COMMISSION
AGENDA MEMORANDUM **Item No.** 10a

ACTION ITEM **Date of Meeting** May 23, 2023

DATE : May 16, 2023

TO: Stephen P. Metruck, Executive Director

FROM: Stephanie Meyn, Climate Program Manager, Aviation Environment & Sustainability
Sarah Cox, Director, Aviation Environment & Sustainability
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SUBJECT: **Sustainable Aviation Fuel Emission Attributes Pilot Purchase Program**

Amount of this request: $1,000,000
Total estimated project cost: $1,000,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to execute contracts with eligible airlines for air pollution emission reductions from qualifying sustainable aviation fuel (SAF) fueled and used at Seattle-Tacoma International Airport as part of a pilot project, not to exceed a total cost of $1,000,000.

EXECUTIVE SUMMARY

The intent of this pilot project is to provide SEA an opportunity to gain experience in new and emerging markets pertaining to SAF and to explore the benefits and hurdles to the availability of SAF for use at the airport, while also offering direct air pollution reduction benefits to SEA, the traveling public, airline partners and surrounding communities. The Port has determined that SAF will play an increasingly key role in aeronautical operations at SEA and seeks to further investigate the logistical and development requirements for expanding the availability of SAF at the airport, and to better understand the economic opportunities in SAF markets, including the environmental attribute markets.

This will be the first project in the world to contractually convey and monetize the air pollution or non-greenhouse-gas related reduction benefits of using SAF. The pilot project is for the air pollution reduction benefits of up to 1 million gallons of SAF fueled at SEA. The airport has worked with supply contractors including Boeing's existing fuel supplier to make additional SAF available for purchase to airlines at SEA in 2023.

In 2017, the Port commissioned a report by Carbon War Room (a division of Rocky Mountain Institute) and SkyNRG to evaluate innovative approaches to support sustainable aviation fuel (SAF). The report analyzed the concept of purchasing the environmental benefits or "environmental attributes" of SAF, rather than a direct fuel purchase. The environmental benefits of SAF include reducing lifecycle greenhouse gas emissions by ~80%, as well as other air pollutants including ultrafine particulate by 80% and sulfur emissions by 90%. This pilot project is a response to that research effort after significant program development and our learned experience purchasing other environmental attributes (e.g. those from renewable natural gas).

Under this pilot, SEA intends to purchase 100% of the air pollution (otherwise known as "non-CO_2") reduction attributes of higher-blend (minimum 10%) SAF fueled at this airport.

While the exact cost per cumulative ton of total pollutant reductions is yet to be finalized, the cap or ceiling of this budget request is the equivalent of no more than $1 per neat (or pure unblended) gallon of SAF.

JUSTIFICATION

It is widely accepted that U.S. airports play and will continue to play a key role in transitioning air carriers to SAF to reduce the environmental impacts of the aviation industry, and the Port has long identified SAF as a central environmental priority. Relatedly, the Port has determined that the supply chain and availability of SAF at its airport will be a key operational consideration for both SEA and its partner air carriers over the coming decades.

It is in the proprietary interest of SEA to ensure that airport staff and Port policymakers have direct knowledge and experience in terms of the availability and barriers to use of SAF at SEA, and also the environmental attributes associated with the use of SAF and the potential for leveraging such environmental attributes for both potential monetization and also for use as regulatory offsets in connection with airport operations. The SAF Pilot Program offers a direct opportunity for SEA staff and Port policymakers to investigate and gain valuable insights as to developing SAF environmental attribute markets, as well as the Port's potential participation in those markets, and to take affirmative steps to prepare the airport for what is anticipated to be a growing need for the use of SAF in the aviation industry.

Moreover, this project meets the Port's Century Agenda Goals to reduce air pollution and Scope 3 emissions by 2030 and 2050. If the goal of one million neat gallons of SAF is met, this project will reduce Scope 3 emissions by 9,750 metric tons. The largest contributor to Scope 3 emissions at the airport is aircraft emissions, and currently the only available strategy to reduce this category of emissions in any significant way is through the use of SAF.

The experience and knowledge gained through implementation of the SAF Pilot Program also aligns with the United States 2021 Aviation Climate Action Plan, and in particular the United States Department of Transportation (and Energy and Agriculture)'s SAF Grand Challenge,

which provides incentives to a wide variety of stakeholders, including airports, to develop technology and infrastructure to support the use of SAF. With the lessons learned through this SAF Pilot Program, SEA will be better positioned to support these development goals.

More broadly, the Washington state legislature has recently enacted numerous state laws underscoring the importance of state and local government participation in the effort to prevent/mitigate the adverse impacts of climate change and more specifically the adverse environmental impacts of government activities, including within the transportation sector. In response to these legislative initiatives, the Port has a fundamental governmental responsibility to participate in efforts in Washington to address these issues, including through promotion of the use and availability of SAF at SEA, the state's largest airport.

On December 19, 2017, the Port adopted a motion to develop a comprehensive SAF strategy that includes the goal to have 10% SAF at SEA by 2028. This pilot project, which mandates a minimum 10% SAF blend, supports making progress on achieving this goal.

Additionally, in response to that motion, the Airline-Airport MOU group at SEA presented the SAF Strategic Plan for adoption in July 2018 that includes Strategy 3, Airport Purchase of SAF Co-Benefits. This pilot project is a product of that original concept.

DETAILS

Like most large airports in the United States, SEA is well-aware of the key role SAF plays and will continue to play in the commercial aviation industry and the need in the coming years to assist in supporting the availability and use of SAF at the airport. Into the foreseeable future, operations at SEA will be directly impacted by the use and availability of SAF for its airline partners. Further, given the importance of SAF and similar alternative fuels, the Port believes airports will need to be key players in understanding, developing and utilizing environmental attributes associated with SAF.

Beyond the direct benefit of providing primary energy or propulsion, clean fuels such as SAF also create other positive externalities through their production and consumption. For example, SAF reduces air pollutants, reduces greenhouse gas emissions, and benefits regional economic development—all of which are of value to airports. There may also be additional positive impacts that include reduced fuel price volatility and increased energy independence. These characteristics are known as "co-benefits" of SAF. The umbrella term for the numerous positive environmental externalities associated with the production and consumption of SAF are known as "environmental attributes".

Over time, economic value has become associated with specific environmental attributes associated with clean fuels with the introduction of low carbon fuel standards in some jurisdictions or markets. For example, this approach has allowed regulators to place the highest economic value on fuels that reduce lifecycle carbon emissions the most.

In the case of SAF, the air pollution or "non-CO_2" emissions benefits of the fuel are becoming increasingly relevant. This is because non-CO_2 emissions can have both additional climate and air quality impacts.

For this reason, the value of these non-CO_2 environmental attributes is of interest to airports and to regulators. Seattle, San Francisco, and Copenhagen Airports are at the forefront of examining what role airports can have in relation to SAF and near-airport air quality, and the European Emission Trading Scheme (EU-ETS) is expected to develop a method for calculating the value for the non-CO_2 impact of aviation and how that can be mitigated by SAF by ~2027.
This pilot project recognizes that there is a foundation of science demonstrating that using SAF results in a significant reduction in key air pollutants, namely ultrafine particulate matter (PM2.5) and oxides of sulfur (SOx), as shown in this graphic from Airports Cooperative Research Project 02-80: State of the Industry Report:

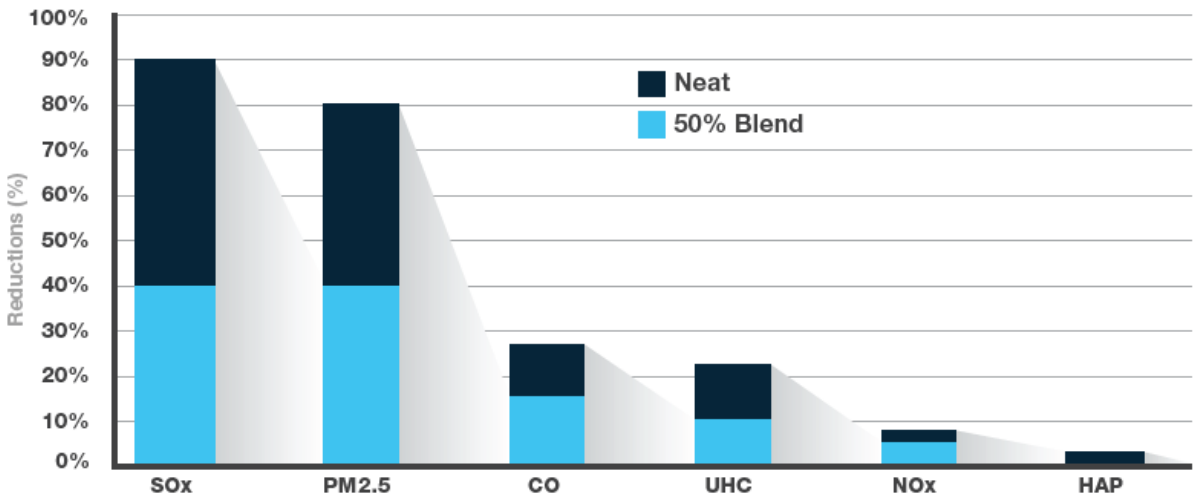

Figure ES-2: Representative Air Pollutant Emission Reductions from the Use of SAJF

If one million gallons of SAF are used at SEA, this will result in a reduction of approximately 220 lbs of ultrafine particulate and at least 650 lbs of oxides of sulfur. It is important to note that SEA Airport is located in an airshed that is in attainment for the National Ambient Air Quality Standards (NAAQS), and the airport's air permit does not require us to purchase emission reduction credits. We nevertheless pursue projects and investments on a voluntary basis that continue to improve air quality in our region. Airports in attainment with the NAAQS are still eligible to bank emission credits if they work with their local air authority (we last banked air pollutant credits with Puget Sound Clean Air Agency in 2008). Although at this time, this SAF pollution air pollution attribute purchase is voluntary and the long-term monetary value of the attributes cannot be defined with precision, the Port will receive substantial tangible benefits in

connection with implementing the SAF Pilot Program, including direct knowledge and experience regarding the logistical and development requirements for facilitating SAF availability and use at the airport, an expanded understanding of the economic development potential of SAF production and use at the airport, significant contractual commitments from airlines who elect to participate in the program, as well as potential deployment of the SAF environmental attributes in the future as regulatory offsets for airport operations and projects.

The measurable and tangible SAF air pollution emission reduction benefits expected to be achieved through this pilot are similar to the benefits of other airport investments. For example, airports and airlines investment in systems such as pre-conditioned air and electric GSE to reduce airline-related air pollutants. The SAF Pilot Program is another effective way to apply funds to obtain these similar air pollutant reduction benefits.

In connection with the SAF pilot project, staff is further researching options to sell and retire a portion of these air pollution reduction credits to travelers via The Good Traveler, the airport-based traveler offset program of which SEA is a member. Staff intends to test this idea by offering these emission reduction credits only to travelers at SEA, and allow them to actively participate in reducing air pollution through SAF. While not part of this Commission request and not yet fully scoped, Port staff and other airport participants of The Good Traveler believe this could provide an excellent opportunity to educate airport travelers about the environmental and community benefits of SAF.

How the Pilot Will Work

Upon Commission approval, Port staff will finalize the Information Packet including the template Participation Agreement (contract) between the Port and Airlines, all required documentation, program requirements, etc. The Port will publish the Information Packet to a website that will be referred to hereafter as the Info Packet.

The conditions for participation are expected to include but are not limited to:

- Participating airlines must warrant and represent they have contracted supply of SAF;
- Qualifying SAF reduces at least 70% CO_2 compared to fossil kerosene (Jet-A) in its full life-cycle;
- Participating airlines will be required to document purchase of the SAF and use at SEA Airport;
- Participating airlines must warrant and represent they contractually received the air pollution (non-CO_2) attributes from the SAF producer and can convey them to the Port;
- Qualifying SAF must be used for refueling at SEA airport between January 1, 2023 and December 31, 2023;
- Qualifying SAF must be received in the airplane's tanks at a blend level no lower than 10%; and

- The Port is considering minimum and maximum volume SAF commitments for airlines who wish to participate in the program, both to accommodate efficient administration of the program and also to encourage broad airline participation.

Schedule

- June – Port provides Info Packet via web post that contains the draft Participant Agreement, specific program details, instructions, etc.
- July – Deadline for airlines to notify Port of interest to participate in the SAF pilot (no legal commitment at this point). This allows Port to confirm sufficient funds for amount of SAF anticipated.
- Beyond July 1 – Airlines begin signing agreements with Port.
- SAF deliveries until Dec 31, 2023. One time payments to airlines in 2024.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Purchase the SAFc (Scope 3 SAF certificates). These certificates are typically purchased by corporations to reduce their travel or air cargo carbon emissions with SAF. These are *not* Scope 1 emission reductions which are associated with buying the SAF directly and owned by the airlines.

Pros:

(1) Potentially lower cost per gallon of SAF.
(2) Reduces lifecycle greenhouse gas emissions.

Cons:

(1) SAFc are fully fungible and related to CO_2 (global climate pollutant) and would **not** require the SAF to be used at SEA Airport.
(2) There would be no local air quality benefit.

This is not the recommended alternative.

Alternative 2 – Purchase greenhouse gas offsets.

Pros:

(1) Inexpensive ($tens of thousands).

Cons:

(1) No direct benefit or support to advance SAF industry, or anything connected to aviation emissions.
(2) No direct air quality benefit to the Airport and communities near SEA.

This is not the recommended alternative.

Alternative 3 – Purchase the air quality emission benefits of qualifying SAF used at SEA Airport.

Pros:

(1) Direct air quality emission benefits at the airport and surrounding communities.
(2) Testing and demonstration of innovative program.

Cons:

(1) Logistically challenging (agreements, demonstration of compliance, fueling, etc).
(2) More expensive than purchasing greenhouse gas offsets.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

Annual Budget Status and Source of Funds

The approved 2023 operating budget included an expense of $1,000,000. The funding source would be the Airport Development Fund. The expense would not be included in the airline rates and charges.

ATTACHMENTS TO THIS REQUEST

(1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

July 24, 2018 – The Commission was briefed on the Port of Seattle's Sustainable Aviation Fuel Strategic Plan, including Strategy 3, purchasing SAF co-benefits.