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COMMISSION

AGENDA MEMORANDUM Item No. 8c

ACTION ITEM Date of Meeting February 14, 2023

DATE : January 23, 2023

TO: Stephen P. Metruck, Executive Director

FROM: Adrian Down, Environmental Program Manager, AV Environment and Sustainability

Leslie Stanton, Senior Manager, AV Environment and Sustainability

SUBJECT: Request to modify an existing interlocal agreement (ILA) with the National Renewable Energy Laboratory (NREL) to include additional model development to be performed in 2023

Amount of this request: \$200,000

Total estimated project cost: NA

ACTION REQUESTED

Request Commission authorization for the Executive Director to amend the scope and budget of an existing interlocal agreement (ILA) with the National Renewable Energy Laboratory (NREL) to include transportation modeling to support SEA's ground transportation goals and the Port's other goals such as those listed in the Century Agenda.

EXECUTIVE SUMMARY

The Port has an existing ILA with NREL, a not-for-profit, federally funded agency. The ILA was approved by Commission on April 27, 2021, and amended on September 14, 2021, to add scope and budget for innovative transportation modeling. This request is for approval to again amend this ILA to add \$200,000 of work to be carried out over an approximate 1-year period. This additional scope builds on the work completed under the previous ILA modification.

In 2022, NREL and the Port completed a passenger mode choice simulator model (MCS) that predicts passengers' ground transportation mode shift in response to changes in the price or duration of passengers' journeys. The primary goal of this request is to integrate the MCS with the Port's existing traffic microsimulation model, improving the accuracy and predictive power of the combined modeling tool.

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Airports and seaports look to NREL for decision support and actionable insights to inform their long-term facility, infrastructure, and energy planning efforts. NREL has helped other major airports and seaports like Los Angeles World Airports, Dallas Fort Worth International Airport, the Port Authority of New York and New Jersey, and the Port of Long Beach understand the full range of options for achieving ambitious energy-saving goals, improving regional air quality, and optimizing the movement of people and goods.

JUSTIFICATION

Since 2021, the Port has worked with NREL to develop innovative models that support the Port's Ground Transportation Access Plan (GTAP) initiative and help meet the Port's Century Agenda goals to reduce carbon emissions and objectives established in Commission's SEA ground transportation (GT) policy directive (Policy Resolution No. 3759). This request would add scope and budget to the ILA to continue developing and refining these models.

The Port recognizes that the Policy Resolution goal of reducing low-occupancy private vehicle trips to the airport may require new approaches in SEA's GT operations, policies, and facilities, all of which can influence how passengers and employees chose to get to the Airport. Ground transportation initiatives can have complex tradeoffs between revenue generation, environmental performance, cost, equity, and customer service. As a result, NREL expertise is warranted to understand the range of ground transportation options and their potential impacts on Port revenue, emissions, and customer service.

Diversity in Contracting

Given that NREL is uniquely positioned to provide this service, the Port did not set aspirational goals for diversity in contracting. However, the Port will continue to leverage NREL's expertise to evaluate equity in the transportation modeling performed under this contract. The modeling work completed under the previous modification to this ILA includes quantitative and qualitative

metrics that evaluate equity impacts on a range of potential policies. In addition, NREL is committed to being a world-class leader in workforce equity and continues to develop numerous studies that identify equitable and economic local solutions to the climate crisis.

#### DETAILS

Completing the Port's existing MCS was the primary goal of the scope and budget added in the previous (September 14, 2021) modification to this ILA. This MCS model can be used to analyze the impacts of implementing a range of incentives, policies, and operational changes, such as:

- Analyzing the effects of potential changes to fee structures for parking or other GT products to maximize revenue;
- Helping to identify opportunities to influence passenger behavior to achieve the goals included in Resolution 3759 and the Port's Century Agenda of limiting private vehicle curbside use to 30% of passengers and reducing greenhouse gas emissions from all sources, including GT, 50% by 2030.

Template revised June 27, 2019 (Diversity in Contracting).

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However, the MCS is not currently able to incorporate the effect of changes in demand on airport access roads and resulting congestion on SEA roadways. Doing so requires integrating the MCS with SEA's existing microsimulation model that evaluates vehicle traffic on the airport drives. Integration of these tools will allow for an iterative process to determine the interaction between changes in traffic congestion and mode shift. This will enable a more accurate assessment of potential mode shift from various policy initiatives and resulting evaluation of the impacts to GHG emission, customer service, equity, and revenue.

#### Scope of Work

The primary goal of this request is to integrate the MCS with the Port's existing traffic microsimulation model, allowing for an iterative process to determine the impact of changes in traffic congestion resulting from predicted changes in passenger behavior.

To this end, the NREL team will complete the following tasks:

1. Prepare data necessary to run the microsimulation model.
2. Script an interface between the Port's microsimulation model and the MCS.
3. Conduct sensitivity analyses.
4. Create a function to evaluate congestion impacts from model outputs.
5. Create a user interface.

#### Schedule

##### Task/Deliverable Date

Commission ILA modification authorization Q1 2023

Data preparation Q1 2023

Interface script Q2 2023

Sensitivity analyses Q3 2023

Congestion evaluation Q3 2023

User interface Q4 2023

#### ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Do not continue NREL partnership.

Cost Implications: \$0

Pros:

- (1) Cost savings.

Cons:

- (1) The Port will not be able to evaluate congestion impacts associated with potential GT program options. This makes the risk of implementing new or modified GT programs much greater and reduces the likelihood of success.

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(2) The Port may not meet Century Agenda or Policy Resolution 3759 goals.

This is not the recommended alternative.

Alternative 2 – Work with a private consultant to integrate the MCS and traffic microsimulation models.

Cost Implications: TBD

Pros:

(1) Work could be completed under existing Port contracting mechanisms, although additional funding would still be required.

Cons:

(1) Product may not be comparable and would not utilize NREL's industry-leading expertise and innovative research background.

(2) May require additional time and scope for external consultant to build expertise with existing MCS tool.

(3) Work has not been scoped with a separate firm and so costs are unknown.

This is not the recommended alternative.

Alternative 3 – Leverage the existing NREL partnership and expertise to integrate the MCS with the Port's traffic microsimulation model.

Cost Implications: \$200,000

Pros:

(1) Improves understanding of options for reducing greenhouse gas emissions and vehicle trips at SEA, which is essential for moving forward with priority strategies identified in GTAP.

(2) Supports Century Agenda and Commission Policy Resolution 3759 goals.

(3) Potential to identify opportunities to increase non-aeronautical revenue.

Cons:

(1) Financial cost.

This is the recommended alternative.

**FINANCIAL IMPLICATIONS**

**Annual Budget Status and Source of Funds**

The 2022 budget for the addition to the ILA requested here was approved as part of the 2023 Aviation Environment and Sustainability operating budget.

The budget for the existing, previously approved ILA is \$350,000. This included \$200,000 for creating the MCS approved in the previous modification (September 14, 2021), of which \$75,000 was approved as a contingent budget request in 2021 and the remaining \$125,000 was approved as part of the 2022 Aviation Environment and Sustainability operating budget.

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The budget for the original ILA as approved on April 27, 2021 (to analyze energy and technology alternatives for Port facilities) was \$127,000 from the Energy and Sustainability Committee Fund, and \$23,000 from the Environment and Sustainability Center of Expertise operating budget, for a total of \$150,000.

**ATTACHMENTS TO THIS REQUEST**

(1) Cover page and appendices to be added to the ILA

(2) Existing ILA as signed by Commission September 14, 2021

(3) Presentation

**PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

September 14, 2021 – The Commission authorized the Executive Director to modify the existing interlocal agreement with NREL to include transportation analyses, including the development of a passenger mode choice simulator.

April 27, 2021 – The Commission authorized the Executive Director to enter into an interlocal agreement with NREL to analyze energy and technology alternatives for both aviation and maritime facilities to help meet Century Agenda environmental and energy goals.

Template revised June 27, 2019 (Diversity in Contracting).

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