1. **Award No.**
693JJ32350006

2. **Effective Date**
See No. 16 Below

3. **Assistance Listing No. & Title**
20.200

4. **Award To**

City of Los Angeles, Harbor Department
(Port of Los Angeles)
425 S. Palos Verdes Street
San Pedro, CA
Unique Entity Identifier: TYUJZWJ8N568
TIN No.: 956000735

5. **Sponsoring Office**

U.S. Department of Transportation
Federal Highway Administration
Office of Acquisition & Grants Management
1200 New Jersey Avenue, SE
HCFA-32, Mail Drop E62-204
Washington, DC 20590

6. **Period of Performance**

36-Months from the Effective Date of Award

7. **Total Amount**

Federal Share:	$3,000,000.00
Recipient Share:	$3,000,000.00
Total:	**$6,000,000.00**

8. **Type of Agreement**

Cooperative Agreement

9. **Authority**

Section 6004 of Fixing America's Surface Transportation (FAST) Act (PL. 114-94)

10. **Procurement Request No.**

HOTM230030PR

11. **Federal Funds Obligated**

$3,000,000.00

12. **Submit Payment Requests To**

See "Payment" clause in General Terms and Conditions

13. **Payment Office**

See "Payment" clause in General Terms and Conditions

14. **Accounting and Appropriations Data**

15X044A060.0000.070N44A600.7001000000.41050

15. **Research Title and/or Description of Project**

Port of Los Angeles Gateway

Port of Los Angeles
(City of Los Angeles Harbor Department)

Signature Date
Name:
Title:

APPROVED AS TO FORM AND LEGALITY
February 16 2023
HYDEE FELDSTEIN SOTO, City Attorney
By _____
Deputy City Attorney

16. **Federal Highway Administration**

Signature Date
Title: Agreement Officer

Box 16 Continued:

_____

Signature
Name:
Title:

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ATTACHMENT(s):

1. Technical Application (50 Pages, dated 08/23/2021)
2. Budget Application (32 Pages, dated 08/23/2021)

SECTION A - AGREEMENT DESCRIPTION

A.1 STATEMENT OF PURPOSE

The Federal Highway Administration (FHWA) enters into this Cooperative Agreement (Agreement) with the Port of Los Angeles (POLA) to develop model deployment sites for large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment. These model deployments are expected to provide benefits in the form of:

- reduced traffic-related fatalities and injuries;
- reduced traffic congestion and improved travel time reliability;
- reduced transportation-related emissions;
- optimized multimodal system performance;
- improved access to transportation alternatives, including for underserved populations;
- public access to real time integrated traffic, transit, and multimodal transportation information to make informed travel decisions;
- cost savings to transportation agencies, businesses, and the traveling public; or
- other benefits to transportation users and the general public.

The purpose of this Agreement is to promote the use of innovative transportation solutions. The deployment of these technologies will provide Congress and the United States Department of Transportation (DOT) with valuable real-life data and feedback to inform future decision making.

A.2 LEGISLATIVE AUTHORITY

Specific statutory authority for conducting this effort is found in the Continuing Appropriations Act, 2021 and Other Extensions Act, Public Law (Pub. L.) 116-159 which extended the surface transportation programs including Section 6004 of the Fixing America's Surface Transportation (FAST) Act (PL. 114-94), which authorizes the Secretary of Transportation to "...establish an advanced transportation and congestion management technologies deployment initiative to provide grants to eligible entities to develop model deployment sites for large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment."

Per Section 6004, funding for this effort is available from amounts authorized under §6002(a)(1), §6002(a)(2), and §6002(a)(4) of Public Law 114-94, the Fixing America's Surface Transportation (FAST) Act.

The authority to enter into a cooperative agreement for this effort is found under 23 U.S.C. §502 - Surface Transportation Research, Development, and Technology, paragraph (b)(3) which states:

> "(3) **cooperation, grants, and contracts.** — The Secretary may carry out research, development, and technology transfer activities related to transportation—

(A) independently;
(B) in cooperation with other Federal departments, agencies, and instrumentalities and Federal laboratories; or
(C) by making grants to, or entering into contracts and cooperative agreements with one or more of the following: the National Academy of Sciences, the American Association of State Highway and Transportation Officials, any Federal laboratory, Federal agency, State agency, authority, association, institution, for-profit or nonprofit corporation, organization, foreign country, or any other person."

Per Section 6004 of the Fixing America's Surface Transportation Act, the Federal share of the cost of a project for which a cooperative agreement is awarded under this subsection shall not exceed 50 percent of the cost of the project.

A.3 BACKGROUND

States and jurisdictions across the country are tackling transportation challenges that often result in congestion and unreliable travel for people and goods, negative impacts on the environment, and reduced safety for users and vehicles. According to the Texas A&M University Transportation Institute, Americans spend on average over 40 hours per person stuck in traffic each year for an annual financial cost of $121 billion. Research indicates that cities account for 67% of all greenhouse gases (GHGs) released into the atmosphere, and the transportation sector is the second-biggest source of GHG emissions, responsible for emitting 28% of GHGs into the atmosphere. There were 32,675 deaths and more than 2.3 million injuries from vehicle crashes in 2014, and there were more than 6.1 million reported motor vehicle crashes. Recognizing that implementing technology solutions can help address transportation safety, mobility, and air quality challenges, section 6004 of the FAST Act established the advanced transportation and congestion management technologies deployment initiative.

Projects funded under this initiative will deploy advanced transportation and congestion management technologies, including:

i. **Advanced traveler information systems** – Systems that provide real time, predicted, and individualized information about travel choices, based on data from sensors (traffic, weather), mobile sources (personal portable devices, connected vehicles), and other information systems (public transportation, shared-use mobility, traffic incident management, construction, parking, congestion pricing/tolls or other costs) to allow travelers and shippers to make informed decisions regarding destinations, when to travel, routes, or modes. This information should be publicly accessible and not limited to users with smart phones.
ii. **Advanced transportation management technologies** – Technologies that assist transportation system operators in managing and controlling the performance of their systems to provide optimal services or respond to dynamic conditions, including interjurisdictional and intermodal coordination; technologies may include traffic signal equipment, advanced data collection and processing (from sensors, connected vehicles and other mobile sources, other information systems), dynamic lane controls/configurations, and cooperative transportation management algorithms including pricing strategies across jurisdictions/agencies/facilities/modes.
iii. **Infrastructure maintenance, monitoring, and condition assessment** – Technologies and systems that monitor the behavior or assess the condition of transportation infrastructure to

allow agencies to better manage their transportation assets through optimizing resource allocation, preventative maintenance processes, and responses to critical conditions.

iv. **Advanced public transportation systems** – Technologies that assist public transportation system operators or other shared mobility entities in managing and optimizing the provision of public transportation and mobility services; technologies may include remote fleet monitoring systems, coordinated communication systems, algorithms, and applications to enable better transit connections for users, advanced data collection and processing (from sensors, mobile/connected sources, other information systems) to provide dynamic responsive transit services, and communication and data systems that enable shared mobility services.

v. **Transportation system performance data collection, analysis, and dissemination systems** – Technologies and systems that actively monitor the performance of and interactions between transportation systems and permit agencies and other interested entities to conduct analyses and research, and explore innovative, value-added products and services.

vi. **Advanced safety systems, including vehicle-to-vehicle and vehicle-to-infrastructure communications, technologies associated with autonomous vehicles, and other collision avoidance technologies, including systems using cellular technology** – Deployment of technology-based safety systems such as described at Safer Car (https://www.nhtsa.gov/campaign/safercargov?redirect-safercar-sitewide) or at the Intelligent Transportation Systems (ITS) Program (https://www.its.dot.gov/index.htm), or other applicable safety technologies.

vii. **Integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems** – Technologies that link information from ITS and other transportation systems with information from Smart Grid and other energy distribution and charging systems to provide users with better information related to opportunities for recharging electric vehicles, and to provide energy distribution agencies with better information related to potential transportation-user demand.

viii. **Electronic pricing and payment systems** – Technologies that permit users to electronically conduct financial transactions for mobility services across jurisdictions and agencies, such as unified fare collection, payment, and tolling systems across transportation modes; or

ix. **Advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals** – Technologies and systems that leverage data and communications systems to allow public agencies and human service organizations to provide improved mobility services to at-risk users such as elderly, disabled, or other individuals that require transportation assistance.

Advanced technologies can also help to revitalize neighborhoods and regions by attracting more business or residential developments to bring opportunities closer to where people live. Technologies also help provide transportation options and improved multimodal transportation systems, allowing users to have access to safe, reliable, and affordable connections to employment, education, healthcare, goods delivery, and other services. As such, technology helps create pathways to jobs and economic opportunity for traditionally disadvantaged populations.

ITS are laying the groundwork for innovative transportation solutions, with many locations currently serving as laboratories for new types of transportation services. Integrating ITS, connected vehicle technologies, automated vehicles, and other advanced technologies within the context of a jurisdiction or region provides enhanced travel experiences and makes moving people and goods safer, more efficient, and more secure. By enhancing the effective management and operation of the transportation system, these solutions can leverage existing infrastructure investments, enhance mobility, sustainability, and

livability for citizens and businesses, and greatly increase the attractiveness and competitiveness of jurisdictions and regions.

A.4 VISION, GOALS, AND FOCUS AREAS

The DOT recognizes that each location has unique attributes, and each location's proposed deployment will be tailored to their vision and goals. Applications may be submitted for deploying any eligible technology. However, this section provides a framework for applicants to consider in the development of a proposed deployment by presenting the DOT's vision, goals, and focus areas.

The DOT's vision for the ATCMTD initiative is the deployment of advanced technologies and related strategies to address issues and challenges in safety, mobility, sustainability, economic vitality, and air quality that are confronted by transportation systems owners and operators. The advanced technologies are integrated into the routine functions of the location or jurisdiction and play a critical role in helping agencies and the public address their challenges. Management systems within transportation and across other sectors (e.g., human services, energy, and logistics) share information and data to communicate between agencies and with the public. These management systems provide benefits by maximizing efficiencies based on the intelligent management of assets and the sharing of information using integrated technology solutions. The advanced technology solutions and the lessons learned from their deployment are used in other locations, scaled in scope and size, to increase successful deployments and provide widespread benefits to the public and agencies

Goals for the advanced transportation and congestion management technologies deployment initiative include:

- Reduced costs and improved return on investments, including through the enhanced use of existing transportation capacity;
- Delivery of environmental benefits that alleviate congestion and streamline traffic flow;
- Measurement and improvement of the operational performance of the applicable transportation networks;
- Reduction in the number and severity of traffic crashes and an increase in driver, passenger, and pedestrian safety;
- Collection, dissemination, and use of real time transportation related information to improve mobility, reduce congestion, and provide for more efficient and accessible transportation, including access to safe, reliable, and affordable connections to employment, education, healthcare, freight facilities, and other services;
- Monitoring transportation assets to improve infrastructure management, reduce maintenance costs, prioritize investment decisions, and ensure a state of good repair;
- Delivery of economic benefits by reducing delays, improving system performance and throughput, and providing for the efficient and reliable movement of people, goods, and services;
- Accelerated deployment of vehicle-to-vehicle, vehicle-to-infrastructure, and automated vehicle applications, and autonomous vehicles and other advanced technologies;
- Integration of advanced technologies into transportation system management and operations;
- Demonstration, quantification, and evaluation of the impact of these advanced technologies, strategies, and applications towards improved safety, efficiency, and sustainable movement of people and goods; and
- Reproducibility of successful systems and services for technology and knowledge transfer to other locations facing similar challenges.

A.5 STATEMENT OF WORK

The Recipient shall execute their proposed work plan as detailed in Attachment 1.

A.6 DELIVERABLES

The Recipient shall provide the deliverables detailed in Attachment 1 and the following items:

*Award date is shown on page 1, Block 17, FHWA signature date.
** FHWA may agree to modify due dates, upon the reasonable request of the POLA

Deliverable	Approximate Due Date	Section 508 Compliant?
Kick-off Meeting Conduct a kick-off meeting with DOT at a mutually-agreed-upon location or format, if remote.	Within 4 weeks after execution of this Agreement.	No
Quarterly Progress Reports Submit progress reports to document activities performed, anticipated activities, and any changes to schedule or anticipated issues.	Quarterly in accordance with Section C.5.B	No
Project Management Plan The Recipient shall submit to FHWA's Agreement Officer's Representative (AOR) for approval a Project Management Plan, which shall include, at a minimum: a) A **Statement of Work**, with a description of **Tasks and Sub-Tasks** by which the project work activities will be organized, executed, and monitored; b) A **Project Schedule** (Gantt Chart or equivalent) displaying begin and end times for each Task and Sub-Task, plus achievement of Project Milestones; c) A description of major **Project Milestones**, including key Reports, start of operations of important systems or subsystems, and other important deliverables or events; d) A **Risk Management Plan,** which includes: identification and assessment and of all known risks, assignment of risk roles and responsibilities, processes for monitoring and controlling risks, and a risk registry; e) A **Staffing** Table, which identifies a single Project Manager, plus project staff and/or consultants that will lead and support each Task (or Sub-Task if appropriate); and f) A **Project Budget**, displaying planned expenditures for each Task, with a further breakdown by Cost Element for each Task, and by the federal share vs. non-federal share.	Within 60 days after execution of this Agreement.	No

Project Evaluation Plan The Recipient shall submit to FHWA's AOR for approval an Evaluation Plan, which shall include, at a minimum: i. Statement of **Project Objectives**; ii. List of **Evaluation Criteria** (e.g. quantitative performance metrics and/or qualitative assessments) tailored to the Project Objectives; iii. Description of **data-collection** procedures tailored to these criteria, which could include, for example, before/after data, surveys, interviews, system-monitoring data, or other data needed to report on achievement of project objectives; and iv. Outline of **Evaluation Report** (1-page, draft list of topics to be addressed).	Within 120 days after execution of this Agreement.	No
Data Management Plan (DMP) The Recipient shall submit to FHWA for approval a DMP that provides a preliminary overview of data that may be collected or created through the project, which shall include, at a minimum: **a) Data description** **b) Data access policies** **c) Data storage and retention approach** The Recipient shall then update the DMP throughout the project with more details on the data that is collected or created, including information on **data rights and standards.** Additional information on DMPs can be found at: https://ntl.bts.gov/ntl/public-access/creating-data-management-plans-extramural-research.	Within 90 days after execution of this Agreement, to be updated throughout the project.	No
Systems Engineering Documents In accordance with 23 CFR 940.11, the Recipient shall submit electronic copies of the milestone Systems Engineering documents applicable to each component of this project, for approval by FHWA's AOR. For all ITS elements funded by the agreement, this shall include, at a minimum: a) Systems Engineering Review Form (SERF); b) Concept of Operations (ConOps); c) Systems Engineering Management Plan (SEMP); d) Other SE documents as deemed necessary by FHWA; e) System Verification Plan; f) System Validation Plan; and g) Results of the system verification and system validation Plans. FHWA approval will be required for the Concept of Operations and the System Engineering Management Plan. Results of the System Verification and System Validation Plans are to be provided to FHWA to verify such plans were followed and the system components have been properly implemented, but FHWA approval of those documents is not required.	As applicable	No

Annual Budget Review and Program Plan Reporting Submit the Annual Budget Review and Program Plan Report. The report should describe: (1) Overview and schedule of tasks, activities, milestones and deliverables for the upcoming year, to include: • the latest deliverables table or project management schedule; and • a discussion of whether the current approved Technical Application attached to the award needs to be updated or not. If an update is warranted, propose the updates. (2) Overview and forecast budget for the upcoming year, including: • a discussion of whether the current approved Budget Application attached to the award needs to be updated or not. If an update is warranted, propose the updates.	60 days prior to the anniversary date of execution of this Agreement, in accordance with C.5.C	No
Report to the Secretary Submit a report to the Secretary that describes: a. Deployment and operational costs of the project compared to the benefits and savings the project provides; and b. How the project has met the original expectations projected in the deployment plan submitted with the application, such as: 1. data on how the project has helped reduce traffic crashes, congestion, costs, and other benefits of the deployed systems; 2. data on the effect of measuring and improving transportation system performance through the deployment of advanced technologies; 3. the effectiveness of providing real time integrated traffic, transit, and multimodal transportation information to the public to make informed travel decisions; and 4. lessons learned and recommendations for future deployment strategies to optimize transportation efficiency and multimodal system performance.	Annually, beginning one year after execution of this Agreement.	Yes
Final Report The Recipient shall provide a final report within 90 days after the termination or expiration of this Agreement. The FHWA AOR in consultation with the Recipient, will determine the final design and scope of the evaluation and report. Submit an electronic copy of all reports to the ATCMTD mailbox at ATCMTD@dot.gov, and to Ryan.Buck@dot.gov, Jim.Garling@dot.gov, Dave.Harris@dot.gov & [AORNAME@dot.gov]	Within 90 days after the termination or expiration of this Agreement	No

Note: Applicable requirements, to include those pertaining to Section 508, are included in the Agreement General Terms and Conditions available online at:
https://www.fhwa.dot.gov/cfo/contractor_recip/gtandc_generaltermsconditions.cfm

SECTION B – AWARD INFORMATION

B.1 TYPE OF AWARD

This award is a cost-reimbursement Cooperative Agreement.

B.2 AVAILABLE FUNDING

The total amount of Federal funding that may be provided under this Agreement is identified on Page 1 of this Agreement in Item 7, for the entire period of performance, subject to the limitations shown below:

a. Currently, Federal funds identified on Page 1 of this Agreement, Items 11 and 14, are obligated to this Agreement. This Agreement is fully funded.
b. The FHWA's liability to make payments to the Recipient is limited to those funds obligated under this Agreement.
c. Costs associated with contingency estimates require prior written approval from FHWA before they are eligible for reimbursement.

B.3 COST SHARING OR MATCHING

Cost sharing or matching is required, with the maximum Federal share being 50%; therefore, a minimum non-federal cost share of 50% is required. The Recipient's cost share value is stated in Block No. 7 on page one of this cooperative agreement. Cost sharing or matching means the portion of project costs not paid by Federal funds. For a more complete definition, please see the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 CFR Part 200, including section §200.306 on Cost Sharing or matching. Other Federal funds may be leveraged for the deployment but cannot be considered as part of the ATCMTD matching funds, unless otherwise authorized by statute.

The Recipient's match can be met through direct financial support or through "in-kind" services. By the completion date of the Agreement, the Recipient must have met the cost-sharing requirement. All cost share contribution must be submitted with sufficient detail and/or documentation to support the fair market value of the contribution. If additional detail and/or documentation are determined necessary in order to verify the contribution, the Recipient will provide the requested information in a timely fashion.

B.4 PERIOD OF PERFORMANCE

The period of performance for this Agreement is delineated on Page 1 in Item 6.

B.5 DEGREE OF FEDERAL INVOLVEMENT

The FHWA anticipates substantial Federal involvement between it and the Recipient during the project. The anticipated Federal involvement will include: technical assistance and guidance to the Recipient; participation in status meetings, including kick off meeting and project reviews; review and comment on draft documents, as appropriate; performance reporting and financial reporting to ensure that the objectives and the terms and conditions of the agreement are met; and monitoring of performance.

SECTION C - AWARD ADMINISTRATION INFORMATION

C.1 FEDERAL AWARD NOTICES

Only the Agreement Officer (AO) can commit the FHWA. The award document, signed by the AO, is the authorizing document. Only the AO can bind the Federal Government to the expenditure of funds.

C.2 GENERAL TERMS AND CONDITIONS

General terms and conditions including payment procedures, compliance requirements for Section 508 of the Rehabilitation Act of 1973 (as amended in 1998), and governing regulations that apply to this Agreement are available online at:

https://www.fhwa.dot.gov/cfo/contractor_recip/gtandc_generaltermsconditions.cfm - Recipient General Terms and Conditions for Assistance awards. Effective date: March 6, 2015.

C.3 STATUTORY AND NATIONAL POLICY REQUIREMENTS

In addition to the FHWA's General Terms and Conditions incorporated by reference in Section C.2, the Recipient is also required to comply with all applicable U.S. Code: Title 23 requirements, Code of Federal Regulations (CFR): Title 23 requirements, and any other applicable statute or regulation.

C.4 ADDITIONAL TERMS AND CONDITIONS

C.4.A PUBLIC ACCESS TO DOCUMENTS

The Recipient agrees that the resulting deliverables/documentation submitted to the FHWA under this Agreement may be posted online for public access and/or shared by FHWA with other interested parties. The FHWA anticipates the documents cited herein may be posted on an FHWA website or another appropriate website.

C.4.B INDIRECT COSTS

Indirect costs are allowable under this Agreement in accordance with the Recipient's Federally Negotiated Indirect Cost Rates as documented in writing and approved by the Recipient's cognizant Government agency. In the absence of such Government-approved indirect rates, the following rates are approved for use under this Agreement as shown below:

Table C.4.B – Indirect Costs

*Type**	*Indirect Rate*	*Period*	*Ceiling Rate (%)*	*Base*
N/A	N/A	Period of Performance	N/A	N/A

*Types of Rates: Pred - Predetermined; Fixed; Final; Prov: (Provisional/billing); or De minimus.

In the event the Recipient determines the need to adjust the above listed rates, the Recipient will notify the AO of the planned adjustment and provide rationale for such adjustment. In the event such adjustment rates have not been audited by a Federal agency, the adjustment of rates must be pre-approved in writing by the AO.

This Indirect Cost provision does not operate to waive the limitations on Federal funding provided in this document. The Recipient's audited final indirect costs are allowable only insofar as they do not cause the Recipient to exceed the total obligated funding.

C.4.C DATA RIGHTS

The Recipient must make available to the FHWA copies of all work developed in performance with this Agreement, including but not limited to software and data. Data rights under this Agreement shall be in accordance with 2 CFR §200.315, Intangible property.

C.4.D PERSONALLY IDENTIFIABLE INFORMATION (PII)

Personally Identifiable Information (PII), as defined in 2 CFR §200.1, will not be requested unless necessary and only with prior written approval of the AO with concurrence from the AOR. PII is defined as any information that can be used to distinguish or trace an individual's identity, either alone or when combined with other personal or identifying information that is linked or linkable to a specific individual. Some information that is considered to be PII is available in public sources such as telephone books, public websites, and university listings. This type of information is considered to be Public PII and includes, for example, first and last name, address, work telephone number, email address, home telephone number, and general educational credentials. The definition of PII is not anchored to any single category of information or technology. Rather, it requires a case-by-case assessment of the specific risk that an individual can be identified. Non-PII can become PII whenever additional information is made publicly available, in any medium and from any source, that, when combined with other available information, could be used to identify an individual.

C.4.E CHANGES

Changes. The Recipient agrees to obtain the prior approval of FHWA for any significant change related to the proposal as required by 2 CFR Part 200 and 2 CFR Part 1201. This includes, but is not limited to:

a) changes in overall project budget which result in a shift of $25,000 or more of the original budget between tasks;
b) any significant revision of the scope, schedule, goals, objectives or tasks of the proposal Scope of Work, or related activities (regardless of whether there is an associated budget revision requiring prior approval); and
c) changes in key personnel, program manager, or prime contractor.

C.4.F KEY PERSONNEL

As noted in C.4.E above, the Recipient must provide notice to the AO of any changes in Key Personnel specified in the award. The notice will provide a Resume of the replacement for such Key Personnel to the individuals noted in section C.5.A below. The following person(s) are/have been identified as Key Personnel:

Table C.4.E -- Key Personnel

Names	Title/Position
Gene Seroka	Executive Director
Michael DiBernardo	Deputy Executive Director
Eric Caris	Director of Cargo Marketing
Chris Chase	Marketing Manager
David Libatique	Deputy Executive Director
Lance Kaneshiro (Wabtec)	Chief Information Officer
Rene Alvarenga (Wabtec)	Senior Product Manager
Brian Hill (Wabtec)	Senior Product & Project Manager
Will Howard (Wabtec)	Senior Product Manager
Shereesh Kundur (Wabtec)	Data Scientist Manager
Kunwar Walia (Wabtec)	Senior User Experience Design Researcher
Colleen Caporal (Wabtec)	Senior User Experience Designer

C.4.G PROGRAM INCOME

Pursuant to 2 CFR §200.307, Program income earned during the Agreement period must be added to the Federal award and used for the purposes and under the conditions of the Federal award, unless otherwise approved by the AO. Program income must not be used to offset the Federal or Recipient contribution to this project.

C.4.H SUBAWARDS AND SUBCONTRACTS

Unless described in the application and funded in the approved award, the Recipient must obtain prior written approval from the AO for the subaward, transfer, or contracting out of any work under this award that exceeds the simplified acquisition threshold established under 2 CFR §200.1. This provision does not apply to the acquisition of supplies, equipment and general support services.

The following subawards and subcontracts are currently approved under this Agreement:

Table C.4.I Approved Subawards and Subcontracts

- **Wabtec Corporation**

Approval of additional subawards or subcontracts under the agreement is contingent upon the Recipient providing a fair and reasonable cost/price determination. Consent to enter into additional subawards or subcontracts will be issued through a formal amendment to the Agreement, or by written notification from

the AO.

C.4.J ORDER OF PRECEDENCE

The Recipient's technical and budget applications are accepted, approved, and incorporated herein as Attachment 1 and Attachment 2. In the event of any conflict between this Agreement document and the Recipient's application, this Agreement document shall prevail.

C.4.K DESIGNATION AS RESEARCH OR NON-RESEARCH AGREEMENT

This Agreement is designated as: *RESEARCH AND DEVELOPMENT*

C.4.L CONFERENCE SUPPORT RESTRICTIONS

The Recipient must obtain written approval from the AOR prior to incurring any costs for conference or meeting support. See the definition of conference as contained in 2 CFR §200.432.

Food and beverage costs are not allowable conference/meeting expenses for reimbursement under this Agreement.

Note: Costs of meals are allowable as a travel per diem expense for individuals on travel status and pursuant to the Travel clause of this Agreement.

C.4.M TRAVEL

Travel costs are allowable in accordance with 2 CFR §200.475 - Travel Costs.

C.4.N AGREEMENT PERFORMANCE REQUIREMENTS SUMMARY

Not Applicable.

C.4.O RESTRICTIONS ON LOBBYING

The Recipient agrees to comply with the requirements of 49 CFR Part 20, New Restrictions on Lobbying. Further, the Recipient agrees to file a certification, and a Disclosure of Lobbying Activities Form (SF LLL) form if required, in accordance with 49 CFR 20.110.

C.4.P DEBARMENT CERTIFICATION

In accordance with 2 C.F.R. Part 1200 and 2 C.F.R. § 180.335 The Recipient certifies to the best of its knowledge and belief that neither it nor any of its principals: (1) are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by and Federal department or agency; (2) have been convicted, or had a civil judgment rendered against it or its principals, within the preceding three years of any of the offenses listed at 2 C.F.R. 180.800(a); (3) are presently indicted for or otherwise criminally or civilly charged by a governmental entity with the commission of any of the offenses listed in 2 C.F.R. 180.800(a); or (4) have had one or more public transactions terminated within the preceding three years for cause of default. In addition, in accordance with 2 C.F.R. §§ 180.435 and 180.445, the Recipient will comply with subpart C of 2 C.F.R. Part 180, will communicate to all lower tier participants of their obligation to comply with subpart C of 2 C.F.R. Part

180, and will ensure that the requirement to comply with subpart C of 2 C.F.R. Part 180 is expressly made a term or condition in any such lower tier transaction.

C.4.Q NON-DISCRIMINATION

The Recipient hereby agrees that, as a condition of receiving any Federal financial assistance under this agreement, it will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d), related nondiscrimination statutes (i.e., 23 U.S.C. § 324, Section 504 of the Rehabilitation Act of 1973 as amended, and the Age Discrimination Act of 1975), and applicable regulatory requirements to the end that no person in the United States shall, on the grounds of race, color, national origin, sex, handicap, or age be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity for which The Recipient receives Federal financial assistance. The specific requirements of the Department of Transportation Civil Rights assurances (required by 49 C.F.R. §§ 21.7 and 27.9) are incorporated in the agreement.

C.4.R DISPUTES

The parties to this Agreement will communicate with one another in good faith and in a timely and cooperative manner when raising issues under this provision. Any dispute, which for the purposes of this provision includes any disagreement or claim, between the FHWA and the Recipient concerning questions of fact or law arising from or in connection with this Agreement and whether or not involving alleged breach of this Agreement, may be raised only under this Disputes provision.

Whenever a dispute arises, the parties will attempt to resolve the issues involved by discussion and mutual agreement as soon as practical. In no event will a dispute which arose more than three months prior to the notification made under the following paragraph of this provision constitute the basis for relief under this article unless FHWA waives this requirement.

Failing resolution by mutual agreement, the aggrieved party will document the dispute by notifying the other party in writing of the relevant facts, identify unresolved issues and specify the clarification or remedy sought. The AO will conduct a review of the matters in dispute and render a decision in writing within 30 calendar days of receipt of such written request. Any decision of the AO is final and binding unless a party, within thirty (30) calendar days from the date of the AO's written decision, requests further review as provided below.

Upon written request to the FHWA Chief Acquisition Officer or designee, made within 30 calendar days after the AO's written decision or upon unavailability of a decision within the stated time frame under the preceding paragraph, the dispute will be further reviewed. This review will be conducted by the Director, Office of Acquisition and Grants Management. Following the review, the Director, Office of Acquisition and Grants Management, will resolve the issues and notify the parties in writing. Such resolution is not subject to further administrative review and to the extent permitted by law, will be administratively final and binding. Nothing in this Agreement is intended to prevent the parties from pursuing disputes in a United States Federal Court of competent jurisdiction.

C.4.S ADDITIONAL REQUIREMENTS

The Recipient agrees to comply with the provisions of 2 CFR Part 200 as adopted by Department of Transportation in accordance with 2 CFR Part 1201, which implements government-wide Federal requirements for grants and agreements with State and local governments. Also, The Recipient agrees to

comply with Environmental Protection Agency guidelines at 40 C.F.R. Part 247, which implements the Resource Conservation and Recovery Act of 1976 and relates to the procurement of recycled products. "The Recipient agrees to comply with the provisions of 23 CFR 771 which prescribes the policies and procedures of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) for implementing the National Environmental Policy Act of 1969 as amended (NEPA) and supplements the NEPA regulation of the Council on Environmental Quality (CEQ), 40 CFR parts 1500 through 1508 (CEQ regulation). Together these regulations set forth all FHWA, FTA, and U.S. DOT requirements under NEPA for the processing of highway and public transportation projects." Additionally, The Recipient agrees to comply with all applicable laws, regulations and FHWA requirements, including, but not limited to 2 C.F.R. Part 1200, 49 C.F.R. Parts 11, 20, 21, 24, 26, 27, 29, & 32, applicable provisions in 23 U.S.C., including 23 U.S.C. 112 (letting of contracts), 23 U.S.C. 113 (payment of prevailing rate of wage) and 313 (Buy America), and 23 C.F.R.

C.5 REPORTING

C.5.A ADDRESS FOR SUBMITTAL OF REPORTS AND DOCUMENTS

The Recipient must submit all required reports and documents electronically, under transmittal letter referencing the Agreement number, to the following address(es) follows:

- **Ryan Buck,** Agreement Specialist at the following email address: Ryan.Buck@dot.gov
- **Jim Garling,** ATCMTD Program Manager at the following email address: Jim.Garling@dot.gov
- **Dave Harris,** ATCMTD Program Manager at the following email address: Dave.Harris@dot.gov
- **Jesse Glazer,** Agreement Officer's Representative at the following email address: Jesse.Glazer@dot.gov

C.5.B QUARTERLY PROGRESS REPORT

The Recipient must submit an electronic copy of the SF-PPR (Performance Progress Reports) to the FHWA staff identified under clause C.5.A on or before the 30th of the month following the calendar quarter being reported. Final PPRs are due 90 days after the end of the Agreement period of performance. The SF-PPR is available online at this link.

Table C.5.B -- Quarterly Progress Report Periods

Calendar quarters are defined as:	Reports due on or before:
1st: January – March	April 30th
2nd: April – June	July 30th
3rd: July – September	October 30th
4th: October – December	January 30th

The quarterly progress report must include the required certification pursuant to 2 CFR §200.415, the SF-PPR cover page and the SF-PPR Block 10 Performance Narrative. The Recipient shall complete the Quarterly Reporting Template, expanding on SF PPR Block 10 as necessary, to include the following information:

a. Work performed for the current quarter;
b. Work planned for the upcoming quarter;
c. Status of all planned procurement activities, proposed procurement schedules, and a list of key procurement milestone dates;

d. Description of any problem encountered or anticipated that will affect the completion of the work within the time and fiscal constraints as set forth in the Agreement, together with recommended solutions to such problems; or, a statement that no problems were encountered;
e. A tabulation, clearly delineated by Federal share, cost share and total, of the current and cumulative costs expended by cost element (labor, travel, indirect costs, sub-recipient/subcontractor, etc.) by quarter versus budgeted costs;
f. Work performed in support of the FHWA and DOT Strategic Goals (see Section A.4 – Vision, Goals, and Focus Areas);
g. Budget revisions; and
h. To the extent practical, the above items shall be organized and presented to correspond with the Tasks, Schedule and Milestones as described in the Project Management Plan defined in Section A6.

In the SF-PPR Block 11, Other Attachments, include the following information as attached pages:

a. SF-425, Federal Financial Report;
b. SF-425A, Federal Financial Report Attachment (if applicable); and
c. SF-LLL, Disclosure of Lobbying Activities

C.5.C ANNUAL BUDGET REVIEW AND PROGRAM PLAN

The Recipient must submit an electronic copy of the Annual Budget Review and Program Plan to the Agreement Officer 60 days prior to the anniversary date of the execution of this Agreement. The Annual Budget Review and Program Plan must provide a detailed schedule of activities, estimate of specific performance objectives, include forecasted expenditures, and schedule of milestones for the upcoming year. If there are no proposed deviations from the Approved Project Budget, the Annual Budget Review must contain a statement stating such. The Recipient must meet via teleconference or web conference with the FHWA to discuss the Annual Budget Review and Program Plan. Work proposed under the Annual Budget Review and Program Plan must not commence until AO's written approval is received.

C.5.D CLOSEOUT OF AGREEMENT FILE

The Government will initiate the administrative closeout of the cooperative agreement after receiving evidence that all technical work and administrative requirements have been completed. The Recipient shall furnish all required documents in support of the closeout of the cooperative agreement within the timeframes requested by the Government. The Government anticipates the timeframe to complete administrative closeout of the cooperative agreement will not exceed six (6) months.

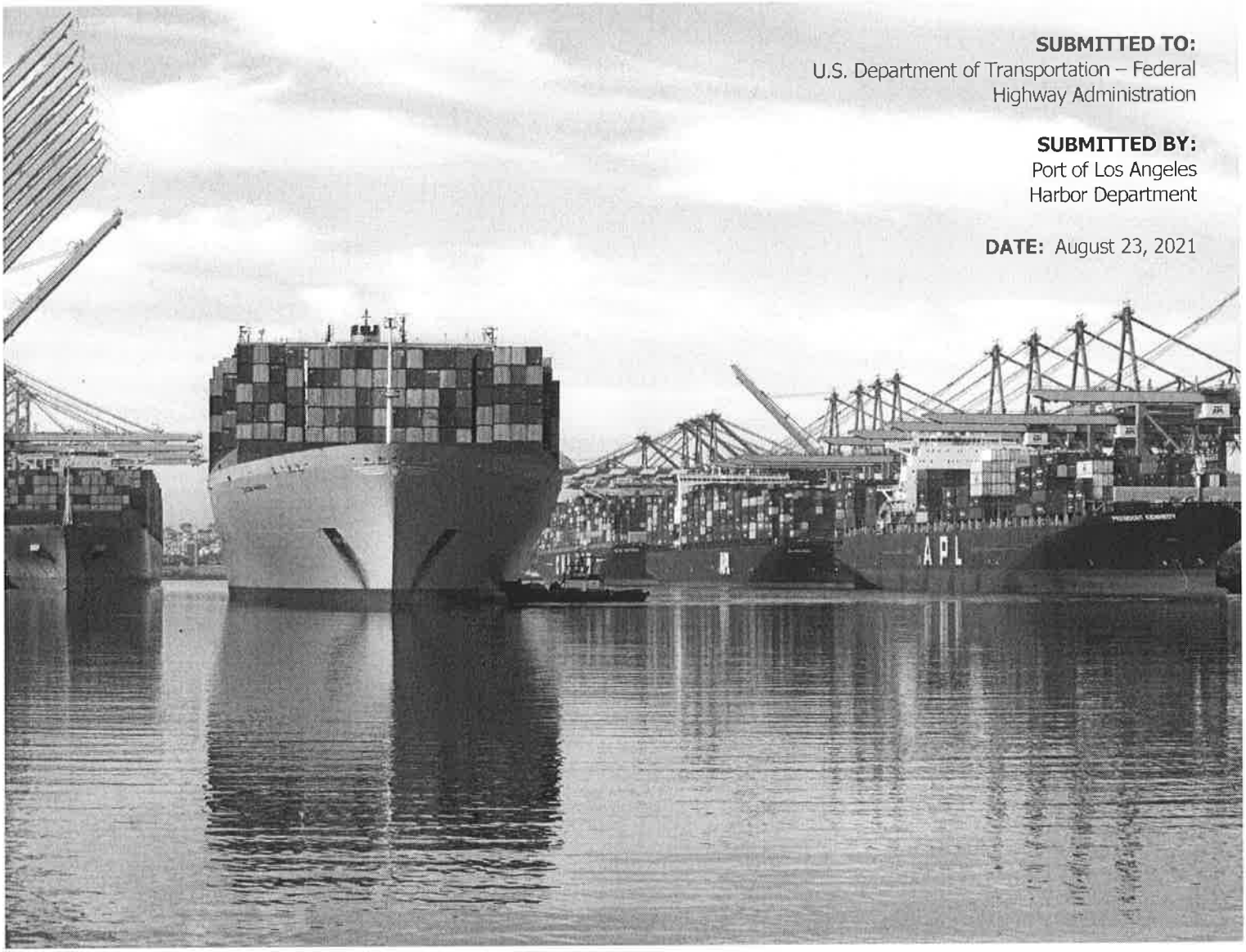
C.5.E UNIQUE ENTITY IDENTIFIER (UEI) AND SYSTEM FOR AWARD MANAGEMENT (SAM)

The Recipient must continue to maintain an active SAM registration with current information at all times during which the Recipient has an active Federal award. Note that effective April 4, 2022, the Data Universal Numbering System (DUNS) number is no longer required for entities doing business with the Federal government and has been replaced by the SAM UEI. The Recipient will need to use a UEI issued during the SAM.gov registration process. Active registrants in SAM.gov have had their SAM UEI automatically assigned and it is currently viewable within SAM.gov; there is no action for registered entities to take at this time to obtain their SAM UEI.

SUBMITTED TO:
U.S. Department of Transportation – Federal Highway Administration

SUBMITTED BY:
Port of Los Angeles
Harbor Department

DATE: August 23, 2021



ATCMTD GRANT APPLICATION – Volume I Technical Application

Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Initiative

Applicant:	The Port of Los Angeles (City of Los Angeles Harbor Department)
Type of Eligible Applicant:	Regional Transportation Planning Agency/Transit Agency
ATCMTD Grant Request:	$6,000,000
Location:	Los Angeles County, CA
Congressional District:	44th – Nanette Barragan, 47th – Alan Lowenthal
NOFO Number:	693JJ321NF00005

Project Name	Port of Los Angeles Gateway
Eligible Entity Applying to Receive Federal Funding	Port of Los Angeles (City of Los Angeles Harbor Department)
Total Project Cost	$6,000,000
ATCMTD Request	$3,000,000
Are matching funds restricted to a specific project component? If so, which one?	No
State(s) in which the project is located	California
Is the project currently programmed in the: • TIP • STIP • MPO Long-Range Transportation Plan • State Long-Range Transportation Plan	No No No Yes: SCAG 2020 Regional Transportation Plan (RTP) and impending 2020 draft Yes: Federally approved California Freight Mobility Plan 2020
Technologies Proposed to be Deployed (briefly list)	Web-based user portal, digital twin, machine learning, artificial intelligence, microservice architecture, internet of things (IOT), API library.
Will the project use connected vehicle technologies? If so, which technologies will be used—for instance, will the project use: • DSRC/5.9 GHz spectrum? • Cellular/4G/5G communications? • Another connectivity technology? (please specify - e.g., "Wi-Fi," "Bluetooth," "RFID," etc.) If the connectivity technology has yet to be determined, please specify "TBD	The project uses RFID, Wi-Fi when needed and Bluetooth to record vehicle entry and exit throughout the port system. This information shall be used to generate the various outputs required by Gateway.
Will the project use automated driving system technologies?	No
Is the project located in a rural area? A rural area is an area not in a Census-designated urbanized area (a Census-designated urban area 50,000 residents or more).	No

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Section II - Project Narrative

1. Project Title

Port of Los Angeles Gateway

2. Project Summary

Implementation of a scalable cloud-based application, using artificial intelligence and cutting-edge modeling to provide breakthrough visibility and actionable insights to port community stakeholders such as truckers, drayage, terminal operators and BCOs. These dashboards are vital in streamlining the scheduling and the staging of cargo and empty returns. The application introduces new means to direct BCOs, truckers and drayage drivers to drastically cut port bound congestion and identify demurrage and detention top drivers.

3. Introduction

The rapid evolution of the supply chain dictates that the industry swiftly pivots its behavior to stay abreast of the freight and cargo demand that lies ahead. The growth of the global population combined with a stronger consumer purchasing power drive congestion and operational complexity. As the transportation industry is set to grow exponentially, it remains volatile and vulnerable to external factors as we have witnessed during the recent Covid-19 pandemic. Transportation industry leaders have the great responsibility to ensure their operations remain sustainable and continue to support the economic growth with which they have been entrusted. To achieve these goals, decision makers need to have data at their disposal and the tools to turn that data into operational insights that can drive better operations. Ports at many major cities are experiencing record levels of traffic congestion at the port and throughout the city leading to the port entry. This congestion is impacting the port productivity, the citizen's quality of life and our environment.

In May 2021, the Port of Los Angeles handled more than 1 million cargo containers in that single month. It is an achievement that continues a months-long streak of record breaking and came on the heels of the nation's busiest port topping 10 million container units in the current fiscal year. Both milestones, said Port of Los Angeles Executive Director Gene Seroka, were firsts for any port in the Western Hemisphere.

The Port of Los Angeles (POLA) has embarked on the journey of battling congestion by being at the forefront of technology, embracing the power of port's employees and stakeholders and implementing digitization within its operations. Port of Los Angeles Port Optimizer™ which has delivered visibility across the port community has been able to share operational insights from points of origin through final delivery of the cargo to the Beneficial Cargo Owner (BCO). Multimodal tracking and tracing delivered transparency and a more connected community by working with supply chain partners to ingest source data, then clean, curate, and stich that data to create a more

connected port community. Building on these scalable investments with the Port Optimizer™, we believe that the next frontier of a Digital Port is providing our community members with a way to understand this baseline operational data in a more meaningful way.

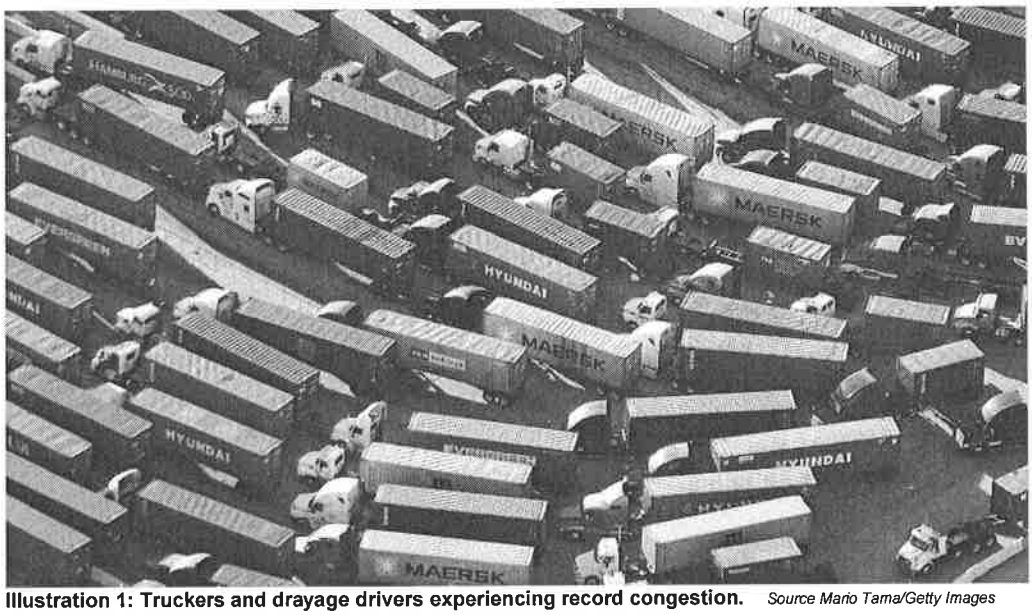

Illustration 1: Truckers and drayage drivers experiencing record congestion. *Source Mario Tama/Getty Images*

The Port of Los Angeles is expanding on its Port Optimizer™ platform and vows to further develop the ways in which operational data can be ingested and consumed by building a breakthrough tool named **Gateway**. This new module will use artificial intelligence and cutting-edge modeling, will share data in ways so that more users can gain insights and value than ever before. Through building a "digital twin" of key elements of the port operations, users will be able to address congestion concerns and model historic or future scenarios that impact the city of Los Angeles and its vicinity. Gateway will offer an application program interface (API) capability so that more approved users can share or pull data directly using the new the system. Like existing Port Optimizer™ applications, Gateway will be cloud hosted and will carry best in class cyber security measures, including having security by design from the very first line of code.

The goals of the project are as follow:

- Deploy technological capabilities in data visualization and artificial intelligence to answer key congestion challenges across the port community system.
- Identify port related operational bottlenecks and blind spots that are causing traffic congestion.
- Provide smart, innovative tools for Marine Terminal Operators (MTO) to schedule and stage cargo and forecast empty returns acceptance to truckers.
- Deploy advanced alert and notification system to trucker and drayage drivers to drastically cut idle and reroute to an alternate mission when required.
- Lay the data foundation to drive effective exception management in order to minimize or avoid detention and demurrage charges.

- Consequently, deploying the above will drive an increase in cargo flow, reduce costs by reducing waste and dwell, reduce traffic congestion, provide a cleaner environment by reducing carbon footprint and improving the quality of life by lessening the congestion.

4. Geographic Scope

On the initial launch, Gateway will be deployed primarily at POLA with the possible expansion to the Port of Long Beach (POLB). Collectively, these comprise the largest goods movement complex in North America handling 40 percent of the nation's import traffic and 25 percent of the nation's export traffic. This freight volume, and the associated truck traffic, is expected to more than double by 2035. Using similar application foundation as Port optimizer ™, Gateway is scalable and modular and can be reproduced at other pots within the state of California and out of state.

The initial phase of the project will be piloted within a single marine terminal operator. Through the design phase, the project will incorporate the feedback of several MTOs so that the utility and operating attributes are readily scalable beyond the pilot, after demonstrating success. With several MTOs expressing interest, the broader affected range of benefit spans the breadth of the operators that touch a marine terminal. These operators may include, but are not be limited to, railroads, truck carriers, beneficial cargo owners, warehouses, traffic planners, dispatchers, upstream manufacturers, distributors, and third-party logistics providers, as well as the ultimate consumers.

Illustration 2: Gateway Geographic scope at launch

5. About the Applicant

The Port of Los Angeles is proposing this project and will administer the project in cooperation with Wabtec Corporation. In addition to POLA's funding contribution, Wabtec has also earmarked Research and Development funding that will be contributed to enhance the project's capabilities and outcomes.

Upon award of this grant, POLA and Wabtec will ingest new data sources, harmonize, stitch, test, and deploy next generation data models and visibility tools to benefit different port community stakeholder groups described using the Gateway platform. POLA will be responsible for the administration of the ATCMTD Grant Funding, and with the help of Wabtec, POLA will work closely with the USDOT on all aspects of project management, including all reporting and other requirements defined in the ATCMTD NOFO.

POLA sees the need to build Gateway project as a critical next step towards benefiting not only operations at the Port of Los Angeles but also to improve efficiency, system performance, and decrease congestion beyond the broader San Pedro Bay Ports Complex.

Through the combined efforts, Wabtec will commit a dedicated staff and investment, and has earmarked $500,000 of internal R&D spending. POLA has assigned a highly capable team of subject matter experts and project management to deliver the next generation of port community tools to reduce congestion and pave the way forward for other port communities to do the same in a scalable and cost effective way.

6. Issues and Challenges Addressed

Since the launch of Port Optimizer™, we have been continuously working to create a single source of clean data to support improved visibility and transparency so that our stakeholders can make better operational choices, reduce dwells and queues, and increase port throughput. These tools have improved the life of the day-to-day users and have made it easier to do business with the Port of Los Angeles. With this data foundation in place we see the next generation of innovation building a more dynamic and resilient supply chain.

From 2017 to 2021, Port Optimizer™ demonstrated the benefits of digitizing maritime shipping data and making it available to cargo owners and supply chain operators through secure, channeled access. With this platform, stakeholders are provided greater line-of-sight and planning capabilities to more effectively service container vessels and supply chain participants.

Combining the data from Port Optimizer™ with additional operational, economic, and environmental data creates a view with resiliency and redundancy because it will highlight areas of delay, interruption, or congestion that can be addressed proactively in the short term and through the appropriate application of investment in the long term. At the Port of Los Angeles, we have been on the front line of impacts associated with liner industry consolidation, chassis divestment, tariffs and retaliatory tariffs, and the COVID-19 pandemic, among other recent supply chain challenges. Altogether, these challenges have generated the need for increased reporting, planning, and

execution that would have been easier and more resilient with a Gateway module. The COVID-19 pandemic, specifically, with its cancelled sailings and ship calls has added an intense level of manual effort to calculate, communicate and navigate the ever changing realities and impacts to our port community and supply chain participants that have never been more critical. The scope of Gateway module addresses these disruptions by incorporating new data sources and data volumes, including the expanded areas of a digital twin, cyber security, and AI analytics.

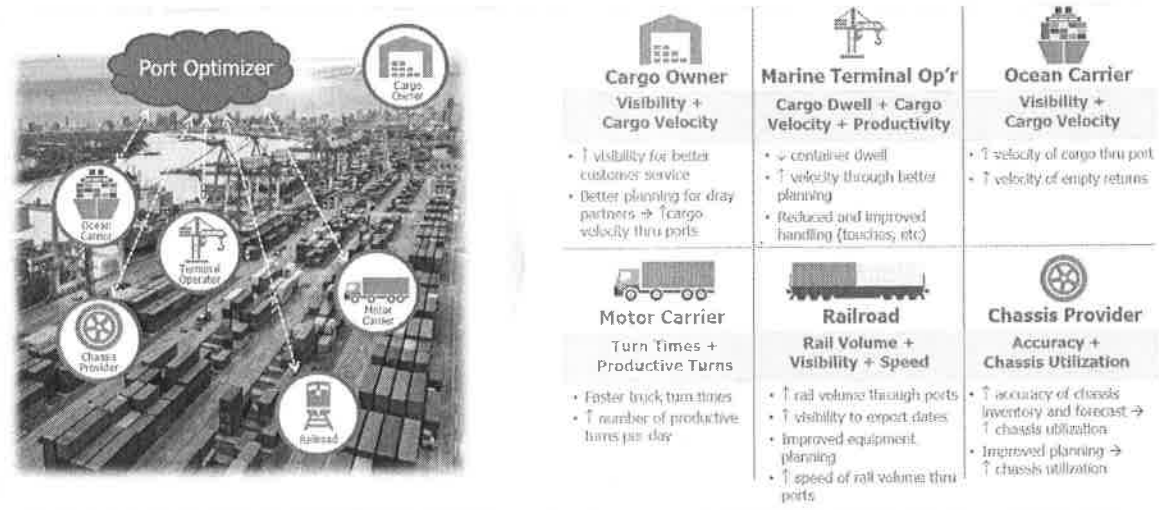

Illustration 3: High level Port Optimizer™ data transmission schematic

Gateway offers immense value to regular port operations by providing ocean carriers, MTOs, BCOs and truckers an enhanced predictive view into how external variables will impact their performance, hence allowing each to adjust and react accordingly. Gateway module will address the unpredictability behind surges in cargo which is driving increased congestion within the port and its vicinity.

To help demonstrate capabilities of Gateway, several mockup screens are built and presented in this Section 6. The mockup screens in this Section 6 are for illustration purpose only. They help provide a view of each of the described module

We highlight the below three main areas that Gateway will target to drastically reduce congestion:

6.1. Advanced Empty Return Manager:

Today, a lack of information about the quantity of empty return acceptance by the terminal operators is hindering the ability for the beneficial cargo owners and truckers to efficiently plan empty return trips. Missing empty return container acceptance attributes such as quantity, size and type is causing uncertainty about the number of empty returns that are accepted in a particular terminal. Furthermore, it is common that an MTO closes the empty acceptance after a truck has been in a queue line for a few hours to return empty container. This causes unproductive trips and preventable wait for trucks that adds to the congestion in the port. Advanced Empty Return Manager will provide the following:

a. Advanced Empty Return Dashboard:

To solve the lack of information about the quantity of empty return acceptance by MTOs, Gateway is building on POLA's Return Signal and will ingest and display in a simple view, timely empty return quotas from shipping lines and terminal operators. This ability to capture the quantity of empty return information from shipping lines, broken down by container quantity, container size and container type being accepted by the terminal operators is presented through an Advanced Empty Return Dashboard and will offer timely visual and report to the port community system. Today, POLA's Return Signal only displays whether an MTO is accepting returns but does not provide detailed information on the estimated quantity by container size and type. An example of Advanced Empty Return Dashboard can be found in Illustration 4.

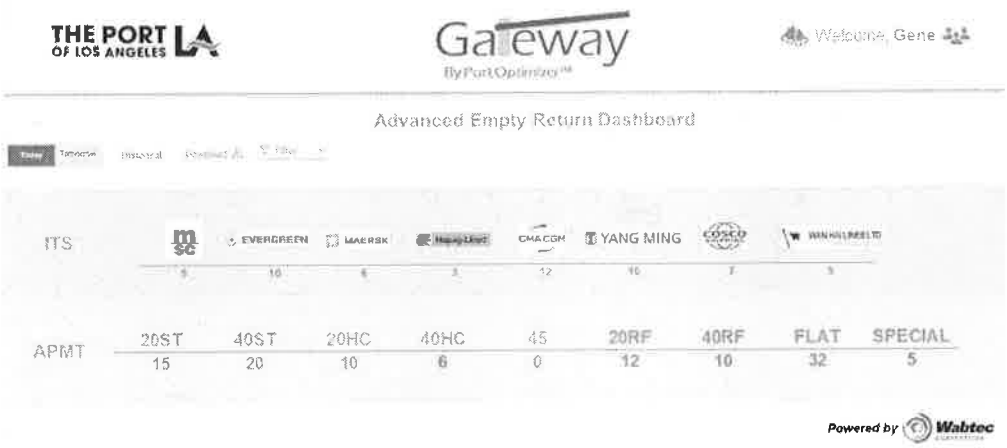

Illustration 4: Advance Empty Return Dashboard System

b. Advanced Empty Return Notification System:

Leveraging on the information provided in Advance Empty Return Dashboard System, Gateway will enable empty return notifications to truckers so they proactively know where and when they can return empties. Should a terminal operator cease accepting a select type of container, a change of status notification will also alert the trucker to either postpone the trip or abort the queue line ahead of time. This information will be based on container details already captured through the shipping line manifest hence it can automatically be applied once a trucker claims a container through Port Optimizer™. An example of Advanced Empty Return Notification System can be found in Illustration 5.

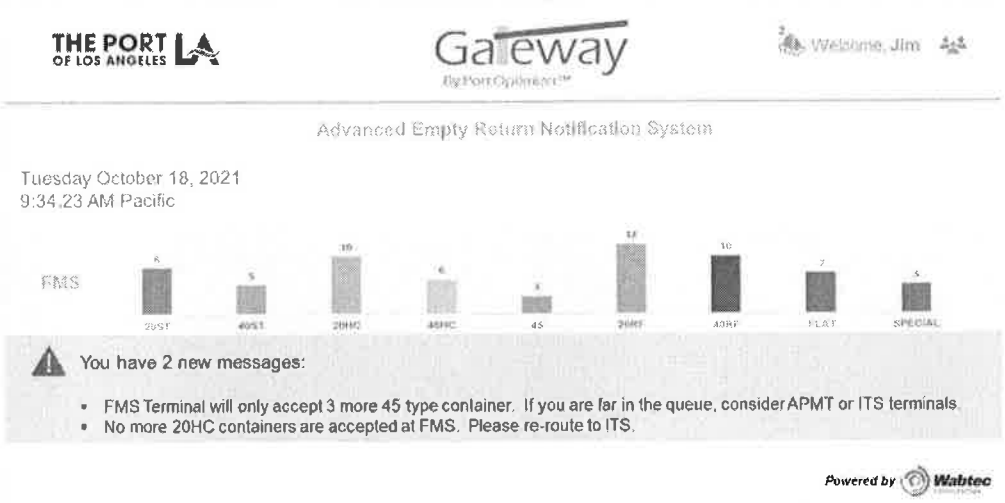

Illustration 5: Advanced Empty Return Notification System

6.2. Cargo Unloading and Pick-Up Advisor:

Today the communication between BCOs, truckers, and MTOs to pick up cargo is disjointed and causes a backlog of truckers waiting to pick up cargo. Unless there is a VIP appointment system in place, that gives terminal operators better visibility on truckers' arrival, many transactions occur on an adhoc basis leaving room for a great opportunity to manage container pick up. The goal of Cargo Unloading and Pick-Up Advisor is to enhance the messaging between Shipping Lines (SL), BCOs, truckers, and MTOs so an early container information (prior to ship arrival) is exchanged with the both BCOs and truckers. In the end and in the same way, BCOs and truckers will provide MTOs, SLs with their planned visits to the port so that the cargo is unloaded and staged in a proper sequence that will enable an efficient pickup by the BCOs and truckers.

Cargo Unloading and Pick-Up Advisor system provides the following:

a. Advanced Beneficial Cargo Owner/Truckers to Terminal Operator Alert System:

The system provides the ability for beneficial cargo owner and truckers to alert terminal operators about when they plan to pick up cargo. This planning system will allow MTOs to better plan and stage the offload and arrangement of containers, specifically the ones that are flagged with urgency. These well staged containers will be strategically released in the yard for faster outgates and loading. Furthermore, as BCOs and truckers optimize their utilization of their trucking asset, MTOs can plan their discharge and yard operations efficiently that aligns with the pick slots of the truckers. An example of Advanced Beneficial Cargo Owner Dashboard System can be found in Illustration 6.

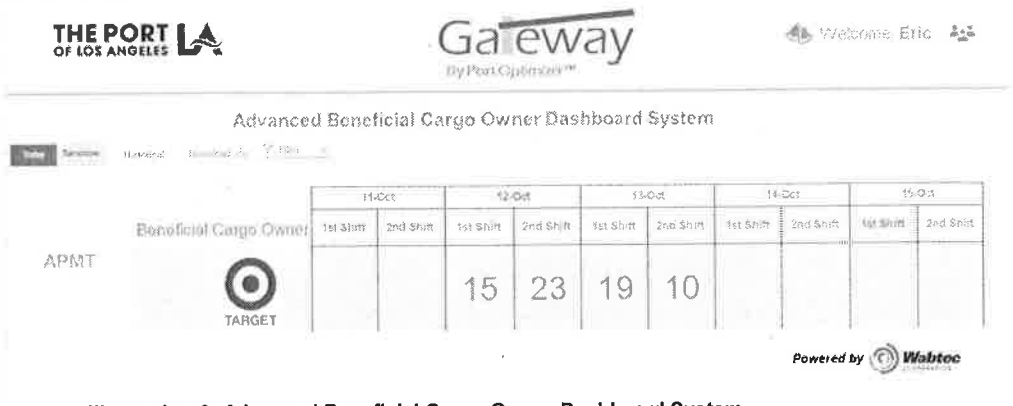

Illustration 6: Advanced Beneficial Cargo Owner Dashboard System

b. Advanced Container Offload Alert System:

As MTOs plan to conduct their offload of containers and based on the input of the Advanced Beneficial Cargo Owner Dashboard, MTOs can now provide visibility into when containers will be available for pick up for the major BCOs. This could present an opportunity to report a greater level of advanced visibility. For example, if a ship is due to arrive on the 2nd shift of Wednesday, MTOs might be able to notify BCOs and trucker that their containers will available on 1st shift Friday. An example of Advanced Container Offload Alert System can be found in Illustration 7.

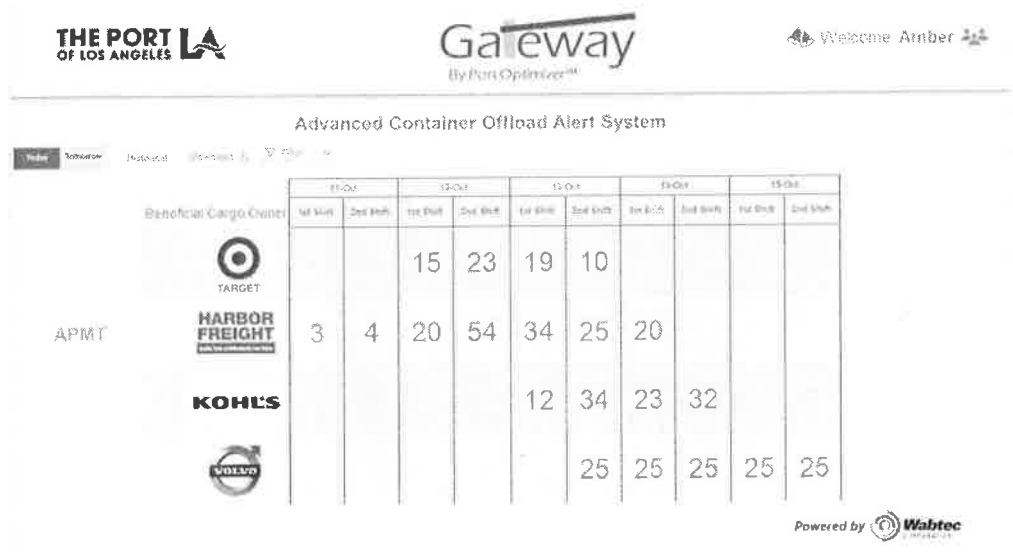

Illustration 7: Advanced Container Offload Alert System

This new level of visibility allows the BCOs and truckers to better plan their resources resulting in less congestion and better turnarounds. The result becomes more impactful when this Advanced Container Offload Alert System is performing in synch with the Advanced Beneficial Cargo Owner Dashboard System described in Section 6.2.a. In the end all the players work together to generate the information that helps produce efficient plans,

stages the optimum cargo offload, and reduces wait time as shown in Illustration 8.

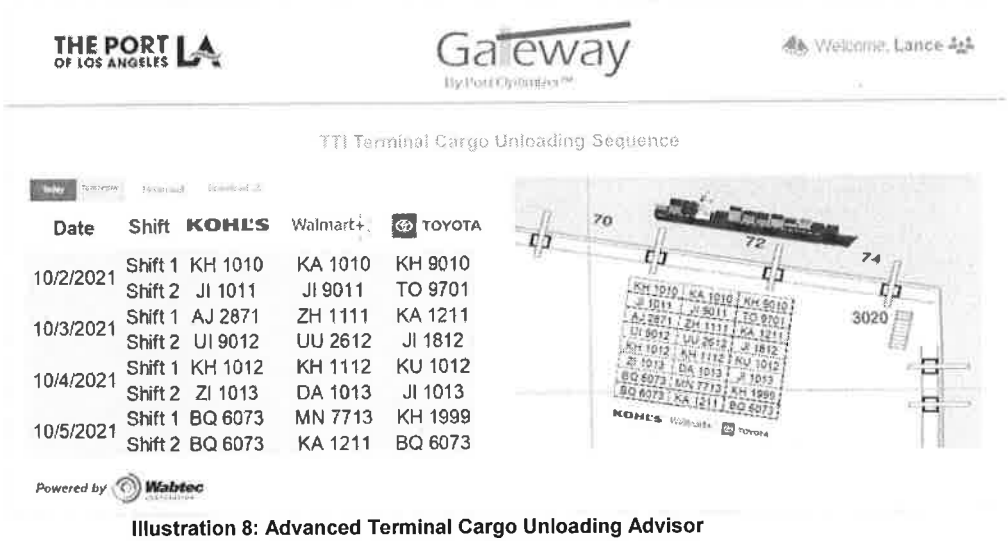

Illustration 8: Advanced Terminal Cargo Unloading Advisor

6.3. Detention and Demurrage Manager:

Detention and demurrage remain a vexing and polarizing issue for our supply chain partners. Leveraging available data on the Port Optimizer™, POLA seeks an industry-led solution that empowers cargo owners with the tools to avoid and manage the risk of detention and demurrage. Ingesting the timely information provided by Gateway modules listed in Sections 6.1 and 6.2, Detention and Demurrage Manager will enable enhanced reporting of how detention and demurrage is occurring at the port.

The information provided by MTOs as presented in Section 6.2 will uncover systemic issues that are leading to demurrage and detention and hence could be addressed through future actions or policies. By better reporting the information within the community (mainly to the port authority and Federal Maritime Commission), there is a higher likelihood that potential solutions could be found. It is noted that this effort will require several mandates of data reporting, not least of which is some visibility of the contractual free time allotted. By providing this level of clarity, Detention and Demurrage Manager will facilitate and enable the following steps:

a. Terminals operators will provide relevant detention and demurrage data.
b. Detention and Demurrage Manager will present the data to BCOs.
c. Detention and Demurrage Manager will generate and send notifications to truckers.
d. MTOs will be able to provide timely chassis and railcar counts.

Finally, by ingesting all the scheduled truck appointments, dispatchers and gate operators can see volume spikes more accurately across the schedule. With the inclusion of traffic congestion (DOT), traffic patterns emerge that may not otherwise

be obvious, and actions can be taken within a specific corridor or terminal. This results in an ability to address congestion at a large scale or the ability for members of the trucker community to select the best appointment window for them (and the system). In this instance, everyone is made better off by reducing congestion, increasing asset utilization, and reducing idling trucks in a queue. Furthermore, as Gateway builds historical data, patterns emerge to address recurring operational bottlenecks. Visibility and predictivity creates an immediate incentive for both trucking companies and MTOs to avoid traffic spikes and deliver a more consistent and fluid operation.

This set of Gateway screens and analytics has the power to communicate and limit congestion before it even occurs; offering better deployment of critical driver's and assets to respond to the country's needs.

7. Data Scoping

During the scoping phase, specific data sources will be selected based upon their availability, quality, and consistency of the data sources. Time sequenced data that can be matched with Port Optimizer™ will be used and data will also be selected based on accuracy, format, and quality. Data sources may be either publicly available or private and in some cases be accessed through subscription. The base level of data that is available today and can be leveraged is shared in the graphic below.

Data Acquisition	Data Transformation	Data Partners
Integrate 60 data feeds across vessel transit data, terminals and trucking communities	Visualize the developed data foundation layer from normalized data and shared directly with reliable APIs	Integrate with 24 systems which include Shipping Lines TMS, MTO TOS, Rail systems and Truck TMS
Vessel Data: • Vessel ETA and Status • EDI Coarri, Codeco, Coparn, Activity, Baplie, IFTSAI, Hazinfo **MTO Data:** • N4 API • EDI Activity and Status • Container/Railcar Availability • Crane Splits and WIs • Container to Railcar mapping **Landside Community Data:** • Rail EDI waybill and Consist • Rail routing • Inland Terminal EDI activity • Truck tracking via ETL	**Data API Services/Offerings** • Vessel Tracking • Container destination • Empty container requests • Booking requests • Train, railcar and container mapping • Container loaded positions • Realtime updates for railcar release at MTO • Rail routing updates • MTO 4185 EDIs or API • Vessel stowage information • Truck Tracking • Truck Delivery Order Tracking	**Shipping Lines** • OOCL • ONE • Maersk / Hamburg Sud • MSC • Yang Ming • Hapag Lloyd • CMA-CGM • Evergreen • Hyundai • Cosco • ZIM • PIL **MTO Systems** • Navis N4 and Express • In house TOS **Other Sources** • Truck TMS providers • POLA Port Authority • Rail data aggregators • Marine Exchange / Marine Traffic • IoT data providers (i.e., Truck ETL)

Table 1: Data Scoping

8. Transportation Systems and Services

Phase 1: The project will start with the baseline of Port Optimizer™ data which provides a single source view 60 different data sets that includes: cargo movements through the port facilities and at each of the many major touchpoints along the supply chain (please refer to Illustration 9*)* Port Optimizer™ achieves this by taking multiple, disparate sources of data and combining them into a single aggregated view that makes it easier for stakeholders to monitor cargo at any step in the process. This eliminates areas in which stakeholders previously lost visibility of their cargo. Port Optimizer™, as a platform, is data agnostic, which means that it can accept data records of multiple types and formats (EDIFACT, API, XLS, Blockchain, etc.). This data then passes through our internal algorithms and is cleaned and sequenced. The

system then identifies and captures anomalous records and outputs it in a consistent format, easily viewed and read by the end-user. These cleaned data records then allow a single user to view all cargo, regardless if the user is using multiple ocean carriers, multiple marine terminals, or multi-modal carriers. The cleaned data sets are accessible via a single screen, eliminating the need for users to visit multiple websites with varying levels of quality and availability.

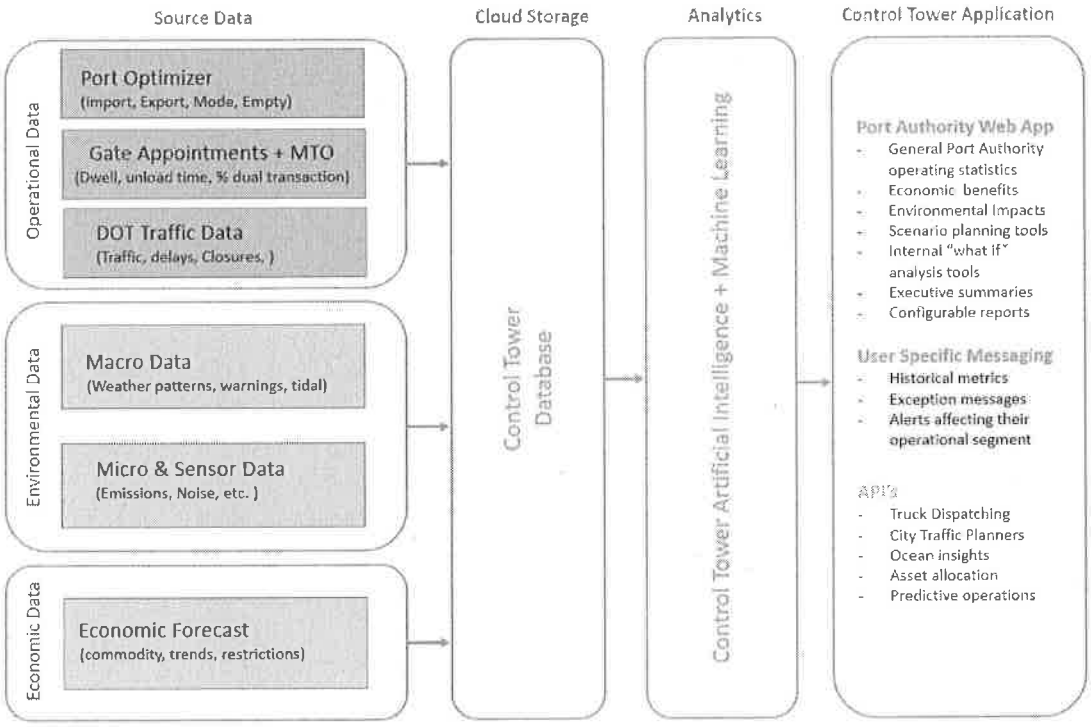

Illustration 9: High-level Architecture

Additionally, since the data is sourced directly from originating providers, Port Optimizer™ can extend the amount of time a user has to make supply chain decisions. Currently, Port Optimizer™ increases the visibility of inbound cargo from an average of 2-3 days to 10-14 days and up to as many as 21 days in advance from origin of departure. This, combined with a more accurate estimated time of arrival, allows for better stakeholder planning whether that is terminal labor, truck and rail equipment, or downstream warehouse/distribution center staffing.

A digital twin, which is a digital replica of the physical environment, will be developed and include Artificial Intelligence (AI) technologies. The digital twin will provide a unified graphical view from the Gateway module that can be used for situational awareness and simulation.

By building Gateway module, we will be able to see what challenges exist on the forecasting window through additional data sets that can include other areas like asset maintenance cycles, asset pool availability, planned corridor or channel maintenance, or other recognizable interruptions. Within the operational phase of

the project, the team will address the data sets that pertain from berth to gate or on dock rail.

Phase 2: Through the inclusion of environmental data sets, Gateway module offers insights into what the prevailing conditions were around operational statistics at a certain point in time, in the past, which enables users to better plan for the similar future scenarios . Gateway module adds in multiple data sets and handles modeling which is beyond human calculation which offers operational gains not captured today.

As an integrated data platform, Gateway module will also be able to capture, ingest, and overlay sensor data and match it to the sequenced operational data in Port Optimizer™ that adds value across all user groups. Some of these sensor groups can capture carbon dioxide (CO2) emissions and noise pollution.

Phase 3: Building from the operational data within Port Optimizer™ with an overlay of the environmental data that adds clarity to some of the cause and effect relationships, the Gateway module will ingest economic data sets to enable better scenario planning for users. Economic reference data will support strategic decision making to include asset allocation, fleet deployment and balancing, growth by commodity, sector, and lane. This will not be proprietary data, but rather publicly accessible or accessible through subscription/license.

One way that this will benefit members of the port community is by helping understand "what if" scenarios" around supply chain events like embargos, stockpiling, seasonality shifts, spikes, and other macro level data that have volume impacts and require operational adjustments across the supply chain.

Key Technical & Operational Features: The Gateway module will be cloud based, making it scalable to other Ports and community members without the burden of large hardware setup costs Gateway module will manage data through a variety of ingestion methods and offer data back through an API store. The application will also be capable of pattern recognition and can notify users if critical events occur through push notifications in several different configurable formats. Machine learning, and Artificial Intelligence will be included within the pilot program.

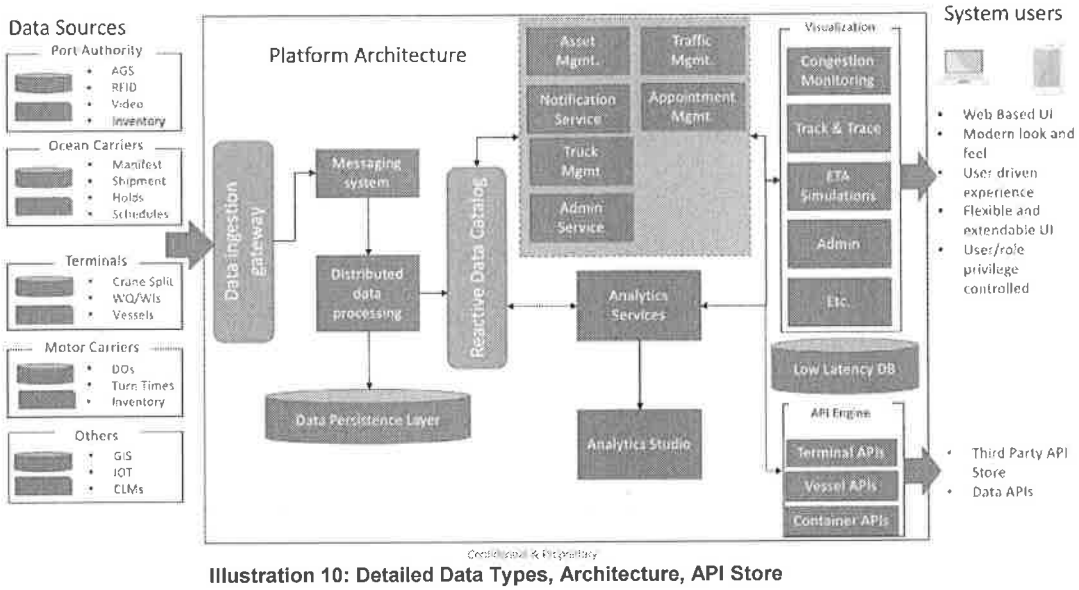

Illustration 10: Detailed Data Types, Architecture, API Store

9. Deployment Vision, Goals, and Objective System Deployment

This grant allows the Port of Los Angeles the ability to leverage our initial investment and learnings to move beyond operational data to areas of correlational data so that our community can better navigate and respond to the volatility and opportunities in our industry. Through the ingestion of three new data areas (environmental, economic, and operational disruption data), coupled with the digital twin and IT technologies, we move to a progressive operational model. Even though this is a stand-alone project, we will apply the fundamentals of the Port Optimizer™ platform and make this a native cloud application that is data agnostic, Gateway module will be able to ingest data in many different formats and link these new data formats and sources to the core operational data found in the Port Optimizer™ Platform. For example, Port Optimizer™ gathers time stamped data from a ship's docking and tracks thousands of cargo movements from that single event across the supply chain. Port Optimizer's strength is that these data sources are not unique to North American ports so the platform can be scaled and extended very easily. Gateway module leverages the Port Optimizer™ Platform and can add both standardized operational data as well as very customized data to be integrated for standard operational improvements and tailored or configured to address key regional needs. For example, POLA leads the nation in measuring environmental parameters and the Gateway module can take the data collected at the San Pedro Bay Ports Air Monitoring Stations and integrate that with the time stamped operational data gathered within Port Optimizer™, mapping and displaying the contextualized view of these key environmental and operational datasets. As a result of leveraging these two technologies, other ports would be able to, in the future tailor the data elements ingested to suit their environmental concerns and needs. For example, the ports in central and southern Florida, may be more interested in wastewater data whereas elemental carbon and particulate matter would be more valuable to the Port of Los Angeles. By building the

tools and interfaces in a way that is data agnostic the outcomes are scalable as the Gateway module is deployed at other ports around the country.

POLA and Wabtec have made great efforts to ensure that the Port Optimizer™ is commercially available to any port in North America as it would create a network effect that can dramatically increase the competitiveness of U.S. exports as well as create greater stability and security across the entire supply chain. Additionally, greater scale spreads future development, enhancement, and support over a larger group of participants and offers compounding benefits of innovation and access.

While Gateway module will be built with the data feeds that are present in the Port of Los Angeles, due to the volume of carriers, number of BCO's, and the selection of ocean carriers the data footprint already overlaps the majority of many other port's entire community, making this effort and investment very scalable across the nation.

10. Project Schedule

Please see below the schedule for the project. There are three distinct sets of work to be done which will be completed sequentially:

- Scope gathering and user experience efforts to recognize how and in what ways the tools will be best utilized.
- Data acquisition to include cleaning and stitching; and
- Application development within each of the submodules.

Each phase will have a feedback cycle loop and at the end of the final development module, we will run and test the full integrated system for an additional 60 days with documentation to follow.

Activity or Milestone	Duration (months)	Completion Date (Months after NTP)
Grant Award	0	0
Phase 1 Kickoff	0.5	1
Discovery Phase	3	3
Data Acquisition and Implementation	3	6
Infrastructure Setup	0.5	8
Software Development Phase 1	3	11
Phase 1 Deployment	1	12
Phase 2 Kickoff	0.5	13
Discovery Phase	3	16
Data Acquisition and Implementation	3	16
Infrastructure Adjustment and Growth	0.5	16
Software Development Phase 2	3	16
Phase 2 Deployment	1	17
Phase 3 Kickoff	0.5	22
Discovery Phase	3	22
Data Acquisition and Implementation	3	22
Infrastructure Adjustment and Growth	0.5	22
Software Development Phase 3	3	23
Phase 3 Deployment	2	24
Commerical Scalability Preparation	0.5	24.5
Shift project into standard support & maintenance mode	0.5	24.5
Maintenance and Support Transition	0.25	25
Project Closure	0.25	25

Table 2: Estimated project schedule

11. Work Plan

A Work Plan has been developed for this Gateway module project. The following summarizes the steps contained in the Work Plan:

Task 1. Establish Stakeholder Advisory Team. Create advisory team consisting of, but not limited to: Port of LA, Port of Long Beach, LA/LB Departments of Transportation, Marine Terminal Operator(s), GEOStamp, Trucking Companies, etc.

Task 2. Refine Data Architecture and Data Sources. Work with stakeholders that will be providing data (GEOStamp, DOT, MTOs, and map and match to enhance the existing Port Optimizer™ data.) confirm available data sets and mitigate any technology limitations for data connection using data science tools.

Task 3. Refine Gateway Functional Requirements; Develop new User Needs and Functional Requirements for user interface, messaging and APIs. Hold

UX Design sessions with all intended user personas, create high fidelity mockups. Hold technical sessions with appropriate IT members from data providers to design API specifications.

Task 4. Complete Application Development and Deployment Planning. The elements of the Gateway overall application and associated user interfaces and back office elements will be developed, integrated, coded, and beta tested at a software-level under this task. This will include implementation of the customized Gateway API design. As part of the integration effort, where applicable, the project team will focus on the necessary information exchange with the companies' existing legacy systems that will ensure that the overall Gateway system can be accessed as seamlessly as possible by the users under their daily business environment. The software will be flexibly designed to integrate with a variety of systems and IT environments, through the use of a cloud-based framework. Additionally, the project team, in consultation with key stakeholders and users, will develop a Deployment Plan, which will carefully outline a phased deployment of the system elements, and plans for user training, system operations, and data collection to support performance measurement.

Task 5. System Testing and Training. The project team will begin system testing of application as it is released to production to look for but User Interface (UI) defects and data accuracy. The project team will monitor and maintain metrics on data accuracy, ensuring stable level of data accuracy for appropriate time to establish confidence in the system. All severity 1 and 2 UI defects will be corrected with timeline set for severity 3 and 4. The project team will then implement a comprehensive training program in which all users of the system will undergo a thorough hands-on training on how to properly use the system. A project team member will be available during the test and deployment periods to assist users in system use, troubleshooting, and follow-up training as requested.

Task 6. Continuous System Performance Evaluation. The project team, in collaborations with key stakeholders and users, will develop key performance goals (and supporting measurement metrics) for the system early on, and will continuously measure actual performance of the system during the deployment phase.

Task 7. Long-Term Operations and Maintenance. As covered in the Introduction, this deployment project will enable Gateway to be scaled beyond the existing Los Angeles small-scale test phase into actual implementation and commercialization.

12. Regulatory, Legislative, and Institutional Deployment Challenges

We foresee no regulatory, legislative, or institutional deployment challenges for this project. As a result of using operational data that is already available through the integration with existing systems, like the Port Optimizer™ , and leveraging data made available through public sources, paid subscriptions, and or our existing partners, we

have mitigated many of the of the institutional deployment challenges. Federal, State, and local governance standards will be adhered to around both privacy and cybersecurity and enhanced through the efforts of the grant.

13. Quantifiable Performance

Due to the scale of the Gateway module and the inclusion of a broad range of port stakeholders, the addressable impacts are significant. The project will be broken down into three sets of quantifiable performance metrics. The first set of metrics will prove the success of the technology stack, system design, and resulting data quality. The second set of metrics will be regarding port community improvements because of having the Gateway module. The third set of metrics will target environment improvement by cutting on carbon emissions.

13.1. Technology Performance Metrics

Gateway module API leveraging direct feeds15 beneficial cargo owners, 2 government agencies, 1 railroad and 2 major truck carriers. The technology performance benefits are:

- Develop statistical baseline of operational data for Gateway module with 8,000 TEUs
- Enhance baseline data for seasonality with 16,000 TEUs through the system
- Ingest 20 data sources
- Deliver 15% application efficiency through targeted applications of artificial intelligence.

13.2. Operational Performance Metrics

- Decrease container dwell time
- Yield efficient turn times
- Increase available truck capacity
- Increase operational data availability
- Decrease in administration's data gathering and report creation by 25%
- Reduction in secondary IT systems and data bases access by 15%

13.3. Environment Improvement Metrics

POLA proposes a measurement calculator such as the one shown in table 3, to calculate the reduction of CO2 by cutting down truck idle and wait time. The measurement calculator uses data from the daily operations in the port along with hardware and equipment specifications such diesel consumption, and truck exhaust emissions. As an example and for illustration, reducing truck dwell by 5 mins yields a reduction in truck fuel consumption by about 0.583M gallons annually which is equivalent to 11.725M pounds of CO2.

Inputs and Assumptions	Value	Source/Rationale
Truck Moves Per Day (POLA)	35,000	Port of LA
# Work Days Per Year	250	5 workdays/week, 10 holidays
Average Turn Time 2022 (min, for illustration)	85	Estimate, Transport Topics
Average Turn Time 2023 (min, for illustration)	80	Estimate, Transport Topics
Turn Time Improvement 2023 (min)	5	Calculation
Idling Truck Fuel Burn (gallons/hour)	0.80	Department of Energy
Idling Truck Fuel Burn (gallons/hour)	0.44	Worktruckonline.com. Argonne Nat Labs. Class 6-7 truck, diesel.
Pounds CO2 produced per gallon of diesel	19.4	EPA: Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel
Pounds CO2 produced per gallon of gas	22.2	EPA: Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel
% Truck Diesel Powered	75%	Estimate
% Trucks Gasoline Powered	25%	Estimate
Average Pounds CO2 produced per gallon	20.1	Calculation

Calculation of 2023 improvement for illustration

Emissions Reduction Per Year	Value	Source/Rationale
Truck Idling Reduction Per Year (Hours)	729,167	Calculation
Fuel Savings Per Year (Gallons) from reduced idling	583,333	Basis: 0.8 fuel burn per hour
CO2 Reduction Per Year (Pounds CO2)	11,725,000	Calculation

Table 3: Environment Improvement Calculator

Additionally, we will require that the initial launch of the system will benchmark initial data for comparison and in an agile manner, we will pursue areas of data set inclusion that have the most significant quantifiable improvements. Other areas of improvement will include but are not limited to increased port wide berth utilization, decreased port wide average container dwell time, faster port wide turn times, and increased port wide average number of truck turns per day.

14. Leveraging Regional Transportation Technology Investments

The data infrastructure that is inherent to the design of Gateway module and the various data sources that show a statistical operational view and give context through economic and environmental data sources leverage regional transportation investments by ingesting data from many of the core systems, cleaning and curating the data and then offering it back as a richer data set. By using Port Optimizer™ as a base product and adding in traffic data from the Los Angeles Metropolitan Transportation Authority (METRO), as well as future data from the various trucking applications that are available, we intend to have a significant value enhancement to our many regional investments and those of our partners.

15. Public Private Partnership

To successfully develop a project of this magnitude, POLA and Wabtec will each contribute some of the matching funds to support the project. This model has proven very successful in the past as it has delivered applications that are scalable and can be commercialized to benefit other ports. Additionally, it decreases the costs of ownership over both the short and long term.

The creation of Gateway module sits adjacent to Port Optimizer™ , which itself is a very successful Public Private Partnership and a strong example of POLA working with a private entity, Wabtec, to develop a solution needed for the community and offering the commercialized version to all other ports. Gateway module will create a

similar public private partnership with future commercial scale that will continue to add functionality, expansion, and use well beyond the term of the grant's funding and project scope.

16. Leveraging USDOT ITS and Technology Programs

Gateway module will leverage data coming from other transportation modernization projects and working with GeoStamp™ as a data partner to include Drayflex visibility and have APIs for direct communication. Additionally, Gateway module will be architected in a manner in which other port community applications, especially those built or scaled through USDOT funds, can have access to data ingestion through API's through the API store.

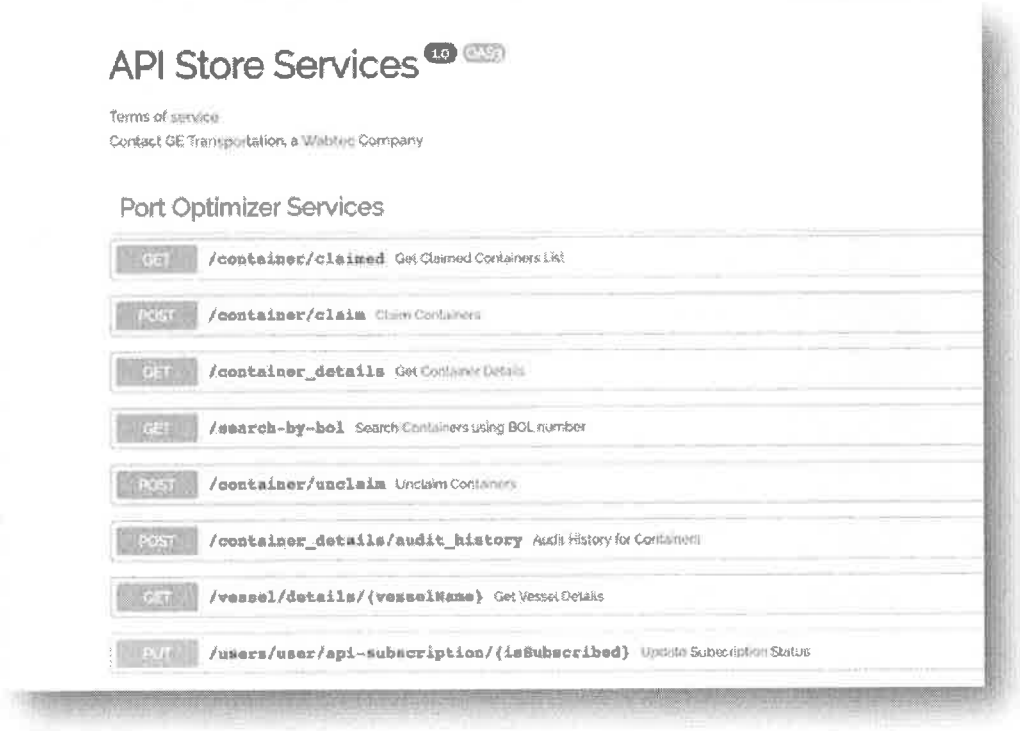

Illustration 11: Port Optimizer™ API Store Services

Developing with future scalability in mind with APIs allows for:

- Users to maintain their current IT infrastructure benefit from the data ingestion and curation available in Gateway module.
- Cost effective data integration and ingestion to push or pull data into the Gateway module as it grows to benefit new users and additional ports without the need for re-architecture and system re-design.
- A far greater return on investment for the USDOT and partners as there is a wealth of readily available data for future mining and data science.

17. Technologies, DOT Goals & Objectives, and Focus Areas

The proposed Gateway module Project meets the selection criteria for the ATCMTD Grand Program. Table 4 summarizes the performance of the project relative to the ATCMTD grant technologies, Department of Transportation goals/objectives, and focus areas.

Technologies	**Implemented/Addressed by Proposal (check all that apply)**
1. Advanced traveler information systems	Yes - Truckers at launch
2. Advanced transportation management technologies	Yes
3 Infrastructure maintenance, monitoring, and condition assessment	Yes
4. Advanced public transportation systems	
5. Transportation system performance data collection, analysis, and dissemination systems	Yes
6. Advanced safety systems, including V2V and V2I communications, technologies associated with automated vehicles, and other collision avoidance technologies, including systems using cellular technology	Not at launch, however this technology will follow under the product roadmap
7. Integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems	Not at launch, however this technology will follow under the product roadmap
8. Electronic pricing and payment systems	
9. Advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals	

ATCMTD Goals	Implemented/Addressed by Proposal (check all that apply)
1. Reduced costs and improved return on investments, including through the enhanced use of existing transportation capacity	Yes
2. Delivery of environmental benefits that alleviate congestion and streamline traffic flow	Yes
3. Measurement and improvement of the operational performance of the applicable transportation networks	Yes
4. Reduction in the number and severity of traffic crashes and an increase in driver, passenger, and pedestrian safety	Reducing congestion will indirectly drive less opporrunity for crashes
5. Collection, dissemination, and use of real time transportation related information to improve mobility, reduce congestion, and provide for more efficient and accessible transportation, including access to safe, reliable, and affordable connections to employment, education, healthcare, freight facilities, and other services	Yes
6. Monitoring transportation assets to improve infrastructure management, reduce maintenance costs, prioritize investment decisions, and ensure a state of good repair	Yes
7. Delivery of economic benefits by reducing delays, improving system performance and throughput, and providing for the efficient and reliable movement of people, goods, and services	Yes
8. Accelerated deployment of V2V, V2I, and technologies associated with automated vehicle applications and other advanced technologies	Not at launch, however this technology is able to utilize V2V, V2I when mature
9. Integration of advanced technologies into transportation system management and operations	Yes
10. Demonstration, quantification, and evaluation of the impact of these advanced technologies, strategies, and applications towards improved safety, efficiency, and sustainable movement of people and goods	Yes
11. Reproducibility of successful systems and services for technology and knowledge transfer to other locations facing similar challenges	Yes
Focus Areas	**Implemented/Addressed by Proposal (check all that apply)**
1. Climate Change and Environmental Justice Impacts	Yes
2. Racial Equity and Barriers to Opportunity	
3. Integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems	
4. Advanced public transportation systems	Yes
5. Freight (or Port) Community Systems	Yes
6. R.O.U.T.E.S.	
7. Complete Trip	

Table 4: Project Summary Table

18. Letters of Support

Included with our application are Letters of Support for the Gateway module project from the Los Angeles County Metropolitan Agency and Congresswoman Nanette Diaz Barragán. These support letters are available in Appendix II of Volume 1 of this application. A Letter of Support for Gateway from Congressman Alan Lowenthal shall be mailed to the DOT on August 24, 2021.

Section III -- Management Structure

POLA is a department of the City of Los Angeles (also known as the Los Angeles Harbor Department) and is governed by the Los Angeles Board of Harbor Commissioners, in accordance with the Public Trust Doctrine to promote maritime, commerce, navigation, fisheries, and public access to the waterfront.

POLA is located in San Pedro Bay and its jurisdiction is limited to the Harbor District, which includes property in San Pedro, Wilmington, and Terminal Island. It rests along 43 miles of waterfront just south of downtown Los Angeles and encompasses 4,200 acres of land and 3,300 acres of water. The Port features both passenger and cargo terminals, including automobile, breakbulk, container, dry and liquid bulk, and warehouse facilities.

A major economic driver at the local, regional, and national levels, the Port of Los Angeles is a key generator of jobs, commerce, and tourism in Southern California. One in nine jobs in the greater Los Angeles region is now connected to the San Pedro Bay Port Complex—which includes the Port of Los Angeles and its neighboring Port of Long Beach (a separate entity and department of the City of Long Beach).

Wabtec, a Fortune 500 company, is an ~$8 Billion enterprise with its Digital Solutions business contributing $1B annually to that total. Wabtec has over 27,000 employees in 50 countries, with a Corporate headquarters in Pittsburgh, Pennsylvania.

Wabtec is accelerating the future of transportation. Combining decades of industrial leadership with cutting-edge data science and analytics acumen, Wabtec is creating an efficient, productive, and reliable digital-rail ecosystem – from shipper to receiver; ports to intermodal terminals; main line locomotives to railcars; and from train yards and operation centers. As a member of the global supply chain Wabtec contributes ~$1B USD annually in supply chain spending across the world, moving cargo through ports and inland railroad networks. As a critical digital infrastructure provider across the supply chain, Wabtec develops software to drive operations in almost all modes of transportation including ocean, rail, and trucks. It is through these efforts to digitize the supply chain that Wabtec also works with some of the most innovative and imaginative minds, through its partnership network, industry thought leaders, and some of the most passionate customers around the globe.

Wabtec is committed to lead clean modes of transportation for passengers and cargo. In June 2021, Wabtec and General Motors signed a memorandum of understanding to advance the two companies' shared vision of a zero-emissions future in transportation. Wabtec will bring its expertise in energy management and systems optimization to develop a solution for the next generation hardware that takes full advantage of GM's advanced technologies.

Together, POLA and Wabtec have experience in building, supporting, and implementation of projects similar to Gateway. The two organizations have worked

together to improve port operations through Port Optimizer™ led by POLA's and Wabtec's leadership team.

POLA Management Team:

Eugene D. Seroka
Executive Director, Port of Los Angeles
Serving as the Chief Executive Officer of the Port of Los Angeles, the Executive Director administers all policies developed by the Los Angeles Board of Harbor Commissioners and provides overall direction regarding the daily operation of the Port. All orders, rules, and regulations adopted by the Board are implemented through the Executive Director.

Marla Bleavins
Deputy Executive Director, Finance and Administration Chief Financial Officer
Second-in-command at the Port of Los Angeles, the deputy executive director of finance and administration also serves as the Port's chief financial officer, overseeing the Port's annual budget and Finance and Administration Bureau, which includes Accounting, Contracts and Purchasing, Debt and Treasury Management, Financial Management, Human Resources, Internal Management Audit, and Risk Management divisions.

Chief Thomas Gazsi
Deputy Executive Director, Chief of Public Safety and Emergency Management
Chief of Los Angeles Port Police
The deputy executive director of public safety and emergency management also serves as chief of Los Angeles Port Police and oversees the Los Angeles Port Police, Los Angeles Pilot Service, and Information Technology division.

Michael DiBernardo
Deputy Executive Director, Marketing and Customer Relations
The deputy executive director of marketing and customer relations oversees the Port's Cargo Marketing, Cargo and Industrial Real Estate, Waterfront and Commercial Real Estate, Environmental Management, Planning and Strategy, and Wharfinger divisions.

Antonio Gioiello
Deputy Executive Director, Development
The deputy executive director of development oversees the Port's Development Group, which includes Construction, Construction and Maintenance, Engineering, and Goods Movement divisions.

David Libatique
Deputy Executive Director, Stakeholder Engagement
The deputy executive director of stakeholder engagement oversees the Port's external communications through the Community Relations, Media Relations, Government

Affairs, Trade Development, and Labor Relations and Workforce Development divisions.

Janna Sidley
General Counsel
As the legal advisor for the Los Angeles Board of Harbor Commissioners and Harbor Department staff, the City of Los Angeles Office of the City Attorney renders legal opinions on laws and ordinances, assists in contract negotiations, represents the Port of Los Angeles in all judicial and legal proceedings, and litigates claims on behalf of the Port of Los Angeles.

Wabtec Management Team:

Rafael Santana, President & Chief Executive Officer

Dave DeNinno, Executive Vice President, General Counsel and Secretary

Pat Dugan, Executive Vice President Finance and Chief Financial Officer

Mike Fetsko, President, Freight and Industrial Components

Rogerio Mendonca, President, Freight Equipment

Eric Gebhardt, Executive Vice President and Chief Technology Officer

Gina Trombley, Executive Vice President of Sales and Marketing, and Chief Commercial Officer – Americas

Nalin Jain, President, Digital Electronics

Lilian Leroux, President, Transit

Greg Sbrocco, Executive Vice President, Global Operations

Pascal Schweitzer, President, Freight Services

Nicole Theophilus, Executive Vice President and Chief Human Resources Officer

19. Staffing Descriptions

The Port of LA and Wabtec will benefit from the experience of the work, technology, and partnership that has successfully launched the Port Optimizer™ over the past four years and will include.

Port of Los Angeles

- Gene Seroka, Executive Director
- Michael DiBernardo, Deputy Executive Director
- Eric Caris, Director of Cargo Marketing
- Chris Chase, Marketing Manager
- David Libatique, Deputy Executive Director
- Lance Kaneshiro, Chief Information Officer

Wabtec Team

- Rene Alvarenga – Senior Product Manager, specializing in marine terminal systems
- Brian Hill -Senior Product & Project Manager, specializing in port and railroad data, operations, systems
- Will Howard -Senior Product Manager, specializing in energy & operational data
- Shereesh Kundur – Data Scientist Manager, focused on data science & enterprise tools
- Kunwar Walia – Senior User Experience Design Researcher
- Colleen Caporal – Senior User Experience Designer

Outlined below is the job functions that is carried out across the development and implementation team to complete this project as designed and scoped.

Product and Project Management Team

Brian Hill and Will Howard are leading the product and project from inception to completion. They will ensure the delivery of a high-quality project within the bounds of the project's statement of work (SOW), on schedule, and within the budget. Brian and Will will oversee and provide leadership to the technical project team members while keeping all critical stakeholders apprised of the project status. They drive well-versed project management methodologies deployed in both data and software projects of this size which command a significant level of subject matter expertise required within the digital supply chain industrial segment to better support the team and interface with users.

UX Research & Design Team

The UX Designer team, Kunwar Walia and Colleen Caporal, will ensure a first-class user experience for people that are using the Gateway. UX Design is critical in translating user needs, style guides, and requirements into an elegant software solution that addresses all of the project goals and objectives. The UX Design team will think not only about meeting requirements, but about how the design choices scale and fit within the larger established platform and exceed user expectations.

Our UX Team have excellent problem identification and solving skills and communicate continuously with the technical project manager and contributing team members.

Data Scientist Manager

Shereesh Kundur – Director of Software Engineering will lead a group of data scientists who will utilize analytical, statistical, and programming skills to collect, analyze, and interpret large datasets. This team has extensive experience in working with a variety of stakeholders and functional teams to uncover data-based insights to deliver improved business outcomes. This team will be critical in developing the Digital Twin and analytical elements of the project, ensuring that the statistical methodologies are sound and scalable.

20. Point of Contact

The primary point of contact for this project is:

David Libatique
Deputy Executive Director
Port of Los Angeles
dlibatique@portla.org
1 (310) 732-3905

Appendix I – Resumés

Please refer to the following Resumés with this grant application:

- *Senior Director Ports_Rene Alvarenga*
- *Senior Product & Project Manager_Brian Hill*
- *Senior Product Manager_William Howard*
- *Senior User Experience Design Researcher_Kunwar Walia*
- *Senior User Experience Designer_Colleen Caporal*

Rene Alvarenga

2149 Eagle Creek Lane • Atlanta, GA 30033 • +1 510-316-5139 • rene.alvarenga00@gmail.com

SUMMARY

Industrial and Systems Engineer, and MBA graduate, with strong and confident leadership and communication skills, specializing in product management, software engineering, digitization and logistics related fields. Cross-functional leader bridging gaps between engineering teams, sales, marketing, professional services and support.

EDUCATION

UNIVERSITY OF FLORIDA — **Gainesville, Florida**
Master in Business Administration (MBA) — *December 2015*
- Concentration: Customer Driven Technologies

GEORGIA INSTITUTE OF TECHNOLOGY — **Atlanta, Georgia**
Industrial and Systems Engineer — *December 2010*
- Concentration: Supply Chain Logistics and Technical Communication

EXPERIENCE

GE Transportation a Wabtec Company — **Atlanta, GA, United States**
Sr. Director Product Management — *Nov 2017 – Present*
- Head of product management for Ports Digital Solution with various products in the supply chain visibility space
- 100 + Engineers and $15M+ yearly revenue
- Responsible for financial, product and software execution decisions for the Ports Digital solutions business. Areas of focus:
  - Finance/Business
    - Ideas and initiative generation, revenue/cost financial modeling and sustainability assessments, budget allocation, return forecasting and value pricing
  - Product Management
    - How to build products that customers love, user experience driven discovery, prototyping and early validation, feature testing techniques, feedback loops and privacy by design
  - Software Execution
    - Dual track agile, scrum teams and engineering talent management; data lakes and data cleansing platforms, integration projects with IoT platforms and use of tracking devices deployed on the edge
- Responsible for the strategy, roadmap, and feature definition of all products in the Ports Digital solutions business
- Analyzing market and competitive conditions to lay out a product vision that is differentiated and delivers unique value based on customer demands for various company products
- Responsible for the successful deployment of products at container ports, intermodal yards, the trucking community, on dock railroads, and other stakeholders at Port communities

Navis LLC, Part of Cargotec Corporation — **Oakland, CA, United States**
Product Manager — *Jun 2015 – Feb 2017*
Senior Product Manager — *Feb 2017 – Nov 2017*

Passionate about releasing quick and often with confidence and managing products in the general automation space which include:
- Autonomous vehicles and Autonomous stacking cranes
- Multiple Systems integration for equipment automation
- General logistics and transportation equipment automation
- IoT devices and asset tracking

Implemented dual track agile methodology for data driven products that focus on automation in logistics and supply chain. Areas of focus:
- Discovery Activities:
  - Discovery process for new features, Lean Canvas and creating and refining User Stories
- Working with customers to refine ideas by doing:
  - Concierge Tests and user prototyping, A/B Testing, Heavily focused on data collection and visualization
- Setting up coordinated objectives (OKRs) for engineering teams, these product metrics are usually driven by:
  - Vanity vs Impact, Leading vs Lagging, Correlated vs Casual

Day to day responsibilities:

- Establish product goals and map them to initiatives
- Plan for sprints, releases and manage dependencies
- Crowd-source ideas
- Defining features and requirements based on customer visits, onsite deployments, interviews and production support
- Constructing detailed user stories and participating in scrum team meetings
- Release management
- Go-to-resource for engineering
- Sales and support training
- Competitive differentiation
- Positioning and messaging
- Naming and branding
- Customer communication
- Product launches

"The job of the product manager is to discover a product that is valuable, usable and feasible"
Cagan, Marty. "Inspired: How to Create Products Customers Love". Sunnyvale, CA: SVPG, 2008. Print.

Navis LLC, Part of Cargotec Corporation **Oakland, CA, United States**
Project and Product Consultant *June 2011 – May 2015*

- Process analysis and resource optimization at container terminals and intermodal facilities
- Robust supply chain systems optimization and scheduling
- Decking Planning and optimization based on IoT data and devices
- Strategic analysis of container terminal planning and intermodal logistics
- Project implementation orientation and analysis design and business processes analysis
- Process adaptation to the company's products, which include building documentation and test system configurations
- Super user training in Spanish, English and Portuguese
- Configured and tested the integration of various technologies
- Extensive international travelling and have worked at 23 different container terminals so far

World Food Programme, United Nations **Rome, Italy**
Procurement and Delivery Products Intern / Central American Crisis Response *June 2010 – June 2011*

- Designed a monitoring tool to assist in the logistics related to a Protracted Relief and Recovery Operation (PRRO)
- Assisted and monitored the logistics of a Protracted Relief and Recovery Operation (PRRO) with the following objectives:
  - Protect the livelihood of people affected by tropical storms in Central America
  - Deliver more than 15,000 tons of food to more than 100,000 people in danger of chronic malnutrition and starvation
  - Identify areas prone to natural disasters in Central America

Senior Design - Product Manager Intern / East African Corridor Optimization *August 2009 – June 2010*

- Created a tool that allows the World Food Programme (WFP) to better plan for future shipments that are bound for 10 Countries in East Africa
- Developed a visual representation of WFP's transportation network to increase visibility of their supply chain and to allow UN logisticians to view their cargo, as it flows through their network
- Developed a prototype to optimize the delivery or cargo through a Network which had the following objectives:
  - Determine the best routes to deliver Cargo in a network
  - Determine the best times to deliver the Cargo in these routes
  - Determine the cargo quantities to deliver per cycle

SKILLS

Languages: English, Spanish and Portuguese – Fluent
Programming Skills: Java, Groovy, C#
Activities: Skiing, Horseback riding, 5K/10K international runner and CrossFit

BRIAN THOMAS HILL

4525 Cottendale Drive, Durham, NC 27703 ♦ (919) 622-1553 ♦ BrianHill@outlook.com

RELEVANT EXPERTISE

Logistics | Rail Operations | Ocean Supply Chain | Electronic Data Interchange | Customer Experience
Software Requirements Development | Analytics/Visualization | Commercial Mindset | Agile Development

PROFESSIONAL EXPERIENCE

GE Transportation, A Wabtec Company 11/16 – Present
Sr. Product Manager
Responsible for client relationship building, account setup, and up-front implementation of contracted technical and service delivery solutions, to achieve specified performance and financial objectives for the Port of Los Angeles/Port Optimization team ($15M+ engagement). Engage customers at executive/mid-level and technical levels and internally with software engineering and development leads to outline the project deliverables, cost/revenue forecast and execution strategy.

- Provide vision, strategy, oversight, and holistic systems integration product management for the complete customer-level account
- Oversee client relationship building, account/ financial setup, and up-front implementation of contracted technical and service delivery solutions to achieve specified performance and financial objectives
- Manage the completion and subsequent execution of the Digital program plan and am accountable for program cost, schedule, and delivery quality
- Work with multiple GET/Wabtec delivery teams, outside partners, offshore teams, and subcontractors to establish and manage an effective Program team
- Own regular and timely communication with all GET/Wabtec and client stakeholders on the status of all Digital programs. Responsible for defining and managing requirements and roadmap schedule deliver for a portfolio of products, and be the product contract execution expert

Railinc 02/16 – 11/16
Manager, Commercial Business Solutions
Specialize in commercial sales of rail operational data, software and business analytic solutions aimed at North American railroads, shippers, rail equipment owners, freight forwarders and 3PLs. Regularly deliver executive-level sales presentations, creating proposals, and collaborating with leadership to develop new business and marketing strategies.

- Through ongoing customer interaction, develop an understanding of the customer's specific business needs, product capabilities/requirements, pricing sensitivities, competitive options and service requirements.
- Work with product management, new product development, industry relations, and solution engineering to identify, design sales plans, and execute targeted marketing actions.
- Responsible for identifying potential product extensions/enhancements for Commercial Product teams by leveraging innovation, delivering revenue growth, enhancing customer experience, and providing value added solutions.

Railinc 09/12 – 02/16
Manager, Rail Data Product Support
Responsible for tactical definition and management of data and software product support needs and relative policies, objectives and initiatives. Lead team of support staff supporting $25MM transactional data and software product portfolio.

- Drive customer satisfaction and meet needs while aligning with Railinc core competencies and strategic vision.
- Increased average Customer Satisfaction scores by 10% YoY, achieving CSAT score of 97% in 2015.
- Reduced average monthly support case queue by 68% through:

- Ability to translate customer and support staff need into software development opportunities and requirements
- Deeper understanding of rail data and customers relative need
- Establishing customer needs proactively, during time of relationship establishment, versus reactionary

- Improved support case time-to-close (TTC) metric by 44% by willingly working with customer, commercial leaders, and development team in a "do whatever it takes" fashion.
- Oversee existing and new work with assigned accounts. Main liaison to multiple large Commercial customer accounts. Resolving all issues to ensure customer satisfaction.

MarketSource, Inc. (Contracting with IBM) 04/11 – 09/12

Program Manager

Responsible for a team of 39 contract employees supporting the IBM.com online commerce and marketing group.

- Daily operations include:
  - Overseeing marketing teams who work directly with IBM.com sales representatives to facilitate online sales, including site creation, content development and social networking.
  - Maintaining 100+ custom web portals within corporate design standards, while supporting multiple Web Consultants and maintaining 99%+ customer satisfaction.
  - B2B/eCommerce consultants, including maintenance of IBM internal sales data, forecasting and reporting. Team is responsible for $2.5B in annualized revenue.
  - Bi-Weekly meetings with IBM management team focusing on workflow, strategy and forecasting.
- All HR functions including annual reviews, goal planning and training, hiring, corrective actions and other day-to-day employee needs.
- Manage P&L valued at $4M, including:
  - Annual budgeting for entire team, including salary and bonus planning, travel, incidental expenses.
  - Monthly and quarterly forecasting for annual revenue projections, including profit and margin.
  - Increased revenue for FY11 by 50% through solicitation of new business and improving existing relationships.

MarketSource, Inc. (Contracting with IBM) 03/04 – 09/12

Web Production Lead/ Web Designer

Work closely with the IBM Sales team to design and manage over 250 custom portals, created for IBM's many Large Enterprise customers.

- Interface regularly with customers for requirement gathering, quality assurance testing and training/walk-through of new features.
- Customer satisfaction scores of 99%+ for 2 consecutive years with 100% on-time delivery of projects.
- Facilitate the creation and design of online marketing collateral for IBM business partner use, including management of online development environment.

Nortel Networks 09/99 – 04/04

Web Developer/Internationalization

Development of nortelnetworks.com, including coding, review, and support. Was directly responsible for internationalization efforts of main external website.

- Act as team lead for all of EMEA as well as back-up for other Nortel regions. Maintain strong relationships with both clients and vendors through project management role.
- Implementation of globalization policy for NortelNetworks.com including co-development of operational standards, technical specifications, and enforcement of policy.
- Extensive project management skills, including maintaining client and vendor relationships

TECHNICAL SKILLS

HTML, AWS, CSS, SQL, SAS, AHA, InVision, AdobeXD, Tableau, SalesForce, Rally

EDUCATION

Bachelor of Science in Communication – East Carolina University, Greenville, NC

WILLIAM J. HOWARD

❒ Atlanta, GA ❒ will.howard@wabtec.com ❒ linkedin.com/in/wjhoward97 ❒ (470) 401-8174

PRINCIPAL PRODUCT MANAGER

Proven ability to lead large diverse functional teams geographically dispersed and across business units. Extensive time spent working with customers: understanding, designing and prioritizing requirements. Diverse knowledge base including engineering, marketing, software, business development and product management.

PROFESSIONAL EXPERIENCE

GENERAL ELECTRIC (GE) – ATLANTA, GA — 2011 – PRESENT

PRINCIPAL PRODUCT MANAGER (2013-PRESENT)

Establishing product management best practices in newly formed team in GE Transport Logistics. Previously responsible for product portfolio in Power Digital Solutions, which generated approximately $100 million in revenue and $20 million in productivity. Create product roadmaps and investment business cases for new development. Work closely with customers, engineering, and operations to deliver world class solutions.

HIGHLIGHTS:

- Responsible for Port Optimizer Track & Trace product – focused on Drayage and Cargo Owners
- Established partnership with Apple and launched multiple mobile applications leveraging AR and AI.
- PowerGen Advisory Board member; presented at global conferences and published in industry journals.

LEAD BUSINESS ANALYST (2011-2012)

Oversaw business and product development, understanding the voice of the customer, and translating business needs into technical user stories for developers. Presented a project's business case to executive management before development.

HIGHLIGHTS:

- Selected to be a member of the GE Energy Innovation Council and lead site innovation team.
- Played an essential role in expanding the business by securing two separate multi-year contracts.
- Received multiple awards across various projects, including a multi-business unit initiative.

FLOWSERVE, INC. (FLS) – NORFOLK, VA — 2007 – 2011

PROJECT MANAGEMENT SUPERVISOR (2008-2011)

Managed nine Project Engineers who were responsible for all OE customer purchase orders. Communicated with upper level management on current status of department and key projects. Spoke with customers to discuss concerns with orders. Worked with other department managers to improve business processes and reduce overall lead time.

HIGHLIGHTS:

- Improved my department processes resulting in approximately 30% reduction yr. /yr. in warranty claims related to Project Management errors.
- Trained team on water resources market segment resulting in approximately a 40% increase in sales.

PROJECT ENGINEER (2007-2008)

Was responsible for three pump product lines. Communicated with suppliers to resolve issues regarding the manufacturing and machining of pump components. Maintained the logic and rule sets for the Flowserve pump selection software.

HIGHLIGHTS:

- Had the lowest cycle time for managing engineering requests by implementing new processes.
- Was selected to participate in many kaizen events resulting in improvements throughout the facility.

CONTINUED ...

PROFESSIONAL EXPERIENCE - CONTINUED

APPLIED MANAGEMENT ENGINEERING - VIRGINIA BEACH, VA 2006 – 2007

PROJECT ENGINEER (2006-2007)

Performed onsite inspections of HVAC, electrical, and plumbing systems for buildings and site utilities. Generated estimates using RS Means for maintenance and component renewal cost over extended periods for facilities budgeting.

HIGHLIGHTS:

- Represented AME at the Southeastern Regional Association of Physical Plant Administrators 2006 conference at Duke University.
- Helped design and develop internal software to improve accuracy and speed of data collection and transfer.

UNITED STATES NAVY - NORFOLK, VA 1997 – 2005

NUCLEAR MACHINIST MATE (1997-2005)

Supervised personnel on essential jobs, maintaining quality controls. Planned and implemented key preventive maintenance on nuclear reactors and supporting systems, including turbine generators, pumps, and heat exchangers. Responsible for troubleshooting and making emergency repairs on mechanical equipment on a shortened timetable. Documented and made reports on maintenance and repairs completed.

HIGHLIGHTS:

- Received various decorations including: National Defense Service Medal, NATO Medal, Navy Unit Commendation, Armed Forces Expeditionary Medal, Sea Service Deployment Ribbon, Good Conduct Medal and Kosovo Campaign Medal.
- Received Crew Award at Naval Nuclear Prototype where I was first in class to fully qualify.

EDUCATION

OLD DOMINION UNIVERSITY, NORFOLK, VA
Masters in Engineering Management

OLD DOMINION UNIVERSITY, NORFOLK, VA
Bachelor of Science in Mechanical Engineering Technology

UNITED STATES NAVY, CHARLESTON SC
Naval Nuclear Power School/Prototype

TRAINING / CERTIFICATIONS

Product Management - Silicon Valley Product Group, 2018
Certified Product Owner – Scrum Alliance, 2016
Certified ScrumMaster – Scrum Alliance, 2016
Management Development Course – Crotonville, GE, 2014
Leadership Development Course - Crotonville, GE, 2013
Green Belt Six Sigma Certification - GE, 2012
Lean Startup Methods Training - GE, 2011
Black Belt Six Sigma Training / Green Belt Six Sigma Certification - FLS, 2010
Board Certification, **E.I.T.** - Virginia Board of Engineers, Architects and Surveyors, 2004

Kunwar Walia

Design Research | Strategy

https://transportationux.com/
kunwar.walia@wabtec.com
+1 404-889-1094

I am a Sr. UX Design Researcher at GE Transportation, a Wabtec Company in Atlanta. Projects and responsibilities undertaken demonstrates my ability to conduct human centered research, synthesizing research insights, building design strategies to formulate business opportunities for respective stakeholders. My experience in working with various transportation fields and degree in transportation systems allows me to critically evaluate various transport ecosystem to innovative opportunities, build roadmap to meet business needs. I advocate research driven practices and evangelize lean or agile framework for the teams to executes research insights and formulate potential design opportunities.

Experience

Sr. UX Design Researcher | Oct'18 – Now
GE Transportation (Wabtec Company), Atlanta, US
Lead research to develop web-based application to provide ocean visibility and data analytics for various stakeholders in the maritime supply chain.

Design Researcher | Apr – Oct'18
Denso Ten America Ltd, Torrance, California, US
UX research, conducted organizational design workshops.
Built a STEEEP based strategic road maps for future in-car multimedia products and services.

User Experience Researcher/Strategist | May'16 – Apr'17
Graduate Thesis, Art Center College of Design
Researched and developed an Appointment System for the Port of LA and trucking companies.

Design Research Associate | Nov'12 – Feb'14
Industrial Design Center, Mumbai, India
Research and development of city bus design, developed use cases to define interior experiences for the daily commuters in a city bus. Lighting design, light therapy equipment for acne treatment.

Education

Master of Science | Sep'14 – Apr'17
ArtCenter College of Design, Pasadena, US
Transportation Systems and Design

Master in Design | July'10 – May'12
Indian Institute of Technology Guwahati, India
Industrial Design

Bachelor of Technology | July'05 – June'09
Institute of Engineering and Technology Bhaddal, India
Mechanical Engineering

Honors & Achievements

Specialized Port Vehicle
West Basin Container Terminal,
Port of Los Angeles, California, US

Light Weight City Bus Design
Automotive Research Association of India
Pune, Maharashtra, India

Skills

Research & Strategy
Field studies
Stakeholder interview
Focused group study
Affinity analysis
Evaluative research
Personas
Journey maps
Survey
Usability testing
UX Workshops
Value proposition canvas
Lean business canvas
Quality control story
Root cause analysis
Agile development
Sprint planning
Strategic roadmaps
Service blueprints

Software

Adobe creative suit
Microsoft office 365
Sketch
Balsamiq
InVision
Usertesting
Qualtrics
Miro
Rally
Solidworks
Rhino

Highly creative, motivated individual who thinks outside of the box with excellent problem solving skills who can see a project through from conception to actualization-- outgoing and willing to put that extra effort in to create and achieve an end goal.

EXPERIENCES

Senior UI/UX Visual Designer

Responsible for defining the visual interface design for VMware's Enterprise digital interactive products within the Workspace ONE platform. Worked closely with cross-functional teams to assess product requirements, creating screen designs based on information design models that translated into user-interface interaction documentation that promote ease of use and positive user experience within Enterprise technology systems.

Mobile Web & Native Applications UI Designer

Create, execute, prototype, and design graphic assets and interfaces for mobile web/ native applications for Android, iOS and Windows 8 mobile devices for a 500 million dollar plus revenue channel. Helped garner and redesign IHG mobile from Priority Rewards Club to IHG Rewards program. Streamlined a the mobile booking experience that aided in a million dollar plus month over month profit increase.

Visual Designer-UI/UX

Create, execute, and design graphic assets and interfaces for mobile publishing applications for Android, iOS, webOS, and Blackberry devices. Utilized style guides to translate partners branding to the mobile OS platform. Develop prototypes and UI delieverables, such as wireframes, flowcharts, screen mock-ups, and interface design specifications. Assist with walk-throughs and usuablity testing. update UI changing needs and requirements. Maintain company's graphical database of assets for best pratices, procedures, and style guide.

Design Assistant

Maintained various databases, which included records of student work used for festival and art show submissions. Worked with the Department Chair on various administrative responsibilities, including: publicity for the department, website management, student advisement, coordinating various guest lecturers, gallery shows, and department events. Managed emails, created posters and branding for various events, organized student work, upkeep of various databases. Helped run and maintain the two and three-dimensional digital printing and scanning facilities. Ran workshops throughout the school year, which taught students how to properly format their files, and use the equipment available to them.

Visual Designer

Created and designed a 50 page catalog for commercial use. Managed interns, created a graphical database of images, and style guides for to maintain branding across the three websites and to create best practices in design and branding. Managed the art, photography, and graphic databases for three websites, which also included: retouching of images, photographing new images, and creating new graphics as necessary. for web and print use. Helped developed branding for three websites and materials necessary for promoting business and elevating branding.

Colleen Caporal

Senior UI/UX Designer

colleencaporal@gmail.com

706.429.7902

portfolio available via request

https://www.linkedin.com/in/colleencaporal/

EDUCATION

MFA Digital Arts, Digital Imaging
Pratt Institute
2008-2011

BFA Fine Arts, Studio Art
North Georgia College & State University
2003-2007

PATENTS

- **US D78,650 S** (Design)
- **US 9,891,810 B2** (Utility)
- **US D783,655 S** (Design)
- **US D797,771 S** (Design)

Note: Six addition design and utility patents are filed and pending examination.

Appendix II – Support Letters

Please refer to the following Supporting Letters with this grant application:

- *Letter of Support - Barragan*
- *Letter of Support - LA Metro*

NANETTE DIAZ BARRAGÁN
44TH DISTRICT, CALIFORNIA
FACEBOOK.COM/CONGRESSWOMANBARRAGAN
TWITTER: @REPBARRAGAN

COMMITTEE ON ENERGY AND COMMERCE

Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON OFFICE:
2246 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-8220

DISTRICT OFFICES:
302 W. FIFTH STREET, SUITE 201
SAN PEDRO, CA 90731
(310) 831-1799

701 E. CARSON STREET
CARSON, CA 90745

8650 CALIFORNIA AVENUE
SOUTH GATE, CA 90280

August 23, 2021

U.S. Department of Transportation
Federal Highway Administration
Office of Operations (HOP)
Mail Drop: E86-205
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590
Attn: David Harris

Re: Port of Los Angeles FY21 Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Application

I write to ask for due consideration of the grant application of the Port of Los Angeles' (POLA or "Port") FY21 ATCMTD grant application for an addition to the Port Optimizer™ called Gateway, seeking $3 million ($6 million total project cost). The Port Optimizer™ has been in operation at POLA since 2016. The Port has already expended over $15 million on this critical system. The Port Optimizer™ is the nation's first true Port Community System (PCS), integrating real-time data from multiple industry sources to give cargo owners and transportation service providers actionable insights. These insights enhance efficiency, reliability, and predictability in the maritime supply chain. The Port Optimizer™ provides users with visibility on their import container cargo from points of origin to final delivery of the cargo.

Over the past 18 months, the Port Optimizer™ has become an important tool for port stakeholders to cope with the uncertainty and operational challenges facing the maritime supply chain. In fact, it has become a platform for the development of new applications to address emergent challenges. Using data and analytics made available through the Port Optimizer™, the Port released the following new modules to reduce congestion and increase cargo throughput:

- The Signal: Provides a three-week volume forecast of containerized import volumes, projected container arrivals and current vessels at anchorage.
- The Return Signal: Advises truckers when they can return empty containers to cargo terminals that are accepting empties.
- The Control Tower: Provides snapshots of truck turn times at cargo terminals, with historical and future trending volume data, broken down by mode and specificity.
- Horizon: Offers forecast cargo movement up to six months in advance, and gauges movement of containers, including imports, exports, and empties.

Building on the investment with the Port Optimizer, POLA aims to expand the ways in which operational data can be ingested and consumed by building a new Port Optimizer™ module called Gateway. By using artificial intelligence, cutting edge modeling, and data integration, Gateway will address congestion concerns and model historic or future scenarios and impacts, which are far too common within our sector. The project will offer an application program interface (API) capability so that more approved users can share or pull data directly with the system and be cloud-based with appropriate cyber security measures.

Gateway will include three new functions to address areas that are driving traffic congestion:

NANETTE DIAZ BARRAGÁN
44TH DISTRICT, CALIFORNIA
FACEBOOK.COM/CONGRESSWOMANBARRAGAN
TWITTER: @REPBARRAGAN

COMMITTEE ON ENERGY AND COMMERCE

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8650 CALIFORNIA AVENUE
SOUTH GATE, CA 90280

1- Gateway – Advanced Empty Return Viewer:
This module builds on the Return Signal and solves the lack of information about empty return acceptance by the terminal operators, which is hindering the ability for the beneficial cargo owners and truckers to efficiently plan empty return trips. This module will capture and display estimated count of empty containers that are accepted by the terminal broken down by type and size to the truckers and BCOs. Furthermore, the notification system generated by this module, will give advanced notice to the drivers that acceptance of a particular container is nearing the end so they can make plans and avoid fruitless wait.

2- Gateway Advanced Cargo Pick-Up Alert:

- The system provides the ability for beneficial cargo owner and truckers to alert terminal operators about when they plan to pick up cargo. This planning system will allow terminal operators to better plan the sequence of the offload and arrangement of containers, specifically the ones that are flagged with urgency. This will reduce the numbers of moves and will line up containers efficiently for an easier pick up. Furthermore, this module will give BCOs and truckers visibility into when containers will be available for pick up.

3- Gateway Detention and Demurrage Manager:

- By providing functionalities in the above paragraphs 1 and 2, the system will enable enhanced reporting of how detention and demurrage is occurring at the port. By providing this level of clarity, Detention and Demurrage Manager will facilitate and enable the following steps:
  - Terminal operators will provide relevant Detention and Demurrage data.
  - Detention and Demurrage Manager will present the data to Beneficial cargo owners.
  - Detention and Demurrage Manager will generate and send notifications to truckers.
  - Terminal operators will provide chassis and railcar counts.

In the future, Gateway can provide additional important data to enhance the functionality and value of LA Metro's Drayflex project, which is currently being piloted. Drayflex is funded by USDOT's ATCMTD. As a result, the new application will develop future scalability with data partners and APIs, which enable users to maintain their current IT infrastructure, integrate data, and provide a cost-effective option for USDOT and its partners.

Key supply chain stakeholders, such as cargo owners, railroads, shipping lines, trucking companies, terminal operators, logistics providers, and port authorities will benefit from Gateway. Furthermore, information gleaned from this deployment can aid the broader national discussion about port/goods movement disruption.

I respectfully request the U.S. Department of Transportation to give due consideration to this ATCMTD grant application.

Sincerely,

Nanette Diaz Barragán

Nanette Diaz Barragán
Member of Congress

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

Metro

August 23, 2021

U.S. Department of Transportation
Federal Highway Administration
Office of Operations (HOP)
Mail Drop: E86-205
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590
Attn: David Harris

Re: Port of Los Angeles FY21 Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Application

The Los Angeles County Metropolitan Transportation Authority (Metro) writes in support of the Port of Los Angeles' (POLA or "Port") FY21 ATCMTD grant application for an addition to the Port Optimizer™ called Gateway, seeking $3 million ($6 million total project cost). The Port Optimizer™ has been in operation at POLA since 2016. The Port has already expended over $15 million on this critical system. The Port Optimizer™ is the nation's first true Port Community System (PCS), integrating real-time data from multiple industry sources to give cargo owners and transportation service providers actionable insights. These insights enhance efficiency, reliability, and predictability in the maritime supply chain. The Port Optimizer™ provides users with visibility on their import container cargo from points of origin to final delivery of the cargo.

Over the past 18 months, the Port Optimizer™ has become an important tool for port stakeholders to cope with the uncertainty and operational challenges facing the maritime supply chain. In fact, it has become a platform for the development of new applications to address emergent challenges. Using data and analytics made available through the Port Optimizer™, the Port released the following new modules to reduce congestion and increase cargo throughput:

- The Signal: Provides a three-week volume forecast of containerized import volumes, projected container arrivals and current vessels at anchorage.
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- Horizon: Offers forecast cargo movement up to six months in advance, and gauges movement of containers, including imports, exports, and empties.

Building on the investment with the Port Optimizer, POLA aims to expand the ways in which operational data can be ingested and consumed by building a new Port Optimizer™ module called Gateway. By using artificial intelligence, cutting edge modeling, and data integration, Gateway will address congestion concerns and model historic or future scenarios and impacts, which are far too common within our sector. The project will offer an application program interface (API) capability so that more approved users can share or pull data directly with the system and be cloud-based with appropriate cyber security measures.

Gateway will include three new functions to address areas that are driving traffic congestion:

1- Gateway – Advanced Empty Return Viewer:

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  - Detention and Demurrage Manager will present the data to Beneficial cargo owners.
  - Detention and Demurrage Manager will generate and send notifications to truckers.
  - Terminal operators will provide chassis and railcar counts.

In the future, Gateway can provide additional important data to enhance the functionality and value of LA Metro's DrayFLEX project, which is currently being piloted. DrayFLEX is funded by USDOT's ATCMTD. As a result, the new application will develop future scalability with data partners and APIs, which enable users to maintain their current IT infrastructure, integrate data, and provide a cost-effective option for USDOT and its partners.

Key supply chain stakeholders, such as cargo owners, railroads, shipping lines, trucking companies, terminal operators, logistics providers, and port authorities will benefit from Gateway. Furthermore, information gleaned from this deployment can aid the broader national discussion about port/goods movement disruption.

I respectfully request the U.S. Department of Transportation to consider this ATCMTD grant application.

Sincerely,

Steven Y. Gota
Executive Officer
Highway Program
Los Angeles County Metropolitan Transportation Authority

Appendix III – Supporting Mockups

Please refer to the following support Mockups with this grant application

THE PORT OF LOS ANGELES

Gateway
By Port Optimizer™

Welcome, **Gene**

Advanced Empty Return Dashboard

Today | Tomorrow | Historical | Download | Filter

	msc	EVERGREEN	MAERSK	Hapag-Lloyd	CMA CGM	YANG MING	COSCO SHIPPING	WAN HAI LINES LTD.
ITS	5	10	6	3	12	10	7	5

	20ST	40ST	20HC	40HC	45	20RF	40RF	FLAT	SPECIAL
APMT	15	20	10	6	0	12	10	32	5

Powered by Wabtec CORPORATION

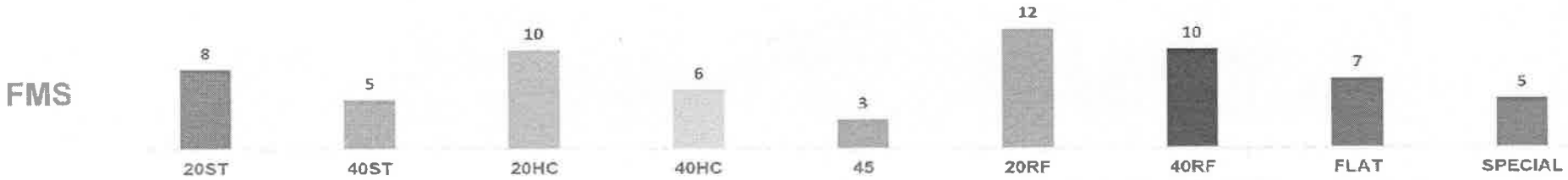
THE PORT OF LOS ANGELES

Gateway
By Port Optimizer™

2 Welcome, **Kerry**

Advanced Empty Return Notification System

Tuesday October 18, 2021
9:34.23 AM Pacific



You have 2 new messages:

- FMS Terminal will only accept 3 more 45 type container. If you are far in the queue, consider APMT or ITS terminals.
- No more 20HC containers are accepted at FMS. Please re-route to ITS.

Powered by Wabtec CORPORATION

THE PORT OF LOS ANGELES

Gateway
By Port Optimizer™

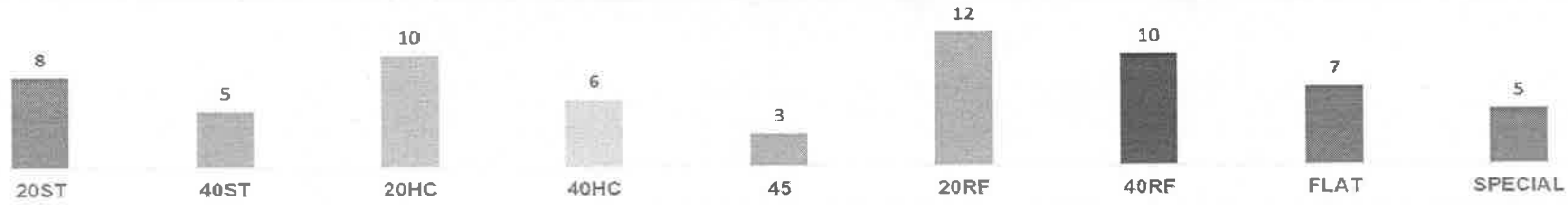
Welcome, Gene

Advanced Empty Return Dashboard

Today | Tomorrow | Historical | Download | Filter

	20ST	40ST	20HC	40HC	45	20RF	40RF	FLAT	SPECIAL
APMT	15	20	10	6	0	12	10	32	5

FMS



ITS	msc	EVERGREEN	MAERSK	Hapag-Lloyd	CMA CGM	YANG MING	COSCO SHIPPING	WAN HAI LINES LTD.
	5	10	6	3	12	10	7	5

Powered by Wabtec CORPORATION

THE PORT OF LOS ANGELES

Gateway
By Port Optimizer™

Welcome, **Amber**

Advanced Container Offload Alert System

Today | Tomorrow | Historical | Download | Filter

APMT

Beneficial Cargo Owner	11-Oct		12-Oct		13-Oct		14-Oct		15-Oct	
	1st Shift	2nd Shift	1st Shift	2nd Shift	1st Shift	2nd Shift	1st Shift	2nd Shift	1st Shift	2nd Shift
TARGET			15	23	19	10				
HARBOR FREIGHT	3	4	20	54	34	25	20			
KOHL'S					12	34	23	32		
VOLVO						25	25	25	25	25

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THE PORT OF LOS ANGELES

Gateway
By Port Optimizer™

Welcome, **David**

Advanced Beneficial Cargo Owner Dashboard System

Today | Tomorrow | Historical | Download | Filter

APMT

Beneficial Cargo Owner	11-Oct		12-Oct		13-Oct		14-Oct		15-Oct	
	1st Shift	2nd Shift	1st Shift	2nd Shift	1st Shift	2nd Shift	1st Shift	2nd Shift	1st Shift	2nd Shift
TARGET			15	23	19	10				

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THE PORT OF LOS ANGELES

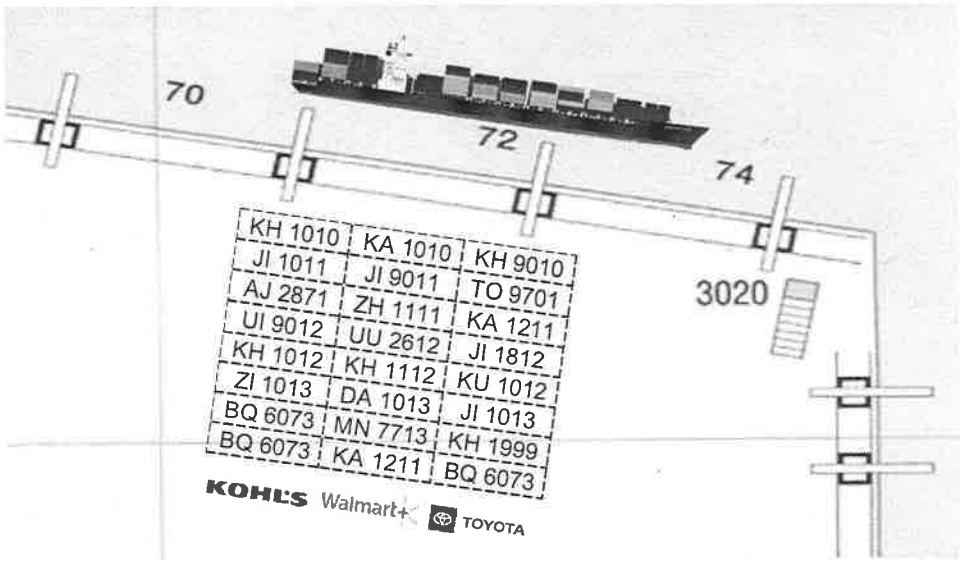
Gateway
By Port Optimizer™

Welcome, Lance

TTI Terminal Cargo Unloading Sequence

Today | Tomorrow | Historical | Download

Date	Shift	KOHL'S	Walmart+	TOYOTA
10/2/2021	Shift 1	KH 1010	KA 1010	KH 9010
	Shift 2	JI 1011	JI 9011	TO 9701
10/3/2021	Shift 1	AJ 2871	ZH 1111	KA 1211
	Shift 2	UI 9012	UU 2612	JI 1812
10/4/2021	Shift 1	KH 1012	KH 1112	KU 1012
	Shift 2	ZI 1013	DA 1013	JI 1013
10/5/2021	Shift 1	BQ 6073	MN 7713	KH 1999
	Shift 2	BQ 6073	KA 1211	BQ 6073

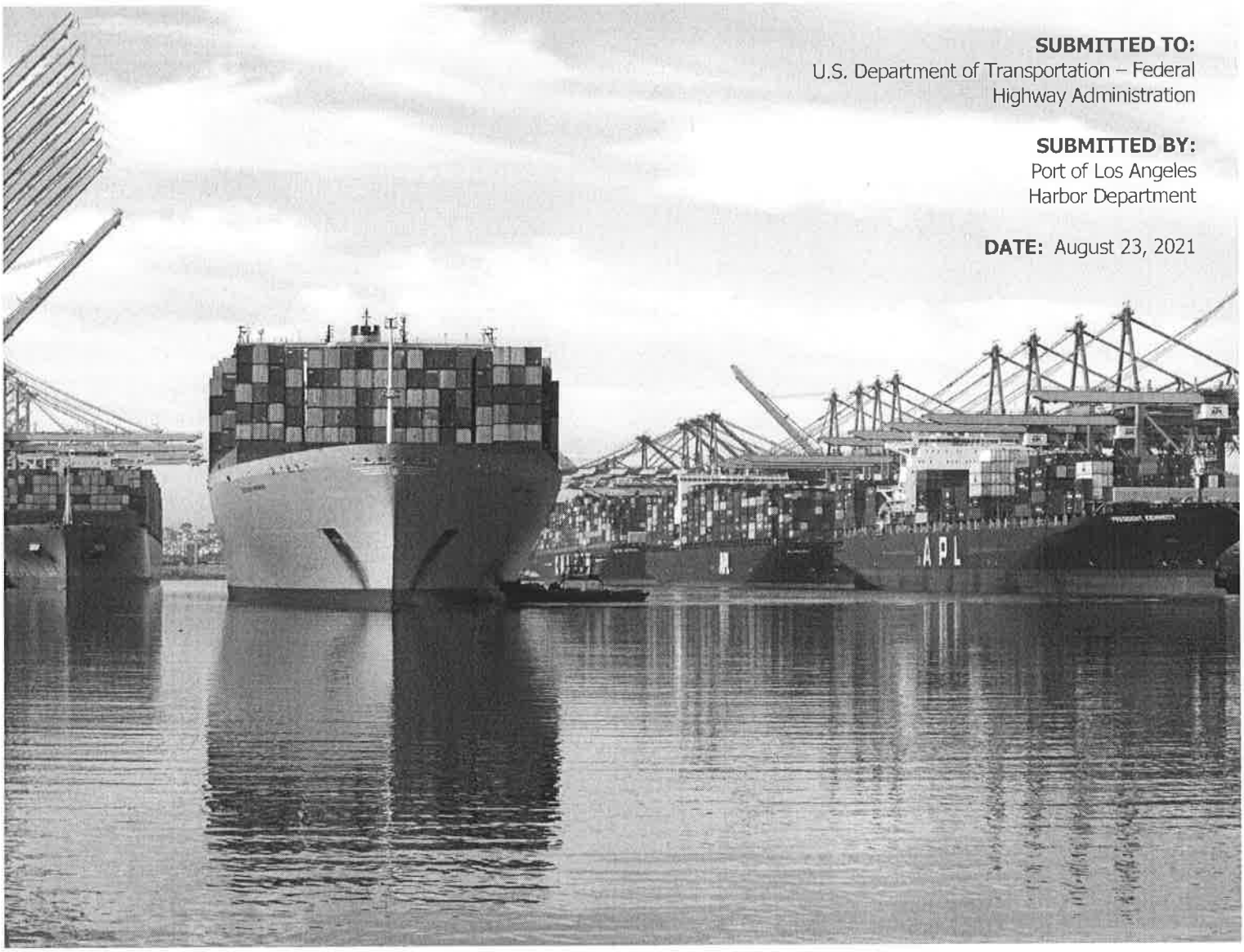


Powered by Wabtec CORPORATION

SUBMITTED TO:
U.S. Department of Transportation – Federal Highway Administration

SUBMITTED BY:
Port of Los Angeles
Harbor Department

DATE: August 23, 2021



ATCMTD GRANT APPLICATION – Volume II

Budget Application

Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Initiative

Applicant:	The Port of Los Angeles (City of Los Angeles Harbor Department)
Type of Eligible Applicant:	Regional Transportation Planning Agency/Transit Agency
ATCMTD Grant Request:	$6,000,000
Location:	Los Angeles County, CA
Congressional District:	44th – Nanette Barragan, 47th – Alan Lowenthal
NOFO Number:	693JJ321NF00005

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Section II - Summary Budget Information 4
Section III - Cost Share Information 5
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Appendix I – Letter of Commitment 8
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Section I - Application Standard Forms

Please refer to the Standard Forms submitted through Grants.gov.

Section II - Summary Budget Information

During the proposed project, there are three distinct sets of work to be done which will be completed sequentially:

- Scope gathering and user experience efforts to recognize how and in what ways the tools will be best utilized.
- Data acquisition to include cleaning and stitching; and
- Application development within each of the submodules.

Details on project milestones and the work plan can be found in Volume 1, Section 10 and Section 11 respectively of this ATCMTD application.

Each phase will have a feedback cycle loop and at the end of the final development module, we will run and test the full integrated system for an additional 60 days with documentation to follow. The total project cost is $6,000,000. Table 2 below describes the project phases and the estimated costs attributed to each.

Project Phase	Description	Cost	% of Total
Software Development & Data Ingestion	System architecture, data ingestion, software development	$1,800,000	30%
Digital Twin for Gateway module	Digital replica of the physical assets for situational awareness and simulation for faster response to Control Tower Data, including geofencing capabilities & triggers	$1,200,000	20%
Requirements Gathering &User Experience Design	Gather user requirements, start UX wire frames, map dependencies, initiate data mapping & collection	$430,000	7%
Implementation	Final testing, field deployment, training, measure quantifiable baselines & improvements	$550,000	9%
Deploy & Test Analytics	(List data sets & call out architecture)	$500,000	8%
User evaluations, configuration & documentation	User feedback adjustments, evaluations, reporting & final documentation	$550,000	9%
Project & Systems Management Engineering	System engineering, process management. Project planning and reporting (half of 9%)	$520,000	9%
Cloud Hosting, Cybersecurity, IT Services	Standup cloud environment, deploy cybersecurity systems, and standup IT services	$450,000	8%

Table 2: Estimated project cost

Section III - Cost Share Information

As shown in Section II of Volume 2, the total estimated project cost is $6,000,000. POLA is requesting $3,000,000 in Federal funds (50 percent) from the ATCMTD program. This will complement the $2,500,000 that POLA has earmarked for technological enhancements and the $500,000 investment that Wabtec has committed to invest in the development of Gateway module. Table 3 below describes the project phases and the estimated costs attributed to each. Please refer to Wabtec's letter of commitment in Appendix I of this pdf.

	Year 1 Costs	**Year 2 Costs**	**Year 3 Costs**	**Total**
Description of Project Component or Task	Software Development & Data Ingestion	Cloud Hosting, Cybersecurity, IT Services	Cloud Hosting, Cybersecurity, IT Services	
Description of Project Component or Task	Digital Twin for Gateway module	Project & Systems Management Engineering	Project & Systems Management Engineering	
Description of Project Component or Task	Requirements Gathering &User Experience Design	Implementation	Implementation	
Description of Project Component or Task	Deploy & Test Analytics	User evaluations, configuration & documentation		
Total Federal Share =	$ 800,000	$ 1,200,000	$ 1,000,000	$ 3,000,000
Total Non-Federal Share =	$ 1,500,000	$ 1,500,000		$ 3,000,000

Table 3: Estimated summary budget by year

Section IV - Organizational Information

a. Identify any exceptions to the anticipated award terms and conditions as contained in Section F, Federal Award Administration Information. Identify any preexisting intellectual property that you anticipate using during award performance, and your position on its data rights during and after the award period of performance.
Response: No exceptions

b. The use of a Dun and Bradstreet (D&B) DUNS number is required on all applications for Federal grants or cooperative agreements. Please provide your organization's DUNS number in your budget application.
Response: DUNS number is 1383325690000

c. A statement to indicate whether your organization has previously completed an A-133 Single Audit and, if so, the date that the last A-133 Single Audit was completed.
Response: An A-133 Single Audit was last completed on 6/30/2020. The report, dated January 14, 2021, is included in Appendix II of this pdf and can also be found online at https://kentico.portoflosangeles.org/getmedia/787214ef-2a49-43f9-af80-2617d43907ed/Single_Audit_Report_2020

d. A statement regarding Conflicts of Interest. The Applicant must disclose in writing any actual or potential personal or organizational conflict of interest in its application that describes in a concise manner all past, present or planned organizational, contractual or other interest(s), which may affect the Applicants' ability to perform the proposed project in an impartial and objective manner. Actual or potential conflicts of interest may include but are not limited to any past, present or planned contractual, financial, or other relationships, obligations, commitments or responsibilities, which may bias the Applicant or affect the Applicant's ability to perform the agreement in an impartial and objective manner. The Agreement Officer (AO) will review the statement(s) and may require additional relevant information from the Applicant. All such information, and any other relevant information known to DOT, will be used to determine whether an award to the Applicant may create an actual or potential conflict of interest. If any such conflict of interest is found to exist, the AO may (a) disqualify the Applicant, or (b) determine that it is otherwise in the best interest of the United States to contract with the Applicant and include appropriate provisions to mitigate or avoid such conflict in the agreement pursuant to 2 CFR 200.112.
Response: No known conflicts of interest

e. A statement to indicate whether a Federal or State organization has audited or reviewed the Applicant's accounting system, purchasing system, and/or property control system. If such systems have been reviewed, provide summary information of the audit/review results to include as applicable summary letter or agreement, date of audit/review, Federal or State POC for such review.
Response: No known audits

f. Terminated Contracts - List any contract/agreement that was terminated for convenience of the Government within the past three years, and any

contract/agreement that was terminated for default within the past five years. Briefly explain the circumstances in each instance.
Response: No known terminated contracts/agreements

g. The Applicant is directed to review Title 2 CFR §170(http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr170_main_02.tpl) dated September 14, 2010,and Appendix A thereto, and acknowledge in its application that it understands the requirement, has the necessary processes and systems in place, and is prepared to fully comply with the reporting described in the term if it receives funding resulting from this notice. The text of Appendix A will be incorporated in the award document as a General Term and Condition as referenced under this notice's Section F, Federal Award Administration Information.
Response: This requirement is understood and will be adhered to

h. Disclose any violations of Federal criminal law involving fraud, bribery, or gratuity violations. Failure to make required disclosures can result in any of the remedies described in 2 CFR 200.338 entitled Remedies for Noncompliance, including suspension or debarment.(See also 2 CFR Part180 and 31 U.S.C. 3321).
Response: No known violations

Appendix I – Letter of Commitment

Please refer to the following Letter of Commitment attached with this grant application.

Kareen Gray
Vice President Sales
Regional Railroads, Short Line's & Ports
Wabtec Corporation
M:+1 312-590-6304
E: kareen.gray@wabtec.com
http://www.wabteccorp.com

U.S. Department of Transportation
Federal Highway Administration
Office of Operations (HOP)
Mail Drop: E86-205
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590
Attn: David Harris

August 23, 2021

Re: Wabtec Corporation letter of commitment for Port of Los Angeles 2021 Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Application

Dear Mr. Harris,

Wabtec Transportation Systems, LLC **(Wabtec)** is pleased to provide this letter of commitment for the Port of Los Angeles 2021 Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Application **(Commitment Letter).**

Wabtec, a Fortune 500 company, is an ~$8 Billion enterprise with its Digital Solutions business contributing $1B annually to that total. Wabtec has over 27,000 employees in 50 countries, with a Corporate headquarters in Pittsburgh, Pennsylvania.

Wabtec is accelerating the future of transportation. Combining decades of industrial leadership with cutting-edge data science and analytics acumen, Wabtec is creating an efficient, productive and reliable digital-supply chain ecosystem – from shipper to receiver; ports to intermodal terminals; main line locomotives to railcars; and from train yards and operation centers.

As a member of the global supply chain Wabtec contributes ~$1B annually in supply chain spending across the world, moving cargo through ports and inland railroad networks. As a critical digital infrastructure provider across the supply chain, Wabtec develops software to drive operations in almost all modes of transportation including ocean, rail, and trucks. It is through these efforts to digitize the supply chain that Wabtec also works with some of the most innovative and imaginative minds, through its partnership network, industry thought leaders, and some of the most passionate customers around the globe.

Wabtec and the Port of Los Angeles formed a strong partnership in 2016 to drive higher traffic fluidity with the deployment of The Port Optimizer™, the nation's first Port Community System (PCS) that integrates real-time data from multiple industry sources to give cargo owners and transportation service providers actionable insights. These insights enhance efficiency, reliability, and predictability in the maritime supply chain. The Port Optimizer™ provides import container cargo visibility for all entities in the supply chain from points of origin to final delivery of the cargo. have been partnering are eager to join forces and solve traffic congestion, which is one of the major challenges hindering the supply chain and impacting our environment.

The total project cost to support the Port of Los Angeles 2021 ATCMTD grant application is $6,000,000. Of this amount, the Port of Los Angeles is requesting $3,000,000 in Federal funds (50 percent of the total project cost) from the ATCMTD program. Wabtec is committed to invest $500,000 in the development and the deployment of the proposed project solution Port Optimizer™ Gateway. This will complement an amount of $2,500,000 that the Port of Los Angeles has earmarked for this project.

Wabtec and the Port of Los Angeles are enthusiastic about this unique opportunity. On behalf of Wabtec, I respectfully request the U.S. Department of Transportation to consider this ATCMTD grant application.

Sincerely,

Kareen Gray
Vice President Sales
Regional Railroads, Short Line's & Ports
Wabtec Corporation

Appendix II – Single Audit Report

Please refer to the following Single Audit Report attached with this grant application.

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)

Single Audit Reports

For the Year Ended June 30, 2020

Certified
Public
Accountants

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)
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Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards* 1

Independent Auditor's Report on Compliance for the Major Federal Program; Report on Internal Control Over Compliance; and Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance 3

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mgo Certified Public Accountants

Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

Honorable Members of the Board of Harbor Commissioners
Port of Los Angeles (Harbor Department of the City of Los Angeles)

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Port of Los Angeles (Harbor Department of the City of Los Angeles) (Port), an enterprise fund of the City of Los Angeles, California (City), as of and for the fiscal year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Port's basic financial statements, and have issued our report thereon dated November 30, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Port's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Port's internal control. Accordingly, we do not express an opinion on the effectiveness of the Port's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Port's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Macias Gini & O'Connell LLP
700 South Flower St., Suite 500
Los Angeles, CA 90017

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Macias Gini & O'Connell LLP

Los Angeles, California
November 30, 2020

mgo Certified Public Accountants

Independent Auditor's Report on Compliance for the Major Federal Program; Report on Internal Control Over Compliance; and Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

Honorable Members of the Board of Harbor Commissioners
Port of Los Angeles (Harbor Department of the City of Los Angeles, California)

Report on Compliance for the Major Federal Program

We have audited the Port of Los Angeles (Harbor Department of the City of Los Angeles, California) (the Port) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on the Port's major federal program for the year ended June 30, 2020. The Port's major federal program is identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal programs.

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for the Port's major federal program based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Port's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the major federal program. However, our audit does not provide a legal determination of the Port's compliance.

Opinion on the Major Federal Program

In our opinion, the Port complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended June 30, 2020.

Report on Internal Control Over Compliance

Management of the Port is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Port's internal control over compliance with the types of requirements that could have a direct and material effect on the major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Port's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

We have audited the financial statements of the Port as of and for the year ended June 30, 2020, and the related notes to the financial statement, which collectively comprise the Port's basic financial statements. We issued our report thereon dated November 30, 2020, which contained an unmodified opinion on those financial statements. Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

Macias Gini & O'Connell LLP

Los Angeles, California
January 14, 2021

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)
Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2020

Federal Grantor/Pass-through Grantor/ Program or Cluster Title	Catalog of Federal Domestic Assistance (CFDA) Number	Grant Number/ Pass-Through Grantor's Number	Federal Expenditures	Amounts Passed Through to Subrecipients
U.S. Department of Justice:				
Direct Program:				
Equitable Sharing Program	16.922	Unknown	$ 25,379	$ -
Total U.S. Department of Justice			25,379	-
U.S. Department of Labor:				
Passed through State of California, Employment Development Department:				
Workforce Innovation and Opportunities Act (WIOA) Cluster				
WIA Adult Program				
High Road Training Partnership Program	17.258	K7105619	(3,672)	-
High Road Training Partnership Program	17.258	K8109478	22,454	-
Total WIOA Cluster			18,782	-
Total U.S. Department of Labor			18,782	-
U.S. Department of Transportation:				
Passed through State of California, Department of Transportation:				
Highway Planning and Construction Cluster				
John S. Gibson Blvd/I-110 Freeway Access Ramps and SR-47/I-110 Northbound Connector	20.205	HPLUL-5006(757)	40,001	-
YTI Terminal Trip Reduction Program	20.205	TCIFCML-5006(818)	192,776	-
Total Highway Planning and Construction Cluster			232,777	-
Total U.S. Department of Transportation			232,777	-
U.S. Environmental Protection Agency:				
Direct Program:				
National Clean Diesel Emissions Reduction Program	66.039	DE99R81901-0	62,820	62,820
Total U.S. Environmental Protection Agency			62,820	62,820
U.S. Department of Homeland Security:				
Direct Program:				
Port Security Grant Program				
Security System Maintenance and Repair	97.056*	EMW-2017-PU-00358	750,000	-
POLA Information Technology Cybersecurity Enhancement and Critical Infrastructure Protection	97.056*	EMW-2017-PU-00358	272,380	-
Security System Integration	97.056*	EMW-2017-PU-00358	563,254	-
Dive and Hazmat Equipment	97.056*	EMW-2018-PU-00469	122,175	-
Total Port Security Grant Program			1,707,809	-
Total U.S. Department of Homeland Security			1,707,809	-
Total Expenditures of Federal Awards			**$ 2,047,567**	**$ 62,820**

*Denotes major program

See Accompanying Notes to Schedule of Expenditures of Federal Awards.

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)
Notes to the Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2020

1. BASIS OF PRESENTATION

The accompanying Schedule of Expenditures of Federal Awards (the Schedule) presents the activity of all federal award programs of the Port of Los Angeles (Harbor Department of the City of Los Angeles) (the Port) for the year ended June 30, 2020. The Schedule includes federal awards received directly from federal agencies, as well as federal awards passed through other agencies. The Port's reporting entity is defined in Note 1 to the Port's basic financial statements. Because the Schedule presents only a selected portion of the operations of the Port, it is not intended to and does not present the financial position, changes in net position, or cash flows of the Port. The information in the Schedule is presented in accordance with requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Therefore, some amounts presented in this Schedule may differ from amounts presented in, or used in the preparation of, the basic financial statements.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Expenditures reported on the accompanying Schedule is reported on the cash basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years. Pass-through entity identifying numbers are presented where applicable.

3. INDIRECT COST RATES

The Port has elected to not use the ten percent de minimis indirect cost rate as allowed under Uniform Guidance.

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)
Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2020

Section I – Summary of Auditor's Results

FINANCIAL STATEMENTS

Type of auditor's report issued on whether the financial Statements were prepared in accordance with GAAP:	Unmodified
Internal control over financial reporting:	
Material weakness(es) identified?	No
Significant deficiency(ies) identified?	None reported
Noncompliance material to the financial statements noted?	No

FEDERAL AWARDS

Internal control over major federal programs:	
Material weakness(es) identified?	No
Significant deficiency(ies) identified?	None reported
Type of auditor's report issued on compliance for major federal programs:	Unmodified
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)	No

Identification of major program:

CFDA Number	Name of Federal Program or Cluster
97.056	Port Security Grant Program

Dollar threshold used to distinguish between type A and type B programs:	$750,000
Auditee qualified as a low-risk auditee?	Yes

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)
Schedule of Findings and Questioned Costs (Continued)
For the Year Ended June 30, 2020

Section II – Financial Statement Findings

A. Internal Control Matters

None reported.

B. Compliance Findings

None reported.

Section III – Federal Award Findings and Questioned Costs

None reported.

PORT OF LOS ANGELES
(Harbor Department of the City of Los Angeles, California)
Summary Schedule of Prior Year Audit Findings
For the Year Ended June 30, 2020

There were no audit findings reported for the year ended June 30, 2019.

OMB Number: 4040-0004
Expiration Date: 12/31/2022

Application for Federal Assistance SF-424

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
☐ Preapplication	☒ New	
☒ Application	☐ Continuation	* Other (Specify):
☐ Changed/Corrected Application	☐ Revision	

* 3. Date Received:	4. Applicant Identifier:
08/23/2021	

5a. Federal Entity Identifier:	5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:	City of Los Angeles, Harbor Department (Port of Los Angeles)

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
956000735	1383325690000

d. Address:

* Street1:	425 S. Palos Verdes Street
Street2:	
* City:	San Pedro
County/Parish:	Los Angeles
* State:	CA: California
Province:	
* Country:	USA: UNITED STATES
* Zip / Postal Code:	90731-0000

e. Organizational Unit:

Department Name:	Division Name:
City of Los Angeles, Harbor	Information Technology

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:	Mr.	* First Name:	David
Middle Name:			
* Last Name:	Libatique		
Suffix:			

Title:	Deputy Executive Director

Organizational Affiliation:
City of Los Angeles, Harbor Department (Port of Los Angeles)

* Telephone Number:	(310)732-3905	Fax Number:	

* Email:	dlibatique@portla.org

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

DOT Federal Highway Administration

11. Catalog of Federal Domestic Assistance Number:

20.200

CFDA Title:

Highway Research and Development Program

*** 12. Funding Opportunity Number:**

693JJ321NF00005

* Title:

Advanced Transportation and Congestion Management Technologies Deployment Initiative

13. Competition Identification Number:

693JJ321NF00005

Title:

Advanced Transportation and Congestion Management Technologies Deployment Initiative

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Port of Los Angeles - Gateway

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: CA-044 * b. Program/Project: CA-044

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 10/01/2021 * b. End Date: 03/31/2024

18. Estimated Funding ($):

* a. Federal	3,000,000.00
* b. Applicant	2,500,000.00
* c. State	0.00
* d. Local	0.00
* e. Other	500,000.00
* f. Program Income	0.00
* g. TOTAL	6,000,000.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr. * First Name: David

Middle Name:

* Last Name: Libatique

Suffix:

* Title: Deputy Executive Director

* Telephone Number: (310)732-3905 Fax Number:

* Email: dlibatique@portla.org

* Signature of Authorized Representative: Lance Kaneshiro * Date Signed: 08/23/2021

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2022

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. All phases per narrative: pre-design, design, implementation, operations, project & systems management engineering		$	$	$ 3,000,000.00	$ 3,000,000.00	$ 6,000,000.00
2.						
3.						
4.						
5. Totals		$	$	$ 3,000,000.00	$ 3,000,000.00	$ 6,000,000.00

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SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
	All phases per narrative: pre-design, design, implementation, operations, project & systems management engineering				
a. Personnel	$	$	$	$	$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual	6,000,000.00				6,000,000.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	6,000,000.00				$ 6,000,000.00
j. Indirect Charges					$
k. TOTALS (sum of 6i and 6j)	$ 6,000,000.00	$	$	$	$ 6,000,000.00
7. Program Income	$	$	$	$	$

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SECTION C - NON-FEDERAL RESOURCES

	(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8.	All phases per narrative: pre-design, design, implementation, operations, project & systems management engineering	$ 2,500,000.00	$	$ 500,000.00	$ 3,000,000.00
9.					
10.					
11.					
12.	TOTAL (sum of lines 8-11)	$ 2,500,000.00	$	$ 500,000.00	$ 3,000,000.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 1,500,000.00	$ 375,000.00	$ 375,000.00	$ 375,000.00	$ 375,000.00
14. Non-Federal	$ 1,000,000.00	250,000.00	250,000.00	250,000.00	250,000.00
15. TOTAL (sum of lines 13 and 14)	$ 2,500,000.00	$ 625,000.00	$ 625,000.00	$ 625,000.00	$ 625,000.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

	(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) (b)First	(c) Second	(d) Third	(e) Fourth
16.	All phases per narrative: pre-design, design, implementation, operations, project & systems management engineering	$ 1,500,000.00	$ 1,000,000.00	$ 500,000.00	$
17.					
18.					
19.					
20.	TOTAL (sum of lines 16 - 19)	$ 1,500,000.00	$ 1,000,000.00	$ 500,000.00	$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:

22. Indirect Charges:

23. Remarks: Contracted vendor will provide the $500,000 shown in Section C Non-Federal Resources, Other Sources.

OMB Number: 4040-0007
Expiration Date: 02/28/2022

ASSURANCES - NON-CONSTRUCTION PROGRAMS

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C.§§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593(identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Lance Kaneshiro	Deputy Executive Director
APPLICANT ORGANIZATION	DATE SUBMITTED
City of Los Angeles, Harbor Department (Port of Los Angeles)	08/23/2021

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CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

* APPLICANT'S ORGANIZATION

City of Los Angeles, Harbor Department (Port of Los Angeles)

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Mr. * First Name: David Middle Name:

* Last Name: Libatique Suffix:

* Title: Deputy Executive Director

* SIGNATURE: Lance Kaneshiro * DATE: 08/23/2021

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2022

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[x] Prime [ ] SubAwardee

* Name: City of Los Angeles, Harbor Department (Port of Los Angeles)
* Street 1: 425 S. Palos Verdes Street
Street 2:
* City: San Pedro
State: CA: California
Zip: 90731-0000
Congressional District, if known: CA-044

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:
DOT Federal Highway Administration

7. * Federal Program Name/Description:
Highway Research and Development Program
CFDA Number, *if applicable:* 20.200

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*
$

10. a. Name and Address of Lobbying Registrant:

Prefix: * First Name: N/A Middle Name:
* Last Name: N/A Suffix:
* Street 1: N/A Street 2:
* City: N/A State: Zip:

b. Individual Performing Services (including address if different from No. 10a)

Prefix: * First Name: N/A Middle Name:
* Last Name: N/A Suffix:
* Street 1: N/A Street 2:
* City: N/A State: Zip:

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

* Signature: Lance Kaneshiro
*Name: Prefix: * First Name: David Middle Name:
* Last Name: Libatique Suffix:
Title: Deputy Executive Director Telephone No.: (310)732-3905 Date: 08/23/2021

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