Port of Seattle

COMMISSION
AGENDA MEMORANDUM **Item No.** 6b

ACTION ITEM **Date of Meeting** September 25, 2018

DATE: September 25, 2018

TO: Stephen P. Metruck, Executive Director

FROM: Greg Whiting, Manager, Aviation Utility
Paul Shen, Sr. Civil Engineer, Aviation Facilities & Infrastructure

SUBJECT: Request authorization to execute new contract for sewer cleaning

Amount of this request: $1,500,000
Total estimated project cost: $1,500,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to execute a contract for up to five (5) years for an estimated cost of $1,500,000 for routine sanitary sewer system cleaning at both Airport and Maritime facilities.

EXECUTIVE SUMMARY

This contract will perform periodic sewer system cleaning, which is required to ensure sewer system operation, minimize sewage related costs and maximize sewer system asset life. About 90% of the anticipated expenditure will be to clean the sanitary sewer system at the Seattle-Tacoma International Airport. The STIA sewer system processes approximately 150 million gallons of predominantly biological and restaurant waste annually, including grease discharged from airport restaurant facilities. The other 10% is to conduct similar routine cleaning activities at Maritime facilities.

JUSTIFICATION

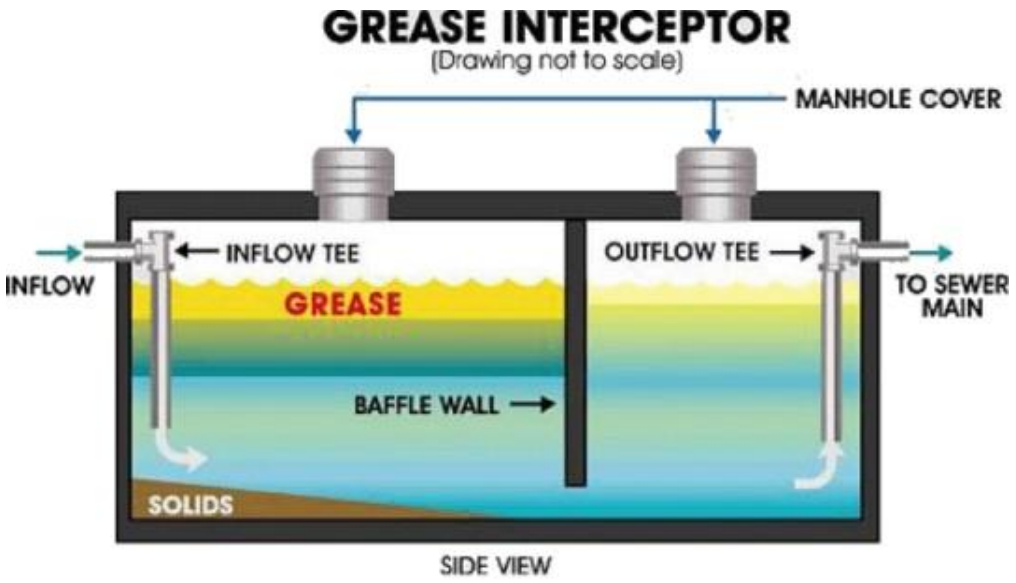
About 20% of the sewer cleaning covered under this contract, such as jetting and root ball removal, are required to ensure that Airport and Maritime sewers are clear of blockages and are functional.

The other 80% of the request is for the specific purpose of cleaning the 16 Airport grease interceptors, 57 times per year (total) per a schedule developed by Aviation F&I Civil Engineering. Cleaning helps to minimize sewer utility biological oxygen demand (BOD) surcharges (currently over $400,000/year). The surcharges are applied by the sewer utility when chemicals that contribute to the consumption of oxygen in the water (such as fats, oils and grease [FOG] from restaurant dishwashers) are in the sewage at a concentration greater than 369 milligrams/liter. The Airport's average BOD is about 600 milligrams/liter and would be significantly higher without cleaning.

Cleaning also extends the life of the assets. Early replacement of grease interceptors is disproportionately expensive because they are mostly buried beneath the airfield. It is desirable for them to last as long as possible.

DETAILS

About 20% of the sewer cleaning activities performed via this contract, such as jetting and root ball removal, are required to ensure that the sewers are clear of blockages and are functional. The rest of the cleaning activities are specifically required to clean the grease interceptors at the Airport. Grease interceptors are multi-thousand-gallon tanks (see picture) that are installed in the sewage lines. They are used to capture FOG discharged through restaurant drains.



Wastewater flows from the main sewer line into the chamber on the left, where the grease floats to the top, to the left of the baffle wall. Cleaning removes the grease layer shown in the first chamber.

If the interceptors are not periodically pumped out, the FOG layer (labeled grease in the picture) becomes thick enough to flow underneath the baffle wall (also labeled in the picture). Cleaning removes the FOG while it is in the interceptors, which keeps the FOG from reaching the sewer utility and thus keeps the removed FOG from contributing to the BOD surcharge.

Scope of Work

The contract scope includes routine sanitary sewer cleaning activities, principally grease interceptor pumping, but also such activities as sewer jetting and root ball removal.

Schedule

Most activities are on call as needed. Grease interceptor cleaning is carried out per the schedule below, which was developed by Aviation F&I – Civil Engineering.

Interceptor Location	Gallons	Cleaning frequency
NORTH SAT - N9	9000	3 MONTHS
CTE SOUTH	12000	3 MONTHS
CONCOURSE B B-1	6000	3 MONTHS
SOUTH SAT - S5	12000	6 MONTHS
CONCOURSE A - IAF	9000	3 MONTHS
CONCOURSE A - A-1	9000	6 MONTHS
CONCOURSE A - A-3-4	9000	6 MONTHS
CTE NORTH	12000	45 DAYS
BAG WELL - C1 RAMP AREA	4000	45 DAYS
CONCOURSE B B-8	6000	6 MONTHS
CONCOURSE C C-8	6000	6 MONTHS
CONCOURSE C C-12	6000	4 MONTHS
CONCOURSE A - ELECTRIC SHOP	9000	4 MONTHS
CONCOURSE D D12	9000	4 MONTHS
NORTH GT LOT	9000	3 MONTHS
SOUTH SAT- S1/S2	9000	6 MONTHS

Cost Breakdown	This Request
$250,000 in 2019, ongoing escalation	$1,500,000 (total over 5 years)

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Execute procurement process for a new contract

Cost Implications: Direct cost of average $300,000/year (est. $250,000 in 2019); minimization (not immediately quantifiable; a study is underway) of BOD surcharge costs associated with grease interceptors.

Pros:

(1) New competition
(2) Ensures continued efficient operation of sewer systems for the Aviation and Maritime divisions, including minimizing BOD discharges to the sewer systems
(3) Minimizes lifecycle costs to the sewer system, including lower per unit cleaning costs, lower BOD discharge to the sewer system, and longer service life of grease interceptor system.
(4) Have an on-call resource to respond to sewer system emergencies such as blockages.

Cons:

(1) Additional CPO and management resources would be required during the procurement process.

This is the recommended alternative.

Alternative 2 – Do not have a standing contract and instead only clean the sewer systems on an emergency basis

Cost Implications: In the absence of an ongoing routine cleaning contract, emergency cleaning service costs would be incurred more often and would probably be at least twice the currently estimated $30,000 - $45,000/year. Grease escaping into the sanitary sewer from airport restaurants would gradually increase as the capacity of the grease interceptors would eventually be exceeded. At steady state, BOD surcharges would increase from about $400,000/year to somewhere between $800,000 - $2 million/year.

Pros:

(1) Reduced sewer cleaning costs

Cons:

(1) Increased sewer BOD surcharges, exceeding savings from reduced cleaning
(2) Higher risk that Port will exceed maximum BOD limit of sewer utility and thus have to address BOD on an emergency basis
(3) Higher unit cost for routine sewer cleaning activities
(4) Longer response time to emergencies

This is not the recommended alternative.

Annual Budget Status and Source of Funds

Budget requests are submitted annually by the Aviation Utility and by Maritime Maintenance and are included in the annual operating budget.

ATTACHMENTS TO THIS REQUEST

None

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

September 8, 2015 – The Commission approved the previous contract (item 4e)