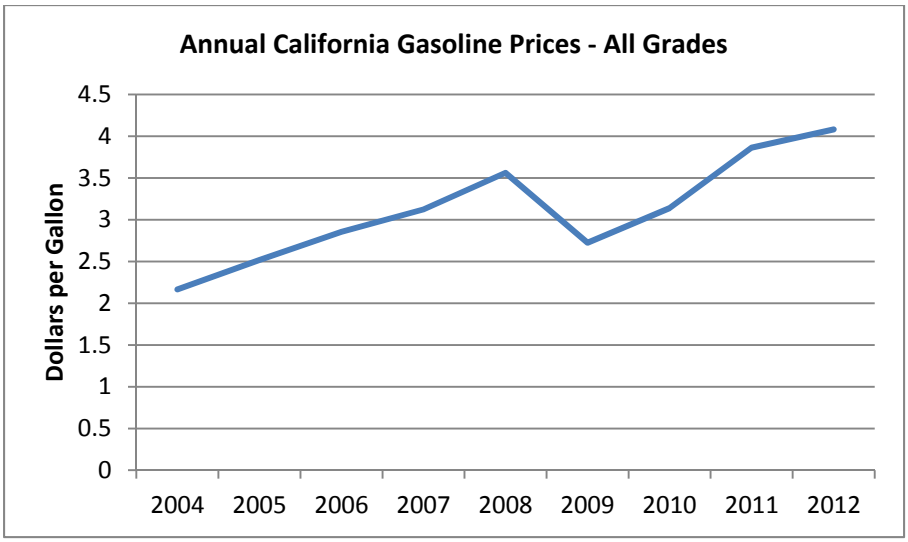
Maintenance and Operating Costs

While purchase cost may be an initial concern of owner operators, maintenance and operating costs should not be ignored. Maintenance and operating costs are far more favorable in electric GSE units than their conventional fuel counterparts. Combustible engines have complex components, a lot more moving parts and the engines must be serviced regularly. This regular maintenance can be costly in terms of parts and labor. Conversely, electric vehicles are powered by batteries and not combustible engines. Electric GSE units require no oil changes, belts, spark plugs, fuel injectors, etc. and they have smaller motor part inventories.

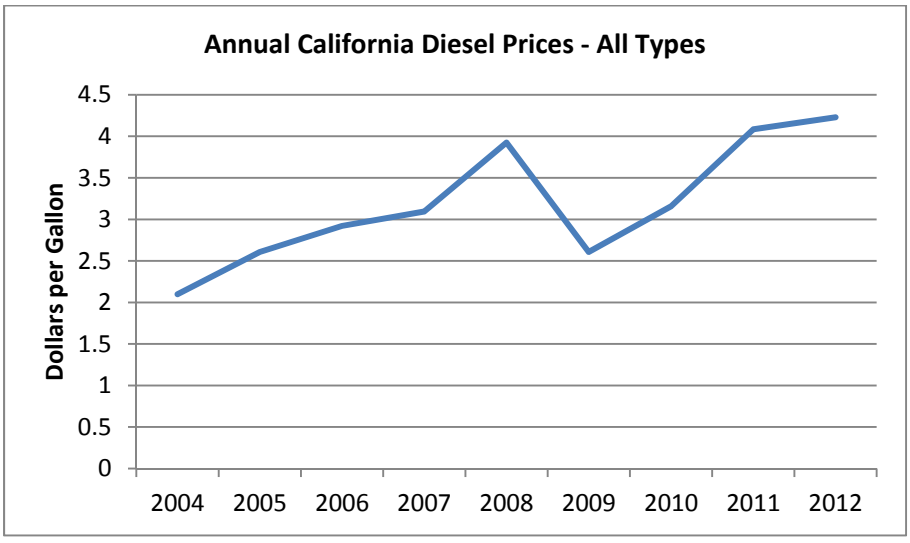
AvAirPros surveyed existing GSE operators to establish annual cost maintenance assumptions. The approach and costs of GSE maintenance programs varied greatly between owner operators and further varied by GSE type, model and year. Some owner operators have an established GSE renew and replacement program where maintenance costs are fairly predictable. Other owner operators replace GSE only in good economic times, replacing the equipment in their fleet that has the least amount of remaining useful life. Naturally, maintaining older equipment is more costly, while new equipment often has a warranty period and lower maintenance requirements in their earlier years. As a result, maintenance costs without a renewal and replacement program are more unpredictable. Labor rates

also play a part in cost volatility. Labor rates vary between work that is insourced or outsourced and whether employees are paid labor on non-labor wage and benefits. For this analysis, we averaged conventional maintenance labor and parts costs within similar equipment families. Given that electric equipment had a much lower service requirement, we found that we could use the same maintenance and labor cost for all electric GSE types. Battery life replacement and engine life replacement were comparable at 5 years for most conventional and electric GSE types. However, we found that battery replacement cost ranged from $5,000 to $16,000 and engine replacement from $6,180 to $13,905 depending on the type of equipment.

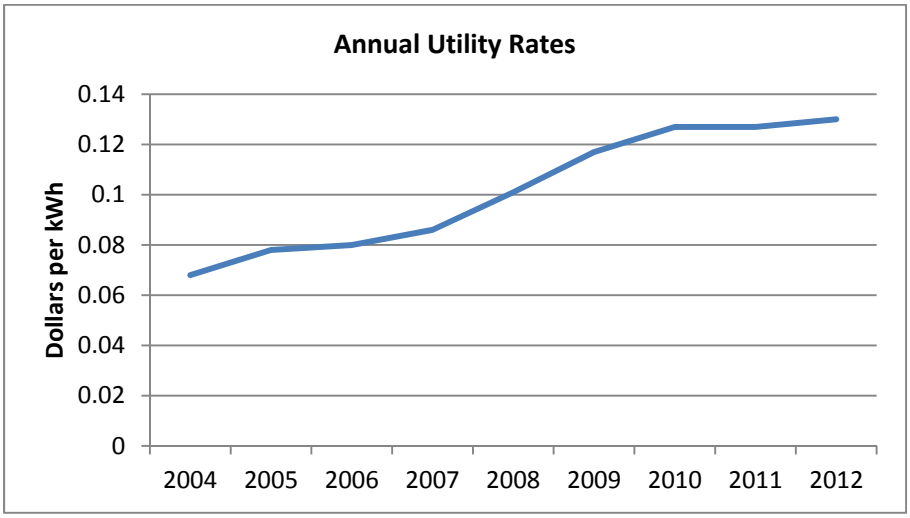
Annual fuel cost can be one of the largest cost components of GSE ownership, especially with conventional GSE units. Conventional fuel costs have also been more volatile, while electrical costs have been far more stable.



Source: U.S Department of Energy



Source: U.S Department of Energy



Source: U.S Department of Energy

For our analysis, we assumed a current conventional fuel cost of $4.06 per gallon. LAWA provided the current utility rate of 13 cents per kilowatt–hour. To establish the annual fuel cost per GSE unit, we multiplied the average fuel burn per day by the fuel rate above and then multiplied by 365 days.
When considering total operating costs, the GSE owner operator must consider the annual fuel cost. Based on our analysis, electric GSE fuel cost is generally 80% lower than conventional GSE fuel cost.

Annual Cost Comparison

Since electric fuel GSE and the supporting infrastructure typically have a higher initial cost than conventional fuel GSE, annual life cycle cost should be evaluated.

Our analysis found that electric GSE has lower operating costs than conventional GSE. However, capital costs for new conventional GSE are lower than for new electric. When considering annual life cycle costs, electric was favorable for the following equipment types: aircraft push-back tractors, baggage tugs, belt loaders, cargo loaders, cargo tractors, carts, forklifts, lifts, passenger stands and sweepers. Generally speaking, the higher the fuel consumption, the greater the savings with electric versus conventional GSE. As shown below, the annual life cycle cost of a conventional narrow body aircraft tractor is $24,162, versus an electric cost of $15,105. By purchasing electric, the owner operator saves approximately $9,058 annually over the purchase of a conventional unit.

AIRCRAFT PUSH-BACK TRACTOR (NB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$5,280	$5,280	$0
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$3,200	$419
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$24,162**	**$15,105**	**($9,058)**

Annual cost comparisons for each GSE type with a corresponding electric equivalent can be seen In Attachment 1: eletGSE Annual Cost Comparison by Equipment Type - Terminal Airlines, and Attachment 2: eletGSE Annual Cost Comparison by Equipment Type - Cargo Airlines.

GSE Cost Pro Forma by Use Tier

As previously noted, an objective of this effort was to provide LAWA with eletGSE use scenarios and recommendations for increasing the percentage of eletGSE fleet that is powered by alternative fuels.

The results of our study culminated with the establishment of three tiers of recommended GSE electric feasibility. The tiers are summarized below:

Tier A - Readily available as electric GSE and widely-used today

- Baggage tugs, Belt loaders, Carts, Lavatory cart, Hydrant carts, Passenger stands, and Sweepers.

Upon implementation of the conversion of Tier A to electric, a total of 494 pieces of equipment (18% of the fleet) would be converted, representing approximately $23 million in one-time capital costs. Electric rather than conventional GSE would result in $2.8 million in annual cost savings.

Tier B - Generally available and increasing in use

- Narrow-body aircraft push-back tractors, Forklifts, and Medium-capacity cargo tractors.

Upon implementation of the conversion of Tier B to electric, a total of 436 pieces of equipment (16% of the fleet) would be converted, representing approximately $28 million in one-time capital costs. Electric rather than conventional GSE would result in $1.8 million in annual cost savings.

Tier C - Emerging technology

- Wide-body aircraft push-back tractors, Cargo deck loaders, and Lifts.

Upon implementation of the conversion of Tier C to electric, a total of 232 pieces of equipment (9% of the fleet) would be converted, representing approximately $70 million in one-time capital costs. Electric rather than conventional GSE would result in $1.5 million in annual cost savings.

Upon implementation of the conversion to electric of Tiers A, B, and C, a total of 1,162 pieces of equipment (43% of the fleet) would be converted, representing approximately $121 million in one-time capital costs. Electric rather than conventional would result in $6.1 million in annual cost savings.

Attachment 3: eletGSE Cost Pro Forma by Use Tiers shows the total costs and annual savings by tier (for both terminal and cargo airlines) associated with converting conventional GSE to electric. Attachment 4: eletGSE Cost Pro Forma by Use Tiers – Terminal Airlines shows the total cost and annual savings by tier associated with converting conventional GSE to electric for each terminal airline. Attachment 5: eletGSE Cost Pro Forma by Use Tiers – Cargo Airlines shows the total costs and annual savings by tier associated with converting conventional GSE to electric for each cargo airline.

In summary, our findings were that while electric GSE has a higher initial cost, the lower operating costs cause electric GSE to have a more favorable annual life cycle cost than its conventional GSE counterpart. As stated, electric equipment cost is generally 8% to 23% higher than conventional fuel based equipment and the cost of power infrastructure and battery charging station should also be considered when buying electric. However, electric GSE can cost less in maintenance, parts and labor and electric fuel cost is generally 80% lower than conventional GSE fuel cost. Despite the higher initial cost, the lower operating costs make electric GSE an attractive option and the most viable way to achieve substantial reductions in air pollutant emissions associated with GSE operations at LAX.

ELE GSE Annual Cost Comparison by Equipment Type

Terminal Airlines

AIRCRAFT PUSH-BACK TRACTOR (NB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$5,280	$5,280	$0
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$3,200	$419
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$24,162**	**$15,105**	**($9,058)**

AIRCRAFT PUSH-BACK TRACTOR (WB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$14,800	$16,000	$1,200
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$3,200	$419
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$33,682**	**$25,825**	**($7,858)**

BAGGAGE TUG			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$1,655	$2,105	$450
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$2,781	$2,991	$210
Annual Maintenance - Parts	$2,009	$1,410	($598)
Engine/Battery Replacement	$1,236	$1,600	$364
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$16,572**	**$10,448**	**($6,123)**

BELT LOADER			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,600	$2,860	$260
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,236	$833	($403)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$13,923**	**$9,526**	**($4,397)**

CARGO LOADER (LOWER DECK)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$10,000	$11,000	$1,000
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$2,000	$3,200	$1,200
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$26,533**	**$20,943**	**($5,589)**

CARGO LOADER (MAIN DECK)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$22,800	$24,800	$2,000
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$2,600	$3,200	$600
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$39,933**	**$34,743**	**($5,189)**

CARGO TRACTORS (MEDIUM CAPACITY)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,300	$2,660	$360
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,700	$1,800	$100
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$18,533**	**$11,203**	**($7,329)**

CART			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$750	$975	$225
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$1,700	$2,991	$1,292
Annual Maintenance - Parts	$1,751	$1,410	($341)
Engine/Battery Replacement	$1,236	$1,000	($236)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$9,882**	**$7,807**	**($2,075)**

FORKLIFT (3,000 - 6,000 lbs.)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$1,647	$2,367	$720
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$1,339	$2,991	$1,652
Annual Maintenance - Parts	$2,163	$1,410	($753)
Engine/Battery Replacement	$1,030	$1,600	$570
Annual Fuel Cost[2]	$5,928	$1,281	($4,646)
Total Annual Cost	**$12,106**	**$10,449**	**($1,657)**

FORKLIFT (10,000 lbs.)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$3,267	$4,707	$1,440
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$1,339	$2,991	$1,652
Annual Maintenance - Parts	$2,163	$1,410	($753)
Engine/Battery Replacement	$1,030	$1,600	$570
Annual Fuel Cost[2]	$5,928	$1,281	($4,646)
Total Annual Cost	**$13,726**	**$12,789**	**($937)**

HYDRANT CART			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$750	$975	$225
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$1,700	$2,991	$1,292
Annual Maintenance - Parts	$1,751	$1,410	($341)
Engine/Battery Replacement	$1,236	$1,000	($236)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$9,882**	**$7,807**	**($2,075)**

LAVATORY CART			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$735	$955	$220
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$1,700	$2,991	$1,292
Annual Maintenance - Parts	$1,751	$1,410	($341)
Engine/Battery Replacement	$1,236	$1,000	($236)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$9,867**	**$7,787**	**($2,080)**

LIFT (NB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,328	$2,636	$308
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$1,600	($1,181)
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$21,210**	**$10,861**	**($10,350)**

LIFT (WB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$5,600	$6,400	$800
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$1,600	($1,181)
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$24,482**	**$14,625**	**($9,858)**

PASSENGER STAND			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,200	$2,860	$660
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,236	$833	($403)
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$17,969**	**$10,437**	**($7,532)**

SWEEPER			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,400	$3,120	$720
Electrical Infrastructure[1]	$0	$800	$800
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,236	$833	($403)
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$18,169**	**$10,697**	**($7,472)**

[1]Infrastructure cost includes electrical distribution and charging units

[2]Fuel unit costs are based on current rates of $4.06 per gal and $.15 per kWh

ELE GSE Annual Cost Comparison by Equipment Type

Cargo Airlines

AIRCRAFT PUSH-BACK TRACTOR (NB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$5,280	$5,280	$0
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$3,200	$419
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$24,162**	**$15,767**	**($8,395)**

AIRCRAFT PUSH-BACK TRACTOR (WB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$14,800	$16,000	$1,200
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$3,200	$419
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$33,682**	**$26,487**	**($7,195)**

BAGGAGE TUG			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$1,655	$2,105	$450
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$2,781	$2,991	$210
Annual Maintenance - Parts	$2,009	$1,410	($598)
Engine/Battery Replacement	$1,236	$1,600	$364
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$16,572**	**$11,111**	**($5,461)**

BELT LOADER			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,600	$2,860	$260
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,236	$833	($403)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$13,923**	**$10,188**	**($3,735)**

CARGO LOADER (LOWER DECK)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$10,000	$11,000	$1,000
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$2,000	$3,200	$1,200
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$26,533**	**$21,606**	**($4,927)**

CARGO LOADER (MAIN DECK)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$22,800	$24,800	$2,000
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$2,600	$3,200	$600
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$39,933**	**$35,406**	**($4,527)**

CARGO TRACTORS (MEDIUM CAPACITY)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,300	$2,660	$360
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,700	$1,800	$100
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$18,533**	**$11,866**	**($6,667)**

CART			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$750	$975	$225
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$1,700	$2,991	$1,292
Annual Maintenance - Parts	$1,751	$1,410	($341)
Engine/Battery Replacement	$1,236	$1,000	($236)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$9,882**	**$8,470**	**($1,412)**

FORKLIFT (3,000 - 6,000 lbs.)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$1,647	$2,367	$720
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$1,339	$2,991	$1,652
Annual Maintenance - Parts	$2,163	$1,410	($753)
Engine/Battery Replacement	$1,030	$1,600	$570
Annual Fuel Cost[2]	$5,928	$1,281	($4,646)
Total Annual Cost	**$12,106**	**$11,112**	**($995)**

FORKLIFT (10,000 lbs.)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$3,267	$4,707	$1,440
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$1,339	$2,991	$1,652
Annual Maintenance - Parts	$2,163	$1,410	($753)
Engine/Battery Replacement	$1,030	$1,600	$570
Annual Fuel Cost[2]	$5,928	$1,281	($4,646)
Total Annual Cost	**$13,726**	**$13,452**	**($275)**

HYDRANT CART			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$750	$975	$225
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$1,700	$2,991	$1,292
Annual Maintenance - Parts	$1,751	$1,410	($341)
Engine/Battery Replacement	$1,236	$1,000	($236)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$9,882**	**$8,470**	**($1,412)**

LAVATORY CART			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$735	$955	$220
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$1,700	$2,991	$1,292
Annual Maintenance - Parts	$1,751	$1,410	($341)
Engine/Battery Replacement	$1,236	$1,000	($236)
Annual Fuel Cost[2]	$4,446	$631	($3,815)
Total Annual Cost	**$9,867**	**$8,450**	**($1,417)**

LIFT (NB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,328	$2,636	$308
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$1,600	($1,181)
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$21,210**	**$11,523**	**($9,687)**

LIFT (WB)			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$5,600	$6,400	$800
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,296	$2,991	($305)
Annual Maintenance - Parts	$3,914	$1,410	($2,504)
Engine/Battery Replacement	$2,781	$1,600	($1,181)
Annual Fuel Cost[2]	$8,891	$1,424	($7,468)
Total Annual Cost	**$24,482**	**$15,287**	**($9,195)**

PASSENGER STAND			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,200	$2,860	$660
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,236	$833	($403)
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$17,969**	**$11,099**	**($6,870)**

SWEEPER			
	Conventional	**Electric**	**Difference**
Annual Equipment Expenditure	$2,400	$3,120	$720
Electrical Infrastructure[1]	$0	$1,463	$1,463
Annual Maintenance - Labor	$3,762	$2,991	($770)
Annual Maintenance - Parts	$1,880	$1,410	($470)
Engine/Battery Replacement	$1,236	$833	($403)
Annual Fuel Cost[2]	$8,891	$1,542	($7,349)
Total Annual Cost	**$18,169**	**$11,359**	**($6,810)**

[1]Infrastructure cost includes electrical distribution and charging units

[2]Fuel unit costs are based on current rates of $4.06 per gal and $.15 per kWh

ELE GSE Cost Pro Forma by Use Tiers

ATTACHMENT 3

Total of Terminal and Cargo Airlines

Total						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	352	$ 42,100	$ 14,819,200	$ 5,833,300	$ 3,749,400	$ (2,083,900)
Belt Loaders	101	$ 57,200	$ 5,777,200	$ 1,406,200	$ 966,700	$ (439,500)
Carts	9	$ 19,500	$ 175,500	$ 88,900	$ 70,300	$ (18,600)
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	2	$ 19,100	$ 38,200	$ 19,700	$ 15,600	$ (4,100)
Passenger Stands	23	$ 71,500	$ 1,644,500	$ 413,300	$ 241,400	$ (171,900)
Sweepers	7	$ 78,000	$ 546,000	$ 127,200	$ 77,500	$ (49,700)
Total	**494**		**$ 23,000,600**	**$ 7,888,600**	**$ 5,120,900**	**$ (2,767,700)**
Tier B						
Cargo Tractors (Medium Capacity)	74	$ 66,500	$ 4,921,000	$ 1,371,400	$ 833,000	$ (538,400)
Aircraft Pushback Tractors (NB)	102	$ 132,000	$ 13,464,000	$ 2,464,600	$ 1,543,300	$ (921,300)
Forklifts (3,000 - 6,000 lbs.)	244	$ 35,500	$ 8,662,000	$ 2,953,900	$ 2,598,600	$ (355,300)
Forklifts (10,000 lbs.)	16	$ 70,600	$ 1,129,600	$ 219,600	$ 210,600	$ (9,000)
Total	**436**		**$ 28,176,600**	**$ 7,009,500**	**$ 5,185,500**	**$ (1,824,000)**
Tier A and B	**930**		**$ 51,177,200**	**$ 14,898,100**	**$ 10,306,400**	**$ (4,591,700)**
Tier C						
Aircraft Pushback Tractors (WB)	45	$ 400,000	$ 18,000,000	$ 1,515,700	$ 1,166,800	$ (348,900)
Cargo Loaders (Lower Deck)	130	$ 275,000	$ 35,750,000	$ 3,449,300	$ 2,741,200	$ (708,100)
Cargo Loaders (Main Deck)	22	$ 620,000	$ 13,640,000	$ 878,500	$ 773,000	$ (105,500)
Lifts (NB)	31	$ 65,900	$ 2,042,900	$ 657,500	$ 338,700	$ (318,800)
Lifts (WB)	4	$ 160,000	$ 640,000	$ 97,900	$ 58,500	$ (39,400)
Total	**232**		**$ 70,072,900**	**$ 6,598,900**	**$ 5,078,200**	**$ (1,520,700)**
Tier A, B, and C	**1,162**		**$121,250,100**	**$ 21,497,000**	**$ 15,384,600**	**$ (6,112,400)**

ELE GSE Cost Pro Forma by Use Tiers

Terminal Airlines

ABX						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	1	$ 132,000	$ 132,000	$ 24,200	$ 15,100	$ (9,100)
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**1**		**$ 132,000**	**$ 24,200**	**$ 15,100**	**$ (9,100)**
Tier A and B	**1**		**$ 132,000**	**$ 24,200**	**$ 15,100**	**$ (9,100)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	1	$ 65,900	$ 65,900	$ 21,200	$ 10,900	$ (10,300)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**1**		**$ 65,900**	**$ 21,200**	**$ 10,900**	**$ (10,300)**
Tier A, B, and C	**2**		**$ 197,900**	**$ 45,400**	**$ 26,000**	**$ (19,400)**

Aero Port Services						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	2	$ 66,500	$ 133,000	$ 37,100	$ 22,400	$ (14,700)
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	13	$ 35,500	$ 461,500	$ 157,400	$ 135,800	$ (21,600)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**15**		**$ 594,500**	**$ 194,500**	**$ 158,200**	**$ (36,300)**
Tier A and B	**15**		**$ 594,500**	**$ 194,500**	**$ 158,200**	**$ (36,300)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**15**		**$ 594,500**	**$ 194,500**	**$ 158,200**	**$ (36,300)**

Alaska						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	1	$ 35,500	$ 35,500	$ 12,100	$ 10,400	$ (1,700)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**1**		**$ 35,500**	**$ 12,100**	**$ 10,400**	**$ (1,700)**
Tier A and B	**1**		**$ 35,500**	**$ 12,100**	**$ 10,400**	**$ (1,700)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	2	$ 65,900	$ 131,800	$ 42,400	$ 21,700	$ (20,700)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**2**		**$ 131,800**	**$ 42,400**	**$ 21,700**	**$ (20,700)**
Tier A, B, and C	**3**		**$ 167,300**	**$ 54,500**	**$ 32,100**	**$ (22,400)**

American							
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	3	$ 71,500	$ 214,500	$ 53,900	$ 31,300	$ (22,600)
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**3**		**$ 214,500**	**$ 53,900**	**$ 31,300**	**$ (22,600)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	8	$ 132,000	$ 1,056,000	$ 193,300	$ 120,800	$ (72,500)
Forklifts (3,000 - 6,000 lbs.)	23	$ 35,500	$ 816,500	$ 278,400	$ 240,300	$ (38,100)
Forklifts (10,000 lbs.)	3	$ 70,600	$ 211,800	$ 41,200	$ 38,400	$ (2,800)
Total	**34**		**$ 2,084,300**	**$ 512,900**	**$ 399,500**	**$ (113,400)**
Tier A and B	**37**		**$ 2,298,800**	**$ 566,800**	**$ 430,800**	**$ (136,000)**
Tier C						
Aircraft Pushback Tractors (WB)	13	$ 400,000	$ 5,200,000	$ 437,900	$ 335,700	$ (102,200)
Cargo Loaders (Lower Deck)	14	$ 275,000	$ 3,850,000	$ 371,500	$ 293,200	$ (78,300)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**27**		**$ 9,050,000**	**$ 809,400**	**$ 628,900**	**$ (180,500)**
Tier A, B, and C	**64**		**$ 11,348,800**	**$ 1,376,200**	**$ 1,059,700**	**$ (316,500)**

American Eagle						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	9	$ 42,100	$ 378,900	$ 149,100	$ 94,000	$ (55,100)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	2	$ 19,100	$ 38,200	$ 19,700	$ 15,600	$ (4,100)
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**11**		**$ 417,100**	**$ 168,800**	**$ 109,600**	**$ (59,200)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	2	$ 132,000	$ 264,000	$ 48,300	$ 30,200	$ (18,100)
Forklifts (3,000 - 6,000 lbs.)	2	$ 35,500	$ 71,000	$ 24,200	$ 20,900	$ (3,300)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**4**		**$ 335,000**	**$ 72,500**	**$ 51,100**	**$ (21,400)**
Tier A and B	**15**		**$ 752,100**	**$ 241,300**	**$ 160,700**	**$ (80,600)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**15**		**$ 752,100**	**$ 241,300**	**$ 160,700**	**$ (80,600)**

ASIG							
	Electric Equipment Costs			Annual Costs			
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference	
Tier A							
Baggage Tugs	13	$ 42,100	$ 547,300	$ 215,400	$ 135,800	$	(79,600)
Belt Loaders	14	$ 57,200	$ 800,800	$ 194,900	$ 133,400	$	(61,500)
Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$	-
Passenger Stands	2	$ 71,500	$ 143,000	$ 35,900	$ 20,900	$	(15,000)
Sweepers	-	$ 78,000	$ -	$ -	$ -	$	-
Total	**29**		**$ 1,491,100**	**$ 446,200**	**$ 290,100**	**$**	**(156,100)**
Tier B							
Cargo Tractors (Medium Capacity)	12	$ 66,500	$ 798,000	$ 222,400	$ 134,400	$	(88,000)
Aircraft Pushback Tractors (NB)	6	$ 132,000	$ 792,000	$ 145,000	$ 90,600	$	(54,400)
Forklifts (3,000 - 6,000 lbs.)	3	$ 35,500	$ 106,500	$ 36,300	$ 31,300	$	(5,000)
Forklifts (10,000 lbs.)	3	$ 70,600	$ 211,800	$ 41,200	$ 38,400	$	(2,800)
Total	**24**		**$ 1,908,300**	**$ 444,900**	**$ 294,700**	**$**	**(150,200)**
Tier A and B	**53**		**$ 3,399,400**	**$ 891,100**	**$ 584,800**	**$**	**(306,300)**
Tier C							
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$	-
Cargo Loaders (Lower Deck)	10	$ 275,000	$ 2,750,000	$ 265,300	$ 209,400	$	(55,900)
Cargo Loaders (Main Deck)	5	$ 620,000	$ 3,100,000	$ 199,700	$ 173,700	$	(26,000)
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$	-
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$	-
Total	**15**		**$ 5,850,000**	**$ 465,000**	**$ 383,100**	**$**	**(81,900)**
Tier A, B, and C	**68**		**$ 9,249,400**	**$ 1,356,100**	**$ 967,900**	**$**	**(388,200)**

Delta						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	45	$ 42,100	$ 1,894,500	$ 745,700	$ 470,200	$ (275,500)
Belt Loaders	19	$ 57,200	$ 1,086,800	$ 264,500	$ 181,000	$ (83,500)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	5	$ 71,500	$ 357,500	$ 89,800	$ 52,200	$ (37,600)
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**69**		**$ 3,338,800**	**$ 1,100,000**	**$ 703,400**	**$ (396,600)**
Tier B						
Cargo Tractors (Medium Capacity)	22	$ 66,500	$ 1,463,000	$ 407,700	$ 246,500	$ (161,200)
Aircraft Pushback Tractors (NB)	18	$ 132,000	$ 2,376,000	$ 434,900	$ 271,900	$ (163,000)
Forklifts (3,000 - 6,000 lbs.)	16	$ 35,500	$ 568,000	$ 193,700	$ 167,200	$ (26,500)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**56**		**$ 4,407,000**	**$ 1,036,300**	**$ 685,600**	**$ (350,700)**
Tier A and B	**125**		**$ 7,745,800**	**$ 2,136,300**	**$ 1,389,000**	**$ (747,300)**
Tier C						
Aircraft Pushback Tractors (WB)	6	$ 400,000	$ 2,400,000	$ 202,100	$ 154,900	$ (47,200)
Cargo Loaders (Lower Deck)	10	$ 275,000	$ 2,750,000	$ 265,300	$ 209,400	$ (55,900)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	1	$ 65,900	$ 65,900	$ 21,200	$ 10,900	$ (10,300)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**17**		**$ 5,215,900**	**$ 488,600**	**$ 375,200**	**$ (113,400)**
Tier A, B, and C	**142**		**$ 12,961,700**	**$ 2,624,900**	**$ 1,764,200**	**$ (860,700)**

Fly Great Lakes						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	1	$ 42,100	$ 42,100	$ 16,600	$ 10,400	$ (6,200)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**1**		**$ 42,100**	**$ 16,600**	**$ 10,400**	**$ (6,200)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A and B	**1**		**$ 42,100**	**$ 16,600**	**$ 10,400**	**$ (6,200)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**1**		**$ 42,100**	**$ 16,600**	**$ 10,400**	**$ (6,200)**

Frontier							
	Electric Equipment Costs			Annual Costs			
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference	
Tier A							
Baggage Tugs	4	$ 42,100	$ 168,400	$ 66,300	$ 41,800	$	(24,500)
Belt Loaders	2	$ 57,200	$ 114,400	$ 27,800	$ 19,100	$	(8,700)
Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$	-
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$	-
Sweepers	-	$ 78,000	$ -	$ -	$ -	$	-
Total	**6**		**$ 282,800**	**$ 94,100**	**$ 60,900**	**$**	**(33,200)**
Tier B							
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$	-
Aircraft Pushback Tractors (NB)	2	$ 132,000	$ 264,000	$ 48,300	$ 30,200	$	(18,100)
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$	-
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$	-
Total	**2**		**$ 264,000**	**$ 48,300**	**$ 30,200**	**$**	**(18,100)**
Tier A and B	**8**		**$ 546,800**	**$ 142,400**	**$ 91,100**	**$**	**(51,300)**
Tier C							
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$	-
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$	-
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$	-
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$	-
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$	-
Total	**-**		**$ -**	**$ -**	**$ -**	**$**	**-**
Tier A, B, and C	**8**		**$ 546,800**	**$ 142,400**	**$ 91,100**	**$**	**(51,300)**

Global Maintenance Technologies						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A and B	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	3	$ 160,000	$ 480,000	$ 73,400	$ 43,900	$ (29,500)
Total	**3**		**$ 480,000**	**$ 73,400**	**$ 43,900**	**$ (29,500)**
Tier A, B, and C	**3**		**$ 480,000**	**$ 73,400**	**$ 43,900**	**$ (29,500)**

IAS						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	19	$ 42,100	$ 799,900	$ 314,900	$ 198,500	$ (116,400)
Belt Loaders	5	$ 57,200	$ 286,000	$ 69,600	$ 47,600	$ (22,000)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	1	$ 71,500	$ 71,500	$ 18,000	$ 10,400	$ (7,600)
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**25**		**$ 1,157,400**	**$ 402,500**	**$ 256,500**	**$ (146,000)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	5	$ 132,000	$ 660,000	$ 120,800	$ 75,500	$ (45,300)
Forklifts (3,000 - 6,000 lbs.)	2	$ 35,500	$ 71,000	$ 24,200	$ 20,900	$ (3,300)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**7**		**$ 731,000**	**$ 145,000**	**$ 96,400**	**$ (48,600)**
Tier A and B	**32**		**$ 1,888,400**	**$ 547,500**	**$ 352,900**	**$ (194,600)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	10	$ 275,000	$ 2,750,000	$ 265,300	$ 209,400	$ (55,900)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**10**		**$ 2,750,000**	**$ 265,300**	**$ 209,400**	**$ (55,900)**
Tier A, B, and C	**42**		**$ 4,638,400**	**$ 812,800**	**$ 562,300**	**$ (250,500)**

LSG Skychef						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A and B	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**-**		**$ -**	**$ -**	**$ -**	**$ -**

Menzies							
	Electric Equipment Costs			Annual Costs			
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference	
Tier A							
Baggage Tugs	60	$ 42,100	$ 2,526,000	$ 994,300	$ 626,900	$	(367,400)
Belt Loaders	15	$ 57,200	$ 858,000	$ 208,800	$ 142,900	$	(65,900)
Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$	-
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$	-
Sweepers	-	$ 78,000	$ -	$ -	$ -	$	-
Total	**75**		**$ 3,384,000**	**$ 1,203,100**	**$ 769,800**	**$**	**(433,300)**
Tier B							
Cargo Tractors (Medium Capacity)	1	$ 66,500	$ 66,500	$ 18,500	$ 11,200	$	(7,300)
Aircraft Pushback Tractors (NB)	12	$ 132,000	$ 1,584,000	$ 289,900	$ 181,300	$	(108,600)
Forklifts (3,000 - 6,000 lbs.)	2	$ 35,500	$ 71,000	$ 24,200	$ 20,900	$	(3,300)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$	-
Total	**15**		**$ 1,721,500**	**$ 332,600**	**$ 213,400**	**$**	**(119,200)**
Tier A and B	**90**		**$ 5,105,500**	**$ 1,535,700**	**$ 983,200**	**$**	**(552,500)**
Tier C							
Aircraft Pushback Tractors (WB)	11	$ 400,000	$ 4,400,000	$ 370,500	$ 284,100	$	(86,400)
Cargo Loaders (Lower Deck)	20	$ 275,000	$ 5,500,000	$ 530,700	$ 418,900	$	(111,800)
Cargo Loaders (Main Deck)	4	$ 620,000	$ 2,480,000	$ 159,700	$ 139,000	$	(20,700)
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$	-
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$	-
Total	**35**		**$ 12,380,000**	**$ 1,060,900**	**$ 842,000**	**$**	**(218,900)**
Tier A, B, and C	**125**		**$ 17,485,500**	**$ 2,596,600**	**$ 1,825,200**	**$**	**(771,400)**

Mercury						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	13	$ 66,500	$ 864,500	$ 240,900	$ 145,600	$ (95,300)
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	44	$ 35,500	$ 1,562,000	$ 532,700	$ 459,800	$ (72,900)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**57**		**$ 2,426,500**	**$ 773,600**	**$ 605,400**	**$ (168,200)**
Tier A and B	**57**		**$ 2,426,500**	**$ 773,600**	**$ 605,400**	**$ (168,200)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**57**		**$ 2,426,500**	**$ 773,600**	**$ 605,400**	**$ (168,200)**

Servisair							
	Electric Equipment Costs			Annual Costs			
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference	
Tier A							
Baggage Tugs	45	$ 42,100	$ 1,894,500	$ 745,700	$ 470,200	$	(275,500)
Belt Loaders	19	$ 57,200	$ 1,086,800	$ 264,500	$ 181,000	$	(83,500)
Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$	-
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$	-
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$	-
Sweepers	-	$ 78,000	$ -	$ -	$ -	$	-
Total	**64**		**$ 2,981,300**	**$ 1,010,200**	**$ 651,200**	**$**	**(359,000)**
Tier B							
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$	-
Aircraft Pushback Tractors (NB)	15	$ 132,000	$ 1,980,000	$ 362,400	$ 226,600	$	(135,800)
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$	-
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$	-
Total	**15**		**$ 1,980,000**	**$ 362,400**	**$ 226,600**	**$**	**(135,800)**
Tier A and B	**79**		**$ 4,961,300**	**$ 1,372,600**	**$ 877,800**	**$**	**(494,800)**
Tier C							
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$	-
Cargo Loaders (Lower Deck)	18	$ 275,000	$ 4,950,000	$ 477,600	$ 377,000	$	(100,600)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$	-
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$	-
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$	-
Total	**18**		**$ 4,950,000**	**$ 477,600**	**$ 377,000**	**$**	**(100,600)**
Tier A, B, and C	**97**		**$ 9,911,300**	**$ 1,850,200**	**$ 1,254,800**	**$**	**(595,400)**

SIA Engineering							
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	1	$ 35,500	$ 35,500	$ 12,100	$ 10,400	$ (1,700)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**1**		**$ 35,500**	**$ 12,100**	**$ 10,400**	**$ (1,700)**
Tier A and B	**1**		**$ 35,500**	**$ 12,100**	**$ 10,400**	**$ (1,700)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	2	$ 65,900	$ 131,800	$ 42,400	$ 21,700	$ (20,700)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**2**		**$ 131,800**	**$ 42,400**	**$ 21,700**	**$ (20,700)**
Tier A, B, and C	**3**		**$ 167,300**	**$ 54,500**	**$ 32,100**	**$ (22,400)**

SkyWest							
	Electric Equipment Costs			Annual Costs			
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference	
Tier A							
Baggage Tugs	1	$ 42,100	$ 42,100	$ 16,600	$ 10,400	$ (6,200)	
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -	
Carts	-	$ 19,500	$ -	$ -	$ -	$ -	
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -	
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -	
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -	
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -	
Total	**1**		**$ 42,100**	**$ 16,600**	**$ 10,400**	**$ (6,200)**	
Tier B							
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -	
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -	
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -	
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -	
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**	
Tier A and B	**1**		**$ 42,100**	**$ 16,600**	**$ 10,400**	**$ (6,200)**	
Tier C							
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -	
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -	
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -	
Lifts (NB)	1	$ 65,900	$ 65,900	$ 21,200	$ 10,900	$ (10,300)	
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -	
Total	**1**		**$ 65,900**	**$ 21,200**	**$ 10,900**	**$ (10,300)**	
Tier A, B, and C	**2**		**$ 108,000**	**$ 37,800**	**$ 21,300**	**$ (16,500)**	

Southwest						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	7	$ 42,100	$ 294,700	$ 116,000	$ 73,100	$ (42,900)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	7	$ 19,500	$ 136,500	$ 69,200	$ 54,700	$ (14,500)
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	1	$ 71,500	$ 71,500	$ 18,000	$ 10,400	$ (7,600)
Sweepers	1	$ 78,000	$ 78,000	$ 18,200	$ 10,700	$ (7,500)
Total	**16**		**$ 580,700**	**$ 221,400**	**$ 148,900**	**$ (72,500)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	9	$ 132,000	$ 1,188,000	$ 217,500	$ 135,900	$ (81,600)
Forklifts (3,000 - 6,000 lbs.)	7	$ 35,500	$ 248,500	$ 84,700	$ 73,100	$ (11,600)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**16**		**$ 1,436,500**	**$ 302,200**	**$ 209,000**	**$ (93,200)**
Tier A and B	**32**		**$ 2,017,200**	**$ 523,600**	**$ 357,900**	**$ (165,700)**
Tier C						
Aircraft Pushback Tractors (WB)	1	$ 400,000	$ 400,000	$ 33,700	$ 25,800	$ (7,900)
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	3	$ 65,900	$ 197,700	$ 63,600	$ 32,600	$ (31,000)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**4**		**$ 597,700**	**$ 97,300**	**$ 58,400**	**$ (38,900)**
Tier A, B, and C	**36**		**$ 2,614,900**	**$ 620,900**	**$ 416,300**	**$ (204,600)**

Swissport						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	17	$ 42,100	$ 715,700	$ 281,700	$ 177,600	$ (104,100)
Belt Loaders	12	$ 57,200	$ 686,400	$ 167,100	$ 114,300	$ (52,800)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	3	$ 71,500	$ 214,500	$ 53,900	$ 31,300	$ (22,600)
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**32**		**$ 1,616,600**	**$ 502,700**	**$ 323,200**	**$ (179,500)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 211,800	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	3	$ 132,000	$ 396,000	$ 72,500	$ 45,300	$ (27,200)
Forklifts (3,000 - 6,000 lbs.)	3	$ 35,500	$ 106,500	$ 36,300	$ 31,300	$ (5,000)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**6**		**$ 502,500**	**$ 108,800**	**$ 76,600**	**$ (32,200)**
Tier A and B	**38**		**$ 2,119,100**	**$ 611,500**	**$ 399,800**	**$ (211,700)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	10	$ 275,000	$ 2,750,000	$ 265,300	$ 209,400	$ (55,900)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**10**		**$ 2,750,000**	**$ 265,300**	**$ 209,400**	**$ (55,900)**
Tier A, B, and C	**48**		**$ 4,869,100**	**$ 876,800**	**$ 609,200**	**$ (267,600)**

Total Airport Services						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	8	$ 42,100	$ 336,800	$ 132,600	$ 83,600	$ (49,000)
Belt Loaders	2	$ 57,200	$ 114,400	$ 27,800	$ 19,100	$ (8,700)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**10**		**$ 451,200**	**$ 160,400**	**$ 102,700**	**$ (57,700)**
Tier B						
Cargo Tractors (Medium Capacity)	1	$ 66,500	$ 66,500	$ 18,500	$ 11,200	$ (7,300)
Aircraft Pushback Tractors (NB)	1	$ 132,000	$ 132,000	$ 24,200	$ 15,100	$ (9,100)
Forklifts (3,000 - 6,000 lbs.)	25	$ 35,500	$ 887,500	$ 302,700	$ 261,200	$ (41,500)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**27**		**$ 1,086,000**	**$ 345,400**	**$ 287,500**	**$ (57,900)**
Tier A and B	**37**		**$ 1,537,200**	**$ 505,800**	**$ 390,200**	**$ (115,600)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	7	$ 275,000	$ 1,925,000	$ 185,700	$ 146,600	$ (39,100)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**7**		**$ 1,925,000**	**$ 185,700**	**$ 146,600**	**$ (39,100)**
Tier A, B, and C	**44**		**$ 3,462,200**	**$ 691,500**	**$ 536,800**	**$ (154,700)**

United/Continental						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	1	$ 42,100	$ 42,100	$ 16,600	$ 10,400	$ (6,200)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	1	$ 19,500	$ 19,500	$ 9,900	$ 7,800	$ (2,100)
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	5	$ 71,500	$ 357,500	$ 89,800	$ 52,200	$ (37,600)
Sweepers	2	$ 78,000	$ 156,000	$ 36,300	$ 21,400	$ (14,900)
Total	**9**		**$ 575,100**	**$ 152,600**	**$ 91,800**	**$ (60,800)**
Tier B						
Cargo Tractors (Medium Capacity)	13	$ 66,500	$ 864,500	$ 240,900	$ 145,600	$ (95,300)
Aircraft Pushback Tractors (NB)	11	$ 132,000	$ 1,452,000	$ 265,800	$ 166,200	$ (99,600)
Forklifts (3,000 - 6,000 lbs.)	21	$ 35,500	$ 745,500	$ 254,200	$ 219,400	$ (34,800)
Forklifts (10,000 lbs.)	1	$ 70,600	$ 70,600	$ 13,700	$ 12,800	$ (900)
Total	**46**		**$ 3,132,600**	**$ 774,600**	**$ 544,000**	**$ (230,600)**
Tier A and B	**55**		**$ 3,707,700**	**$ 927,200**	**$ 635,800**	**$ (291,400)**
Tier C						
Aircraft Pushback Tractors (WB)	6	$ 400,000	$ 2,400,000	$ 202,100	$ 154,900	$ (47,200)
Cargo Loaders (Lower Deck)	3	$ 275,000	$ 825,000	$ 79,600	$ 62,800	$ (16,800)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	16	$ 65,900	$ 1,054,400	$ 339,400	$ 173,800	$ (165,600)
Lifts (WB)	1	$ 160,000	$ 160,000	$ 24,500	$ 14,600	$ (9,900)
Total	**26**		**$ 4,439,400**	**$ 645,600**	**$ 406,100**	**$ (239,500)**
Tier A, B, and C	**81**		**$ 8,147,100**	**$ 1,572,800**	**$ 1,041,900**	**$ (530,900)**

US Airways						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	6	$ 42,100	$ 252,600	$ 99,400	$ 62,700	$ (36,700)
Belt Loaders	6	$ 57,200	$ 343,200	$ 83,500	$ 57,200	$ (26,300)
Carts	1	$ 19,500	$ 19,500	$ 9,900	$ 7,800	$ (2,100)
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	1	$ 71,500	$ 71,500	$ 18,000	$ 10,400	$ (7,600)
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**14**		**$ 686,800**	**$ 210,800**	**$ 138,100**	**$ (72,700)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	5	$ 132,000	$ 660,000	$ 120,800	$ 75,500	$ (45,300)
Forklifts (3,000 - 6,000 lbs.)	4	$ 35,500	$ 142,000	$ 48,400	$ 41,800	$ (6,600)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**9**		**$ 802,000**	**$ 169,200**	**$ 117,300**	**$ (51,900)**
Tier A and B	**23**		**$ 1,488,800**	**$ 380,000**	**$ 255,400**	**$ (124,600)**
Tier C						
Aircraft Pushback Tractors (WB)	1	$ 400,000	$ 400,000	$ 33,700	$ 25,800	$ (7,900)
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	2	$ 65,900	$ 131,800	$ 42,400	$ 21,700	$ (20,700)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**3**		**$ 531,800**	**$ 76,100**	**$ 47,500**	**$ (28,600)**
Tier A, B, and C	**26**		**$ 2,020,600**	**$ 456,100**	**$ 302,900**	**$ (153,200)**

Worldwide Flight Services						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	8	$ 42,100	$ 336,800	$ 132,600	$ 83,600	$ (49,000)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**8**		**$ 336,800**	**$ 132,600**	**$ 83,600**	**$ (49,000)**
Tier B						
Cargo Tractors (Medium Capacity)	4	$ 66,500	$ 266,000	$ 74,100	$ 44,800	$ (29,300)
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	3	$ 35,500	$ 106,500	$ 36,300	$ 31,300	$ (5,000)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**7**		**$ 372,500**	**$ 110,400**	**$ 76,100**	**$ (34,300)**
Tier A and B	**15**		**$ 709,300**	**$ 243,000**	**$ 159,700**	**$ (83,300)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**15**		**$ 709,300**	**$ 243,000**	**$ 159,700**	**$ (83,300)**

ELE GSE Cost Pro Forma by Use Tiers

Cargo Airlines

AeroUnion						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	8	$ 42,100	$ 336,800	$ 132,600	$ 88,900	$ (43,700)
Belt Loaders	2	$ 57,200	$ 114,400	$ 27,800	$ 20,400	$ (7,400)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**10**		**$ 451,200**	**$ 160,400**	**$ 109,300**	**$ (51,100)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 211,800	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A and B	**10**		**$ 451,200**	**$ 160,400**	**$ 109,300**	**$ (51,100)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	4	$ 620,000	$ 2,480,000	$ 159,700	$ 141,600	$ (18,100)
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**4**		**$ 2,480,000**	**$ 159,700**	**$ 141,600**	**$ (18,100)**
Tier A, B, and C	**14**		**$ 2,931,200**	**$ 320,100**	**$ 250,900**	**$ (69,200)**

DHL						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	8	$ 42,100	$ 336,800	$ 132,600	$ 88,900	$ (43,700)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	1	$ 78,000	$ 78,000	$ 18,200	$ 11,400	$ (6,800)
Total	**9**		**$ 414,800**	**$ 150,800**	**$ 100,300**	**$ (50,500)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	2	$ 132,000	$ 264,000	$ 48,300	$ 31,500	$ (16,800)
Forklifts (3,000 - 6,000 lbs.)	4	$ 35,500	$ 142,000	$ 48,400	$ 44,400	$ (4,000)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**6**		**$ 406,000**	**$ 96,700**	**$ 75,900**	**$ (20,800)**
Tier A and B	**15**		**$ 820,800**	**$ 247,500**	**$ 176,200**	**$ (71,300)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	1	$ 275,000	$ 275,000	$ 26,500	$ 21,600	$ (4,900)
Cargo Loaders (Main Deck)	2	$ 620,000	$ 1,240,000	$ 79,900	$ 70,800	$ (9,100)
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**3**		**$ 1,515,000**	**$ 106,400**	**$ 92,400**	**$ (14,000)**
Tier A, B, and C	**18**		**$ 2,335,800**	**$ 353,900**	**$ 268,600**	**$ (85,300)**

FedEx						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	90	$ 42,100	$ 3,789,000	$ 1,491,500	$ 1,000,000	$ (491,500)
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	1	$ 78,000	$ 78,000	$ 18,200	$ 11,400	$ (6,800)
Total	**91**		**$ 3,867,000**	**$ 1,509,700**	**$ 1,011,400**	**$ (498,300)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	2	$ 132,000	$ 264,000	$ 48,300	$ 31,500	$ (16,800)
Forklifts (3,000 - 6,000 lbs.)	15	$ 35,500	$ 532,500	$ 181,600	$ 166,700	$ (14,900)
Forklifts (10,000 lbs.)	4	$ 70,600	$ 282,400	$ 54,900	$ 53,800	$ (1,100)
Total	**21**		**$ 1,078,900**	**$ 284,800**	**$ 252,000**	**$ (32,800)**
Tier A and B	**112**		**$ 4,945,900**	**$ 1,794,500**	**$ 1,263,400**	**$ (531,100)**
Tier C						
Aircraft Pushback Tractors (WB)	7	$ 400,000	$ 2,800,000	$ 235,800	$ 185,400	$ (50,400)
Cargo Loaders (Lower Deck)	15	$ 275,000	$ 4,125,000	$ 398,000	$ 324,100	$ (73,900)
Cargo Loaders (Main Deck)	7	$ 620,000	$ 4,340,000	$ 279,500	$ 247,800	$ (31,700)
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**29**		**$ 11,265,000**	**$ 913,300**	**$ 757,300**	**$ (156,000)**
Tier A, B, and C	**141**		**$ 16,210,900**	**$ 2,707,800**	**$ 2,020,700**	**$ (687,100)**

Korean Air Cargo						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	2	$ 42,100	$ 84,200	$ 33,100	$ 22,200	$ (10,900)
Belt Loaders	2	$ 57,200	$ 114,400	$ 27,800	$ 20,400	$ (7,400)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	2	$ 71,500	$ 143,000	$ 35,900	$ 22,200	$ (13,700)
Sweepers	2	$ 78,000	$ 156,000	$ 36,300	$ 22,700	$ (13,600)
Total	**8**		**$ 497,600**	**$ 133,100**	**$ 87,500**	**$ (45,600)**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	23	$ 35,500	$ 816,500	$ 278,400	$ 255,600	$ (22,800)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**23**		**$ 816,500**	**$ 278,400**	**$ 255,600**	**$ (22,800)**
Tier A and B	**31**		**$ 1,314,100**	**$ 411,500**	**$ 343,100**	**$ (68,400)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	9	$ 275,000	$ 2,475,000	$ 238,800	$ 194,500	$ (44,300)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**9**		**$ 2,475,000**	**$ 238,800**	**$ 194,500**	**$ (44,300)**
Tier A, B, and C	**40**		**$ 3,789,100**	**$ 650,300**	**$ 537,600**	**$ (112,700)**

Pacific Air Cargo							
	Electric Equipment Costs			Annual Costs			
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference	
Tier A							
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -	
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -	
Carts	-	$ 19,500	$ -	$ -	$ -	$ -	
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -	
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -	
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -	
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -	
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**	
Tier B							
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -	
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -	
Forklifts (3,000 - 6,000 lbs.)	-	$ 35,500	$ -	$ -	$ -	$ -	
Forklifts (10,000 lbs.)	5	$ 70,600	$ 353,000	$ 68,600	$ 67,300	$ (1,300)	
Total	**5**		**$ 353,000**	**$ 68,600**	**$ 67,300**	**$ (1,300)**	
Tier A and B	**5**		**$ 353,000**	**$ 68,600**	**$ 67,300**	**$ (1,300)**	
Tier C							
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -	
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -	
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -	
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -	
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -	
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**	
Tier A, B, and C	**5**		**$ 353,000**	**$ 68,600**	**$ 67,300**	**$ (1,300)**	

Swissport Cargo						
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	-	$ 57,200	$ -	$ -	$ -	$ -
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier B						
Cargo Tractors (Medium Capacity)	-	$ 66,500	$ -	$ -	$ -	$ -
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	31	$ 35,500	$ 1,100,500	$ 375,300	$ 344,500	$ (30,800)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**31**		**$ 1,100,500**	**$ 375,300**	**$ 344,500**	**$ (30,800)**
Tier A and B	**31**		**$ 1,100,500**	**$ 375,300**	**$ 344,500**	**$ (30,800)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	-	$ 275,000	$ -	$ -	$ -	$ -
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	-	$ 65,900	$ -	$ -	$ -	$ -
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**-**		**$ -**	**$ -**	**$ -**	**$ -**
Tier A, B, and C	**31**		**$ 1,100,500**	**$ 375,300**	**$ 344,500**	**$ (30,800)**

UPS							
	Electric Equipment Costs			Annual Costs		
	Number of Units	Cost per Unit	Total Cost	Conventional	Electric	Difference
Tier A						
Baggage Tugs	-	$ 42,100	$ -	$ -	$ -	$ -
Belt Loaders	3	$ 57,200	$ 171,600	$ 41,800	$ 30,600	$ (11,200)
Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Hydrant Carts	-	$ 19,500	$ -	$ -	$ -	$ -
Lavatory Carts	-	$ 19,100	$ -	$ -	$ -	$ -
Passenger Stands	-	$ 71,500	$ -	$ -	$ -	$ -
Sweepers	-	$ 78,000	$ -	$ -	$ -	$ -
Total	**3**		**$ 171,600**	**$ 41,800**	**$ 30,600**	**$ (11,200)**
Tier B						
Cargo Tractors (Medium Capacity)	6	$ 66,500	$ 399,000	$ 111,200	$ 71,200	$ (40,000)
Aircraft Pushback Tractors (NB)	-	$ 132,000	$ -	$ -	$ -	$ -
Forklifts (3,000 - 6,000 lbs.)	1	$ 35,500	$ 35,500	$ 12,100	$ 11,100	$ (1,000)
Forklifts (10,000 lbs.)	-	$ 70,600	$ -	$ -	$ -	$ -
Total	**7**		**$ 434,500**	**$ 123,300**	**$ 82,300**	**$ (41,000)**
Tier A and B	**10**		**$ 606,100**	**$ 165,100**	**$ 112,900**	**$ (52,200)**
Tier C						
Aircraft Pushback Tractors (WB)	-	$ 400,000	$ -	$ -	$ -	$ -
Cargo Loaders (Lower Deck)	3	$ 275,000	$ 825,000	$ 79,600	$ 64,800	$ (14,800)
Cargo Loaders (Main Deck)	-	$ 620,000	$ -	$ -	$ -	$ -
Lifts (NB)	3	$ 65,900	$ 197,700	$ 63,600	$ 34,600	$ (29,000)
Lifts (WB)	-	$ 160,000	$ -	$ -	$ -	$ -
Total	**6**		**$ 1,022,700**	**$ 143,200**	**$ 99,400**	**$ (43,800)**
Tier A, B, and C	**16**		**$ 1,628,800**	**$ 308,300**	**$ 212,300**	**$ (96,000)**

Assumptions

Equipment

	Conventional	Electric	Conversion	Life	Conv Maint	Conv Parts	Eng. Life	Eng Repl.	Conv Fuel	Elec Maint	Elec Parts	Battery Life	Batt Repl	Elec Fuel
Aircraft Tractor Pushback General (NB)	132,000	132,000	25,000	25	3296	3914	5	13905	6	2991	1410	5	16000	30
Aircraft Tractor Pushback Tug General (WB)	370,000	400,000	80,000	25	3296	3914	5	13905	6	2991	1410	5	16000	30
Baggage Tug General (Bag)	33,100	42,100	25,000	20	2781	2009	5	6180	6	2991	1410	5	8000	32.5
Belt Loader General	52,000	57,200	15,000	20	3762	1880	5	6180	3	2991	1410	6	5000	13.3
Cargo Loader General (Lower Deck)	250,000	275,000	50,000	25	3762	1880	5	10000	6	2991	1410	5	16000	32.5
Cargo Loader General (Main Deck)	570,000	620,000	75,000	25	3762	1880	5	13000	6	2991	1410	5	16000	32.5
Cargo Tractor (General)	57,500	66,500	40,000	25	3762	1880	5	8500	6	2991	1410	5	9000	32.5
Cart	15,000	19,500	N/A	20	1700	1751	5	6180	3	2991	1410	5	5000	13.3
Forklift (3,000 - 6,000 lbs.)	24,700	35,500	N/A	15	1339	2163	8	8240	4	2991	1410	5	8000	27
Forklift (10,000 lbs.)	49,000	70,600	N/A	15	1339	2163	8	8240	4	2991	1410	5	8000	27
Hydrant Cart	15,000	19,500	N/A	20	1700	1751	5	6180	3	2991	1410	5	5000	13.3
Lavatory Service Cart - 450 gallon	14,700	19,100	N/A	20	1700	1751	5	6180	3	2991	1410	5	5000	13.3
Lift (NB)	58,200	65,900	40,000	25	3296	3914	5	13905	6	2991	1410	5	8000	30
Lift (WB)	140,000	160,000	100,000	25	3296	3914	5	13905	6	2991	1410	5	8000	30
Passenger Stand	55,000	71,500	33,000	25	3762	1880	5	6180	6	2991	1410	6	5000	32.5
Sweeper	60,000	78,000	36,000	25	3762	1880	5	6180	6	2991	1410	6	5000	32.5

Electrical Infrastructure	Terminal	Cargo
total project costs	$ 18,591,727	$ 9,861,154
interest rate	5%	5%
term	25	25
payment (month)	$108,685	$57,647
payment (year)	$1,304,225	$691,768
per unit of GSE	$800	$1,463

Fuel		inflation
$/KwH	$ 0.13	2%
$/gal (High)	$ 4.70	3%
$/gal (Current)	$ 4.06	3%
$/gal (Med)	$ 4.14	3%
$/gal (Low)	$ 3.57	3%
$/gal LPG (High)	$ 2.87	3%
$/gal LPG (Current)	$ 2.49	3%
$/gal LPG (Med)	$ 2.63	3%
$/gal LPG (Low)	$ 2.39	3%

Assumptions

1) The following types of equipment are assumed to not have an electric alternative: Air Conditioners, Air Start Units, Bobtails, Catering Trucks, Deicers, Fuel Trucks, Generators, Ground Power Units, Large Capacity Cargo Tractors (>175 hp), Lavatory Trucks, Other, Service Trucks, Water Trucks

2) Aircraft Tractors are broken down into two categories by serviced aircraft type: narrow-body (≤250 hp) and wide-body (>250 hp)

3) Cargo Loaders are broken down into two categories: Lower Deck (≤120 hp) and Main Deck (>120 hp)

4) Medium Capacity Cargo Tractors (≤175 hp) are assumed to have an electic alternative, whereas, Large Capacity Cargo Tractors (>175 hp) are not

5) Forklifts are broken down into two categories by load capacity: 3,000 - 6,000 lbs. (≤120 hp) and 10,000 lbs. (>120 hp)

6) Lifts are broken down into into two categories by serviced aircraft type: narrow-body (≤175 hp) and wide-body (>175 hp)

7) Inventory counts are taken from the Master GSE Inventory list and categorizations are determined from the horsepowers shown in parenthesis