



March 18, 2016

Letter of support and commitment for the California Energy Commission grant GFO-15-604

To Whom It May Concern,

The intent of this letter is to express our firm commitment to the Port of Los Angeles' application in response to the California Energy Commission's Freight Transportation Projects at California Seaports Grant Funding Opportunity Notice (GFO-15-604 for the Intelligent Transportation Systems and Technologies (ITS) category. Nearly \$18 million will be available statewide for this solicitation to: 1) demonstrate pre-commercial medium- and heavy-duty vehicle technologies (MHD Vehicle Demonstration); 2) demonstrate intelligent transportation systems and technologies (ITS Demonstration); and 3) deployment of commercially available natural gas vehicles (NGV). All projects must be for freight transportation projects connected a California seaport.

The Harbor Department also plans to apply for \$1 million to demonstrate ITS. The proposed ITS Demonstration will provide a drayage solution that integrates and extends the capabilities and potential benefits of the following three existing systems. The Los Angeles Freight Advanced Traveler Information System (FRATIS) suite of applications developed and currently being demonstrated in the Ports of Los Angeles and Long Beach (POLA/POLB) by Productivity Apex, Inc. on behalf of the United States Department of Transportation (USDOT). The Port of Los Angeles Advanced Yard Tractor Deployment and ECO-FRATIS Drayage Truck Efficiency Project will provide a comprehensive in-service demonstration of the Freight Advanced Traveler Information System (FRATIS), which integrates and augments existing regional intelligent transportation systems and private sector traffic data sources to provide freight-centric real-time information to support improved truck routing and dispatcher decision-making. This system was developed, was initially demonstrated at the POLA YTI terminal, and is continuing to be demonstrated in the POLA/POLB via a USDOT competitively solicited grant.

Integration work will be performed by us and the other ITS teams, with assistance and coordination as necessary from Port staff and the Los Angeles County Metropolitan Transportation Authority. The integrated system is designed based on the needs and capabilities of key stakeholders at the San Pedro Bay Complex (Port of Los Angeles and Port of Long Beach) aligned with the overall goals and objectives of California Energy Commission. The goals of the ITS is to provide: 1) reduced truck fuel consumption and emissions to/from marine terminals, by using the most eco-friendly truck routes; 2) increased marine terminal throughput, by optimizing truck dispatch time and arrival at the marine terminal; and 3) increased truck power productivity and number of turns per truck, by optimizing drayage routes and sequence.

Match-share funding will be contributed in support of the project in the amount of \$114,780, this is for direct labor I, Dr. Mollaghasemi, will be providing for the duration of the project.

We look forward to working with the other ITS project teams and the Ports of Los Angeles and Long Beach on the deployment of ECO-FRATIS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mansooreh Mollaghasemi', is written over a horizontal line.

Mansooreh Mollaghasemi, Ph.D.
Founder & CEO

11301 Corporate Blvd., Suite 303, Orlando, Florida 32817
Phone: (407) 384-0800 Fax: (407) 384-0882
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TRANSMITTAL 7

March 18, 2016

RE: Letter of support for the CEC grant GFO-15-604

To Whom It May Concern:

On January 7, 2016, the State of California Energy Commission (CEC) released a grant solicitation for Alternative and Renewable Fuel and Vehicle Technology Program for Freight Transportation Projects at California Seaports (GFO-15-604). The City of Los Angeles Harbor Department is submitting a \$5 million proposal under the MHD Vehicle Demonstration category to fund the deployment of twenty yard tractors utilizing the Cummins-Westport 9.0 liter near-zero emission liquefied natural gas and five zero-emission battery electric yard tractors to validate their technical or market viability prior to commercial vehicle or component production.

The Harbor Department also plans to apply for \$1 million to demonstrate intelligent transportation systems (ITS). The proposed ITS Demonstration will provide a drayage solution that integrates and extends the capabilities and potential benefits of three existing systems. One of these systems is one that we have developed here at UC Riverside. This "Eco-Drive" application uses traffic signal phase and timing information to optimize acceleration/deceleration of trucks that travel on signalized arterial corridors. This system was originally developed with funding from the United States Department of Transportation under a competitively solicited grant.

We will work with the other ITS team partners to perform the integration work, with assistance and coordination as necessary from Port staff and the Los Angeles County Metropolitan Transportation Authority. The integrated system will be designed based on the needs and capabilities of key stakeholders at the San Pedro Bay Complex (Port of Los Angeles and Port of Long Beach) aligned with the goals and objectives of the CEC. The goals of the ITS applications are to provide: 1) reduced truck fuel consumption and emissions to/from marine terminals, by using the most eco-friendly driving speeds; 2) increased marine terminal throughput, by optimizing truck dispatch time and arrival at the marine terminal; and 3) increased truck productivity and number of turns per truck, by optimizing drayage routes and sequence.

In support of the proposed ITS Demonstration, we will contribute a match share funding of \$86,538 for two graduate student researchers working on the Demonstration for one year. We will also contribute another match share funding of \$3,600 for 30 tablets to be used during the Demonstration. Therefore, our total match share contribution is \$90,138. We are pleased to be part of the ITS team in this proposal, and look forward to working with the team on this opportunity. Please contact me for any questions.

Sincerely,



Matthew Barth
Yeager Families Professor of Engineering
Director, Center for Environmental Research and Technology
University of California, Riverside



March 21, 2016

Letter of support and commitment for the California Energy Commission grant GFO-15-604

To Whom It May Concern,

The intent of this letter is to express our firm commitment to the Port of Los Angeles' application in response to the California Energy Commission's Freight Transportation Projects at California Seaports Grant Funding Opportunity Notice (GFO-15-604 for the Intelligent Transportation Systems and Technologies (ITS) category. Nearly \$18 million will be available statewide for this solicitation to: 1) demonstrate pre-commercial medium- and heavy-duty vehicle technologies (MHD Vehicle Demonstration); 2) demonstrate intelligent transportation systems and technologies (ITS Demonstration); and 3) deployment of commercially available natural gas vehicles (NGV). All projects must be for freight transportation projects connected a California seaport.

The Harbor Department also plans to apply for \$1 million to demonstrate ITS. The proposed ITS Demonstration will provide a drayage solution that integrates and extends the capabilities and potential benefits of three existing systems. These systems will leverage data from the Ports of Los Angeles and Long Beach terminals, which is captured by **GeoStamp**. The data to be integrated is turn-time feeds through a programmatic structure allowing for complex queries.

Integration work will be performed by InfoMagnus and the other ITS teams, with assistance and coordination as necessary from Port staff and the Los Angeles County Metropolitan Transportation Authority. The integrated system is designed based on the needs and capabilities of key stakeholders at the San Pedro Bay Complex (Port of Los Angeles and Port of Long Beach) aligned with the overall goals and objectives of California Energy Commission. The goals of the ITS is to provide: 1) reduced truck fuel consumption and emissions to/from marine terminals, by using the most eco-friendly truck routes; 2) increased marine terminal throughput, by optimizing truck dispatch time and arrival at the marine terminal; and 3) increased truck power productivity and number of turns per truck, by optimizing drayage routes and sequence.

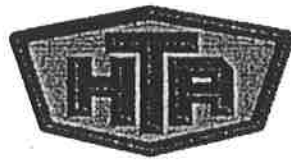
Match share funding will be contributed in support of the project in the amount of \$37,628, this is for direct labor, Sal Manzo and Kaveh Mahjoob, will be providing for the duration of the project.

We look forward to working with the other ITS project teams and the Ports of Los Angeles and Long Beach on the deployment of **GeoStamp**.

Sincerely,
Sal Manzo

Sal Manzo.
Co-Founder

3/23/2016



Harbor
Trucking
Association

On January 7, 2016, the State of California Energy Commission (CEC) released a grant solicitation for Alternative and Renewable Fuel and Vehicle Technology Program for Freight Transportation Projects at California Seaports (GFO-15-604). Nearly \$18 million will be available statewide for this solicitation to: 1) demonstrate pre-commercial medium- and heavy-duty vehicle technologies (MHD Vehicle Demonstration); 2) demonstrate intelligent transportation systems and technologies (ITS Demonstration); and 3) deployment of commercially available natural gas vehicles (NGV). All projects must be for freight transportation projects connected a California seaport.

Projects that propose to enhance market acceptance and deployment of advanced vehicle technologies that will reduce greenhouse gas (GHG) emissions, reduce petroleum use and benefit disadvantaged communities (DAC) will be considered under this solicitation. The project must be in or near DAC to receive funding. There is also a 25 percent minimum funding match requirement that may be fulfilled through in-kind services, equipment purchases, labor costs, alternative fuel costs and electricity services during the term of the grant agreement. The grant application is due to the CEC on March 24, 2016. Preliminary grantee award selection will be made on April 7, 2016. All work must be scheduled for completion by no later than March 31, 2020.

The City of Los Angeles Harbor Department (Harbor Department) plans to apply for \$5 million under the MHD Vehicle Demonstration category to fund the deployment of twenty yard tractors utilizing the Cummins-Westport 9.0 liter near-zero emission liquefied natural gas and five zero-emission battery electric yard tractors to validate their technical or market viability prior to commercial vehicle or component production. The liquefied natural gas tractors will be fueled with renewable natural gas resulting in lower GHG footprint compared to pipeline natural gas. The Harbor Department also plans to apply for \$1 million to demonstrate ITS. The proposed ITS Demonstration will provide a drayage solution that integrates and extends the capabilities and potential benefits of the following three existing systems:

- Los Angeles Freight Advanced Traveler Information System (FRATIS) suite of applications developed and currently being demonstrated in the Ports of Los Angeles and Long Beach (POLA/POLB) by ProductivityApex on behalf of the United States Department of Transportation (USDOT) (see attached FRATIS description)
 - This system was developed, was initially demonstrated at the POLA YTI terminal, and is continuing to be demonstrated in the POLA/POLB via a USDOT competitively solicited grant
- Harbor Trucking Association (HTA)/Infomagnus Geostamp application, which entails the provision of real-time truck travel and terminal turn times via an automated mobile smart device application (i.e., real-time locator data via mobile smart device GPS)
 - Geostamp is presently being launched by the HTA, and is a user paid service; the Harbor Department will aggressively seek to leverage this grant to obtain a complementary subscription
 - The HTA selected Infomagnus via a competitive request for proposals
- University of California Riverside's ECO-Drive application, which entails using traffic signal timing information to optimize acceleration/deceleration of trucks
 - This system was developed and tested via a United States Department of Energy competitively solicited grant

These three IT providers will perform the integration work, with assistance and coordination as necessary from Port staff and the Los Angeles County Metropolitan Transportation Authority. The integrated system is designed based on the needs and capabilities of key stakeholders at the San Pedro Bay Complex (Port of Los Angeles and Port of Long Beach) aligned with the overall goals and objectives of California Energy Commission. The goals of the ITS is to provide: 1) reduced truck fuel consumption and emissions to/from marine terminals, by using the most eco-friendly truck routes; 2)

increased marine terminal throughput, by optimizing truck dispatch time and arrival at the marine terminal; and 3) increased truck power productivity and number of turns per truck, by optimizing drayage routes and sequence.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. LaBar', with a long horizontal flourish extending to the right.

Weston LaBar
Executive Director



Metro

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

March 21, 2016

Diana Parmley, Commission Agreement Officer
California Energy Commission
1516 Ninth Street, MS-18
Sacramento, California 95814

Subject: Freight Transportation Projects at California Seaports: Letter of Support for Port of Los Angeles

Dear Ms. Parmley,

On behalf of Los Angeles County Metropolitan Transportation (Metro) and a member of the Countywide Zero Emissions Trucks Collaborative (Collaborative), I am pleased to offer this Letter of Support for the Port of Los Angeles' (POLA) application for Freight Transportation Projects at California Seaports under Grant Funding Opportunity GFO-15-604. Nearly \$18 million will be available statewide for this solicitation to: 1) demonstrate pre-commercial medium- and heavy-duty vehicle technologies (MHD Vehicle Demonstration); 2) demonstrate intelligent transportation systems and technologies (ITS Demonstration); and 3) deployment of commercially available natural gas vehicles (NGV). All projects must be for freight transportation projects connected to a California seaport.

POLA plans to apply for \$5.0 million under the MHD Vehicle Demonstration category to fund the deployment of twenty yard tractors utilizing the Cummins-Westport 9.0 liter near-zero emission liquefied natural gas engine and five zero-emission battery electric yard tractors to validate their technical or market viability prior to commercial vehicle or component production. The liquefied natural gas tractors will be fueled with renewable natural gas resulting in a lower GHG footprint compared to using pipeline natural gas.

The POLA also plans to apply for \$1.0 million to enhance existing ITS and connected vehicle technologies adjacent to the Ports. The proposed ITS project will provide a drayage solution that integrates and extends the capabilities and potential benefits of the following three existing systems:

- Los Angeles Freight Advanced Traveler Information System (FRATIS): This system was developed and initially demonstrated at the POLA Yusen Terminal (YTI) terminal, and is continuing to be demonstrated in the POLA/POLB via a USDOT competitively solicited grant. Metro has been a continued stakeholder and supporter for FRATIS expansion;
- Harbor Trucking Association (HTA)/Infomagnus Geostamp application: Entails the provision of real-time truck travel and terminal turn times via an automated mobile smart device application (i.e., real-time locator data via mobile smart device GPS); and

- University of California Riverside's ECO-Drive application: An eco-connected vehicle application that uses traffic signal timing information to optimize acceleration/deceleration of trucks. This system was developed and tested via a United States Department of Energy competitively solicited grant.

These three providers will perform the integration work, with assistance and coordination as necessary from Port staff and Metro Highway Program staff.

The Collaborative is led by Metro, in cooperation with the Port of Los Angeles, the Port of Long Beach, Caltrans, Gateway Cities Council of Governments, Southern California Association of Governments (SCAG), and the South Coast Air Quality Management District. The main goal of the Collaborative is to promote consistency among public agencies in developing and deploying zero-emissions trucks in the County of Los Angeles. In addition, Metro has studied and implemented various technologies to improve the movement of people and goods, and reduce greenhouse gas emissions, and will support the Port on this effort.

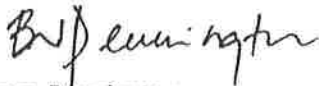
The POLA has worked closely with the Collaborative to support zero emissions technology, specifically the development and deployment of zero and near-zero emission drayage trucks. Their proposal capitalizes on zero emissions technology projects to date and advances these efforts to achieve system-wide benefits. The Los Angeles region, which includes the Ports of Los Angeles and Long Beach, is an ideal location to advance such technologies. It is home to the largest port complex in the United States, the heavily freight traveled Interstate 710 corridor, and high concentrations of distribution warehouses adjacent to disadvantaged communities.

This grant opportunity is one that the POLA is well positioned to lead. The proposed project would provide a viable solution for California to reduce greenhouse gases and combat climate change, and would complement the long-term vision for clean freight transportation in the Los Angeles region and leverage existing technology demonstrations. POLA's proposal was presented to the Collaborative for approval, and it demonstrates regional consensus building.

Lastly, Metro is committed to provide funding support towards the POLA's submittal in the form of hard match and in-kind match for staff support for the proposed ITS project.

We look forward to working with the California Energy Commission to develop and deploy a successful project.

Sincerely,



Bryan Pennington
Deputy Executive Director

cc: Richard F. Clarke, Executive Director, Program Management
Abdollah Ansari, Managing Executive Officer, Highway Program
Steve Gota, Deputy Executive Officer, Highway Program
Adrian Alvarez, Transportation Planning Manager, Highway Program
Ed Alegre, Transportation Planning Manager, Highway Program



Metro

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October 4, 2016

Kerry Cartwright, P.E.
Port of Los Angeles
425 S. Palos Verdes Street
San Pedro, California 90733

**Subject: California Energy Commission – Freight Transportation Projects at California Seaports Grant:
Letter of Commitment**

Dear Mr. Cartwright,

The Los Angeles County Metropolitan Transportation Authority (Metro) is providing this letter of commitment for the Eco-FRATIS Drayage Truck Efficiency project. We are pleased to hear that the Port of Los Angeles (POLA) was selected by the California Energy Commission (CEC) for the Freight Transportation Projects at California Seaports Grant, and look forward to working with you to deploy intelligent transportation systems (ITS) solutions.

As part of the POLA's project, approximately \$1.0 million was funded for ITS and connected vehicle technology, which would provide a drayage solution that integrates and extends the capabilities and potential benefits of the Freight Advanced Travel Information System (FRATIS) project, Harbor Trucking Association (HTA)/Infomagnus Geostamp application, and University of California Riverside (UCR) Eco-Driving application.

In Metro's Letter of Support to the CEC for this grant application submittal, dated March 21, 2016, Metro committed to provide funding support in the form of hard match in the amount of \$240,000. In addition, Metro will provide staff support towards stakeholder coordination and development of ITS concepts identified in the Gateway Cities Technology Plan for Goods Movement. We will prepare the funding agreement between Metro and POLA, and forward it to your attention for review and approval.

We look forward to working with POLA and CEC to develop and deploy a success ITS pilot project. If you have any questions, please contact Metro's Project Manager, Ed Alegre, at 213-922-7902.

Sincerely,

Abdollah Ansari
Managing Executive Director

cc: Steve Gota, Deputy Executive Officer, Highway Program
Ernesto Chaves, Senior Director, Highway Program
Ed Alegre, Senior Manager, Highway Program