MANAGING MEMBERS
BRIEFING ITEM

Item No. 4A
Date of Meeting January 16, 2018

DATE: January 3, 2018

TO: Managing Members

FROM: John Wolfe, CEO

Sponsor: Jason Jordan, Director, Environmental and Planning Services

Project Manager: Sara Cederberg, Sr. Manager, Air Quality & Sustainable Practices

SUBJECT: Clean Truck Program – Briefing & Draft Policy Motion

A. BRIEFING REQUESTED

Briefing and draft policy motion to update the provisions of The Northwest Seaport Alliance's (NWSA) Clean Truck Program, and to direct staff to seek lease amendments at the international container terminals in the north and south harbors to implement the updated program.

B. SYNOPSIS

Staff recommends providing a 90-day grace period to the original January 1, 2018, target established in the Clean Truck Program. Staff will negotiate lease amendments with international container terminal tenants and users to contractually require them to only allow drayage trucks with 2007 or newer model year engines, or trucks with equivalent emission controls certified by the U.S. Environmental Protection Agency (EPA) or the California Air Resources Board, onto their cargo terminals after April 1, 2018.

Staff briefed the Managing Members on the Clean Truck Program at the November 7, 2017, meeting. The Managing Members decided a formal action is necessary to provide certainty to the market and requested the following further information to better inform an action:

1. Suggestions for equity for drivers who have made the investment in new trucks;
2. Suggestions for equity for drivers with financial hardship;
3. Update on lease amendment status; and
4. Project update on gate technology

NWSA staff has met with engaged stakeholders, such as marine terminal operators and trucking companies and drivers, to gather the requested information.

Upon Managing Member approval of this requested action, leases will be amended and are on schedule to meet the April 1, 2018, timeline.

The full gate technology build-out scope, schedule, and budget for the South Harbor will be presented at the March Managing Members meeting. The current schedule shows RFID tracking technology operational in late summer/early fall 2018.

To maintain as close as possible to the original timeline for turning noncompliant trucks, international Marine Terminal Operators (MTOs) will implement sticker-based compliance action in the South Harbor as an interim measure beginning April 1, 2018. International Marine Cargo Terminals in the North Harbor will use the current RFID system to identify and implement the 2007 standard beginning April 1, 2018.

C. BACKGROUND

Complete program background can be found in the Managing Member Briefing presented November 7, 2017 (see *Attachment 1).*

The Northwest Seaport Alliance remains committed to responsible, sustainable growth that protects public health and the environment. The Ports of Seattle, Tacoma, and Vancouver, BC, collectively set a goal within the Northwest Ports Clean Air Strategy (NWPCAS) in 2008 that only trucks with a 2007 engine or newer or equivalent emission controls would be allowed to serve the international container terminals (see Table 1) by January 1, 2018. The NWSA became a full member of the NWPCAS in 2015.

The aim of the NWPCAS is to reduce air emissions from maritime and port-related activities that affect air quality and contribute to climate change in the Puget Sound-Georgia Basin air shed. The strategy encompasses goals across the whole scope of port operations: ocean-going vessels, harbor vessels, trucks, cargo-handling equipment, locomotives and fleet vehicles. The NWPCAS relies on voluntary programs, rather than regulation, to reduce emissions. Through the implementation of the NWPCAS , the ports have achieved significant progress in reducing emissions in several areas: at berth emissions for ocean going vessels using low-sulfur fuels and shore power; reduced cargo handling equipment emissions through replacement and retrofits, reduced on-terminal truck emissions through engine retrofits and scrap-and-replace incentive programs, and reduced locomotive emissions through application of idle-reduction technologies and engine rebuilds.

These programs are effective and preliminary results from the 2016 Puget Sound Maritime Emissions Inventory show that the NWSA is on track to achieve the overarching 2020 goals within the NWPCAS. Preliminary estimates show diesel particulate matter (DPM) reductions in the Puget Sound airshed likely over 60% per ton of cargo, when comparing 2005 to 2016 levels. Staff will update the Managing Members with final results once the report is finalized in February.

- Goal 1: Reduce diesel particulate matter (DPM) emissions per ton of cargo by 75% by 2015 and by 80% by 2020, relative to 2005.
    - In 2010/11, the average reduction was 22%. This will be updated following the 2016 emissions inventory.

- Goal 2: Reduce greenhouse gas emissions (GHG emissions) per ton of cargo by 10% by 2015 and by 15% by 2020, relative to 2005.
    - In 2010/11, the average reduction was 9%. This will be updated following the 2016 emissions inventory.

The Washington State Department of Ecology publishes a comprehensive emission inventory every three years that includes both point source emissions and mobile sources. In the most recent inventory, 2011, on road mobile sources, which includes all vehicles, not just heavy-duty trucks, contributed 45% of the diesel particulate matter emissions and 7% of PM 2.5 emissions in the state in 2011.

According to the 2011 Puget Sound Emission Inventory, heavy duty trucks associated with maritime activity contribute roughly 5% of diesel particulate matter (DPM) and 22% of the CO2e associated with maritime-related transportation activity in the Puget Sound airshed. Ocean-going vessels were the predominant emitters of DPM (63%). With the implementation of the emission control area, DPM emissions from trucks are a relatively larger portion of the DPM emissions in the airshed.

In 2011, of the DPM emitted by maritime-related to heavy-duty trucks in the Puget Sound airshed, 76% is associated with NWSA (45%, POS; 31%, POT). Of the PM2.5, 87% is associated with NWSA (53%, POS; 34%, POT). The DPM emissions occurred mostly in King County (45.7%) because of the truck routes; 16.8% occurred in Pierce County. This distribution influenced how the two Clean Truck Programs evolved over time.

Strategies included in this memo primarily address reducing PM2.5 and DPM emissions, not GHG emissions directly.

As of October 31, 2017, approximately 52% of the trucks serving the gateway met the standard. The 2007 standard removes 85-90% more diesel particulate matter as compared to pre-1994 trucks.

Table 1: International Container Terminals included in NWSA Clean Truck Program

North Harbor	South Harbor
T-18	Husky
T-30	PCT (Pierce County Terminal)
T-46	WUT (Washington United Terminals)
T-5 (when operational)	East Sitcum (TCT)

In searching for the best solution, staff developed and considered the following guiding principles:

1. Support comprehensive goals and accompanying programs that benefit the environment we live and work in, the surrounding community that we share the air with, and our workforce that helps us move cargo throughout our gateway.
2. Honor the importance of drayage truck drivers in the supply chain and treat both independent and fleet drayage truck drivers fairly.

3. Implement the clean truck program consistently across the gateway in both the South and North Harbors.
4. Acknowledge those drayage truck operators who have made an investment to meet the 2007 truck engine year standard.
5. Be aggressive in working with the supply chain to improve air quality, while avoiding major harm to the gateway and our ability to move cargo.
6. Learn from this experience to inform future iterations of the NWPCAS, of which trucks are one part of the larger framework, and develop strong partnerships with various stakeholders to develop consensus-based goals in the future.
7. Commit financial and human resources to support the conversion of the fleet and to reduce emissions.

D. CURRENT STATUS

Feedback from Terminal Operators and Trucking Companies

Staff met with trucking companies and marine terminal operations in November and December 2017. These stakeholders agree that there are likely too many trucks currently serving the North and South Harbors and operations could likely improve with an estimated 10-20% reduction in trucks.

The trucking companies consistently state their highest priority is to improve efficiency at the terminals. If drivers are able to make 3-4 trips per day, ideally 5, then the economics of financing newer trucks becomes easier.

Staff is working on improving efficiency at the terminals through programs like extended gate hours and better turn time tracking.

1. Equity for Compliant Truck Drivers

Fleets, motor carriers, and truck drivers who have invested in newer trucks have complied with the announced objectives of the NWSA. The size of investment ranges, though it is not uncommon for companies to invest hundreds of thousands of dollars in new equipment and maintenance. They feel that if the timeline is extended, they will be at a competitive disadvantage because of the additional cost of financing and maintaining the newer trucks versus non-compliant competitors. The timing of the decision is important because many companies renegotiate contracts early in the year and need to factor in these higher overhead costs. Trucking companies developed a list of five alternative ways the NWSA could reward drivers for investing in newer trucks:

Option 1: Speed lanes for compliant trucks/fewer gates available for non-compliant trucks

Option 2: Provide gates for compliant trucks only (pick one day a week or use extended gates)

Option 3: Only allow clean trucks during the morning hours

Option 4: Make terminals pay for long queue times because wait times are currently charged to trucking fleet customers

Option 5: Phasing in the requirement over time (e.g., stepping up truck model year)

After discussion between MTOs, trucking companies and staff, we have the following observations:

Option 1: Speed lanes were ruled out because of limited space to queue non-compliant trucks and the inability to deploy such a strategy equally across all terminals.

Option 2: This option gained initial support from the MTOs, however, the trucking companies feared the MTOs would choose slow days and they would not be able to derive enough benefit from a program that initially focused on 1-2 days a week.

Option 3: Trucking companies expressed concern over difficulty scheduling and communications with drivers. This option would require custom software development to implement via the RFID readers.

Option 4: Absent an agreed upon tracking methodology and technology, this option is not currently implementable.

Option 5: Concern from trucking companies and MTOs that this would be confusing to drivers and difficult to monitor. There is no change in emission controls between model year 1994 and 2007 engine year, therefore no environmental benefit to a stepped approach.

After exploring the above options, the trucking companies agreed that a hard cut-off is the best approach for the trucking industry.

2. Equity for Non-Compliant Truck Drivers

Again, the trucking companies and drivers consistently state their highest priority is to improve efficiency at the terminals. If drivers are able to make 3-4 trips per day, ideally 5, then the economics of financing newer trucks becomes easier. Both private and public organizations have provided support for drivers with financial hardships that might prevent realistic financing for newer trucks. For example, many motor carriers offer large signing bonuses to drivers who have compliant trucks.

The ports and the NWSA have historically sought grant funding to serve those with the highest need and have successfully scrapped 413 trucks through the Seaport Truck Scrappage and Replacements for Air in Puget Sound (ScRAPS) program. Unfortunately, after several rounds of partnership between the Puget Sound Clean Air Agency (PSCAA), NWSA and the ports, PSCAA initially supported a joint application for the 2017 round of DERA funding for a further ScRAPS program that would have replaced at least 70 more trucks, but PSCAA subsequently prioritized DERA funding elsewhere due to a lack of certainty regarding the implementation of the Clean Truck Program.

At the November 7, 2017, meeting, the Managing Members authorized staff to seek a Washington state legislative correction to E2SHB 1303: Encouraging the Use of Cleaner Energy clarifying statutory authority for public ports to invest in air quality improvement equipment, fuels, and other methods that provide emission reductions for engines, vehicles and vessels.

Alliance Government Affairs, Environmental, and Legal staff have crafted proposed legislation clarifying the authority of port districts to offer programs relating to air quality improvement equipment and fuel programs that provide emission reductions for engines, vehicles, and vessels. Senators Guy Palumbo and Shelly Short have agreed to sponsor the bill in the Senate, while Representatives Mary McBride and Dan Griffey have agreed to sponsor it in the House of Representatives. NWSA Government Affairs is working with House and Senate Local Government Committee chairs to schedule hearings on the measures in the opening weeks of the legislative session, which begins January 8, 2018. To date, Government Affairs has met with twenty lawmakers from Pierce and King counties to discuss the bills and has consistently received strong, positive feedback on the bill.

Truck Driver Outreach

Staff have sought cost-effective ways for drivers to update their trucks and presented findings at the Trucker's Outreach Forum (TOF), a public forum for drivers that began in January 2017. The Trucker Outreach Forum is run by the trucking companies serving the gateway and has regular attendance of 30-50 companies, who represent over 1,200 drivers. Staff have presented Clean Truck Updates at the February, April, June, July, August, October, and November meetings. Additionally, the TOF has featured presentations on solutions for upgrading or retrofitting equipment, including a presentation by Business Impacts Northwest, a non-profit community development financial institution (CDFI), on its Green Trucking Loan program, used LNG/CNG truck demonstrations and other retrofit products.

On June 19, 2017, staff held meetings with a self-selected subset of the TOF, a group of 35 trucking companies, ranging in size, to provide a recommendation to commission and again on July 27 and August 30 for further brainstorming and feedback.

Staff presented the Clean Truck Program to the NWSA Executive Advisory Council at their July 13 meeting. September 16, NWSA sponsored a drayage driver workshop organized by the African Chamber of Commerce at South Seattle Community College which included an overview and update on the Clean Truck Program. Approximately 95 drivers were in attendance.

Staff have also developed procedures for engine repowers and diesel particulate filter (DPF") retrofits, in partnership with PSCAA, to provide more solutions to drivers. These are discussed in further detail in the *Equivalent Emission Control Technologies* section.

Staff distributed 800 fliers in the truck queues at the end of November 2017 informing drivers the January 1, 2018, date was under review and that the Managing Members would vote on the new implementation date. These fliers are also handed out with every new truck sticker issued in the South Harbor. The NWSA website was updated at the same time, with more background and with a list of FAQs (https://www.nwseaportalliance.com/trucks). Eight sandwich boards were installed at the gates for truckers to see as they were queuing. Staff fields at least 5 calls a day from drivers call to inquire on the timeline.

Future Trucker Outreach:

Staff has developed an extensive communication and outreach strategy to ensure truck drivers are aware of the upcoming changes and have every opportunity to become compliant before April 1, 2018.

As outlined above, proactive communications have been a consistent focus of the project team. These efforts will be redoubled in the upcoming weeks. Staff will utilize our trucker listserv, containing over 3,300 members, to inform drivers and stakeholders of information and engagement opportunities.

Our NWSA webpage regarding the Clean Truck Program will be updated in phases; first to reflect the staff recommendation, pertinent information, and schedule pending Managing Member action. After the February 6 meeting, the webpage will focus on tools and steps drivers need to know before the April 1 enforcement date.

In addition to a previously scheduled trucker outreach meeting on January 31, staff is planning two trucker open houses (one in Seattle and one in Tacoma) on February 3. These events will bring together NWSA staff and commissioners, truck dealerships, retrofit options and financing partners to ensure truckers are aware of rationale for the staff recommendation and tools available to assist them in becoming compliant.

The plan also calls for a combination of social media, emails, communication through trucking companies, fliers and potentially contracting with NGOs, specifically the African Chamber of Commerce Pacific Northwest, to ensure coverage within communities most likely to be affected.

Staff has developed a list of interested parties with whom we will communicate throughout the implementation period.

3. Lease Amendments

In order to ensure all marine terminal operators uniformly follow the program, the leases for the South Harbor terminals require updates. Eventually, all NWSA international container terminal leases will be updated for consistency.

The four international terminals in the South Harbor have indicated a willingness to adopt the lease amendment and support the Clean Truck Program. Both the terminal operators and shipping lines support sustainability initiatives and have a vested interest in the success of the gateway. They support the guiding principle that all international marine container terminals in the NWSA will be held to the same standards.

The three North Harbor international container leases impose the 2007 engine truck standards on January 1, 2018, per section 9000 of the Port of Seattle tariff. There is a provision in section 9000(4) of the tariff that recognizes the Port/Alliance's ability to allow in non-compliant trucks. For purposes of keeping the truck programs consistent in both harbors, NWSA has sent letters to the North Harbor international terminal operators requesting they delay implementing the 2007 engine truck standards until April 1, 2018.

See *Attachment 2* for the lease amendment and tariff language.

4. Gate Technology

NWSA is committed to implementing a Drayage Truck Management System (DTMS) to efficiently track and monitor the Clean Truck Program. The DTMS involves a Radio Frequency Identification (RFID) system that will automatically identify drayage trucks at

terminal gate facilities and determine if the trucks comply with Clean Truck Program standards. The DTMS technology is currently installed at North Harbor terminals and will be installed at South Harbor international terminals in 2018. The data produced by the DTMS will be leveraged in future development of a Port Community System (PCS) that promises to provide a neutral and open electronic platform for the intelligent and secure exchange of information between our public and private stakeholders, improving the competitive position of the NWSA.

The objectives of the DTMS are to improve:

- Safety and security by requiring drayage dispatching companies to register into an NWSA-implemented DTMS and to maintain current records of company, truck and possibly driver data that can be further verified by other governmental authorities for safety and security compliance;

- Mobility, operational efficiency and emission reductions by adopting and leveraging the use of innovation and technology as integral components of the DTMS to enable and facilitate the collection and sharing of operational data and information that would improve freight traffic capacity and throughput efficiencies resulting in improved mobility, seaport performance and reduced fuel consumption and emissions;

- Air quality by setting standards and provisions specifying the manufacturer's make, model/engine type, fuel type, and year of heavy commercial trucks that would be allowed to perform drayage operations in and around facilities within Port of Tacoma and Seattle/NWSA property boundaries and to collect data for use in estimating emissions from idling drayage trucks; and

- Collaboration and data sharing with port community stakeholders that include federal and state agency partners such as the U.S. Department of Transportation Federal Motor Carrier Administration, the Intermodal Association of North America, Washington State Department of Transportation (WSDOT), Washington State Department of Licensing (DOL), Washington State Patrol, and Washington State Department of Ecology as well as private industry partners that include, but are not limited to, terminal operators, motor carriers (MCs), independent owner-operators, intermodal equipment providers, beneficial cargo owners (BCOs), shippers, freight forwarders and neighboring warehouses and distribution centers.

The results of the evaluation and related recommended project will be presented at the February 6, 2018, Managing Member meeting.

Biofuels

The Managing Members requested additional information on the use of biofuels toward meeting the emission targets of the Clean Truck Program. While substituting biodiesel for fossil fuel diesel in heavy-duty engines is known to reduce particulate matter (PM) emissions, the reductions expected from switching to biodiesel in older drayage trucks are not equivalent to the model year 2007 or newer emission standards set out in the Clean Truck Program.

The U.S. Environmental Protection Agency's (EPA) emission standard for heavy-duty trucks enacted in 2007 required a 90 percent reduction in emissions from the previous standard. By

comparison, estimated PM emission savings associated with switching from fossil fuel diesel to biodiesel, according to the U.S. Department of Energy, range from just 3 percent for B5 (biodiesel/fossil fuel diesel blend with 5 percent biodiesel) to almost 50 percent for B99 (pure biodiesel). Furthermore, switching to biodiesel would also cause a 10 percent increase in nitrous oxide (NOx) emissions for B99 fuel, suggesting that the switch could also have unintended negative effects. Additionally, many diesel engines are not approved to use biofuel blends higher than B5, so the use of biodiesel may not be universally applicable or commercially viable.

Biodiesel fueling infrastructure and the difficulty of enforcing an alternate fuel policy also pose logistical concerns. There are currently no biodiesel retailers in the Tacoma area and only two in Seattle, which are small and geared towards passenger cars, not heavy-duty trucks. There is also not a demonstrated method for terminal operators to quickly verify that trucks are actually burning biodiesel, meaning that a requirement for trucks to burn biodiesel would be difficult to verify and enforce.

In summary, switching to biodiesel may be one way to reduce PM emissions, but would not be equivalent to a 2007 engine and is unlikely to be an effective method of achieving the goals set out by the Clean Truck Program. Staff continues to monitor costs and appropriateness for other alternatively fueled vehicles, such as PACCAR's hydrogen fuel cell truck and Tesla's electric truck.

Equivalent Emission Control Technologies

The Clean Truck Program has always accommodated equivalent emission control technologies provided the technology has been verified to be effective by either the U.S. EPA or the California Air Resource Board (CARB). These range from natural gas-powered trucks to engine repowers and filter retrofits. As stated in the tariff, the NWSA must verify that the retrofit is appropriate, has been properly installed, and is operational. Approximately 40 trucks underwent retrofits to meet the previous 1994 truck requirement.

Because particulate matter builds up on diesel particulate filters over time, this accumulated material must be periodically removed through a process called regeneration to maintain the function of the filter and avoid impeding airflow through the engine. There are two different regeneration processes: passive regeneration which uses heat in the exhaust to oxidize the accumulated particulate matter, and active regeneration, performed while the truck is stopped, which utilizes additional generation of heat through burning of additional fuel, resistive heating, or other methods. Exhaust temperatures of 600 degrees Celsius are required to oxidize the diesel particulate matter, which can be reduced somewhat through the use of catalysts. These temperatures can be difficult to achieve in passive regeneration for drayage trucks due to short trip lengths and the idling that occurs due to trucks queuing at the gates. The inability of many engines to achieve the proper exhaust temperatures can make them ineligible for diesel particulate filter retrofits.

In the certification process for each approved diesel particulate filter device, the California Air Resources Board (CARB) puts forth a list of engine criteria that must be met for the retrofit to qualify as an equivalent control technology. These criteria are somewhat different for each device, but in general are focused on ensuring that 85% emission reductions will be achieved, that the diesel particulate filter will not harm the engine, and that the engine will not harm the

filter. Stipulations such as the engine being well maintained and not consuming oil at a rate higher than specified by the manufacturer, for example, are in place to both prevent the diesel particulate filter from causing problems to a weak engine and to prevent blow-by from damaging the filter. These eligibility rules may mean that some engines do not qualify for retrofitting and may need an engine repower, or, that significant maintenance would be required to obtain eligibility. This maintenance cost may mean that repowering is the better financial option, even if retrofit eligibility could be attained.

The NWSA Clean Truck website (https://www.nwseaportalliance.com/trucks) outlines the process for drivers to repower pre-2007 engine trucks with a new engine and associated diesel particulate filter (DPF). Staff will also be providing additional guidance for DPF retrofits without a repower for drivers who can demonstrate their typical duty cycle makes them a good candidate. Both processes require drivers and retrofit contractors to assess the appropriateness of an aftermarket solution for the truck's typical operation.

The November 7, 2017, memo mentioned HyTech Power as an aftermarket option staff has explored. The previous memo incorrectly associated the company HyTech with a pilot run by the Port of Vancouver and Environment Canada several years ago. That pilot project was in association with a hydrogen injection retrofit company no longer in business. Staff confirmed with both the Port of Vancouver and Environment Canada that HyTech was not one of the companies they engaged. HyTech is continuing to pursue CARB verification with a projected verification date in spring 2018.

Of the companies that Environment Canada did review, unfortunately none of the products tested showed a statistically significant reduction in fuel consumption or exhaust emissions. Port of Vancouver now also requires CARB or EPA verification for retrofits.

Domestic Terminals

The Clean Truck Program currently applies to international container terminals (see Table 1 above). As part of the next NWPCAS update, staff recommends extending the program to domestic terminals, but to phase in the program at a date yet to be determined, pending further analysis of the truck population entering these terminals. While there is overlap with the trucks serving the international terminals, there is a population of trucks with whom the NWSA has not had any prior communication or outreach through the Clean Truck Program.

Staff is analyzing extending the program to the domestic container terminals listed in Table 2, which excludes tug and barge operations. Information on the model years of trucks entering the terminals was obtained through the cameras that record license plate information at the terminal pedestal.

Table 2. Domestic Terminal Truck Data

Location, Terminal Name	2017 Truck Fleet	Trucks Currently in CT System	Trucks Meeting CT Requirements
South Harbor, TOTE	344 (Sept-Oct)	200	198 (58%)
South Harbor, West Sitcum Terminal*	584 (July-Aug)	404	310 (53%)
North Harbor, Terminal 25	No data	No data	No data

*SSA took over operations at West Sitcum during 2017. APM previously operated the terminal and provided truck data to the port for monitoring. Further data from West Sitcum will be available in early 2018.

E. FINANCIAL IMPLICATIONS

The costs associated with the design and construction of the gate technology will be included in future project request authorization memo and presentation which is scheduled for the March meeting.

The Capital Investment Plan (CIP) currently includes funding for the on-going Clean Truck Program costs and a project associated with making technology and physical improvements to enable the Gate technology. These costs are expensed as incurred.

Source of Funds

The 2018-2022 Capital Investment Plan allocates $1,380,000 for the on-going Clean Truck Program in 2018. See Table 3 for detail. Separately the CIP includes $800,000 for the gate technology. Currently the range of costs for this project are under development and staff will return in March for full project authorization. In addition, temporary costs to pay for additional terminal security in the south harbor to implement the manual sticker review program are expected to be approximately $4,000 per week until the technology can be deployed (approximately April – September). Staff will address changes to the CIP for 2018 to ensure full funding of this project during the March project authorization request.

Table 3. NWSA Clean Truck Program 2018 Budget

NWSA Clean Truck Program	**MID 201050.01**
RFID contract	$ 150,000.00
Truck stickers	$ 10,000.00
Outreach materials and events (space rental, food)	$ 10,000.00
Meeting facilitation	$ 50,000.00
Truck technology review	$ 30,000.00
Support truck conversion	$ 1,000,000.00
Sum of outside services	***$ 1,250,000.00***
Staff time	*$ 130,000.00*
Grand Total	**$ 1,380,000.00**

F. ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS

Staff has explored and analyzed multiple options in partnership with PSCAA in addition to those outlined above in Section D1 *Equity for Compliant Truck Drivers*, including:

- *Holding the original date (recommended)*. This is equitable for companies who have complied with the announced NWSA's objectives. A 90-day grace period provides drivers with additional time to procure a compliant truck. This option requires implementing an interim sticker-based enforcement mechanism in the South Harbor.

- *Grandfathering in all trucks*. The Port Authority of New York and New Jersey has taken this approach. In exchange for removing the 2007 engine requirement, New York and New Jersey have pledged $50 million in other emission reduction initiatives, such as clean ship and cargo handling equipment incentives. If the NWSA adopts this approach, currently registered noncompliant trucks would be grandfathered in and able to access the terminals. No new noncompliant trucks would be allowed to register and could not enter NWSA terminals. NWSA is motivated to meet the expectations of drivers who have made the investment early and this option does not support those drivers.

- *Phasing in the 2007 model year standard*. This program would increase the model year requirement every year, to phase out a percentage of older noncompliant trucks each year, as opposed to a blanket model year change. This option is contingent on a common truck tracking system and was ruled out due to complexity of communications and monitoring.

- *Incentivizing clean trucks*. Establishing a gate fee, whereby clean trucks are given a discount or no gate fee and noncompliant trucks pay into a fund. As the NWSA has no contractual relationship with the trucking companies, the MTOs would have to administer such a program, creating a considerable amount of additional accounting. Staff was concerned that MTOs would administer the program differently and there would not be consistency across the gateway.

G. ATTACHMENTS TO THIS REQUEST

- Attachment 1: November 7, 2017, Memo: Clean Truck Program Cederberg
- Attachment 2: Lease Amendment and Tariff language

H. PREVIOUS ACTIONS OR BRIEFINGS

Date	Action
November 7, 2017	Briefing
December 12, 2016	Briefing – NWPCAS Implementation Report
November 4, 2015	Briefing – NWPCAS Implementation Report

I. NEXT STEPS

At the NWSA February 6, 2018, Managing Member public meeting, staff will request action on the NWSA motion to update the provisions of The Northwest Seaport Alliance's (NWSA) Clean Truck Program and direct staff to seek lease amendments at the international container terminals in the north and south harbors to implement the updated program. In March, staff will also request from the Managing Members a project authorization for procuring and installing RFID technology in both the South and North Harbor.

The NWSA is committed to accomplishing comprehensive goals and accompanying programs that benefit the environment we live and work in, the surrounding community with whom we share the air, and our work force that helps us move cargo throughout gateway. NWSA seeks the support, help and collaboration from our regional partners and stakeholders in implementing the Clean Truck Program and updating the goals in the Northwest Ports Clean Air Strategy in 2018.

Over the upcoming year, NWSA staff has planned the following activities to improve progress towards the 2020 NWPCAS targets:

2016 Puget Sound Maritime Air Emission Inventory: The NWSA is managing a multi-stakeholder effort to develop a comprehensive air emissions inventory based on 2016 maritime activities in Puget Sound. The inventory is currently underway, and will be completed in early 2018. It will update the results of previous inventories conducted for 2005 and 2011 activities. Results of the inventory will provide data on NWPCAS progress to reduce air emissions and inform future direction of NWSA air quality initiatives.

Greenhouse Gas Resolution: In 2017, the NWSA, POS and POT formally adopted by Resolution an update to greenhouse gas (GHG) reduction targets. This aligned NWSA, POS and POT efforts with the Paris Accords. The three organizations adopted the following goals for GHG reduction:

By 2030:

- 50% below 2005 levels (scope 1, 2, & 3 emissions)

By 2050:

- Carbon Neutral (scope 1 & 2 emissions)
- 80% below 2005 levels (scope 3 emissions)

Staff is developing an implementation plan that will be presented to the Managing Members in April 2018. To assist NWSA efforts in developing an implementation plan for the GHG Resolution, a comprehensive GHG Inventory of Scope 1, 2 and 3 emissions is currently underway of NWSA, POT and tenant operations.

T5 Air Quality Management Plan: Staff is developing the Air Quality Management Plan for future operations at Terminal 5 in the North Harbor. Permit requirements include aggressive emission targets and reporting requirements. The plan will include a number of scenarios for tenants to comply with the permit. Staff is reviewing global shore power use, incentive programs and equivalent emission control technologies to inform strategy for reducing emissions at T5.

VW Funding: Staff is monitoring developments in the VW Mitigation Fund and have taken part in the consultation process with the Department of Ecology in 2016 and 2017. Staff submitted comments on the draft Mitigation Plan requesting prioritizing shore power and fleet conversion projects. Applications for projects will likely open in late Spring 2018.

NWPCAS 2018 Update: The original NWPCAS was published in 2008, and was updated in 2013. Using the updated inventories and GHG Resolutions as a basis, the NWPCAS partners plan to update the NWPCAS' 2020 and 2025 targets during the course of 2018. Staff will present an interlocal agreement for that effort to the Managing Members in the first quarter of 2018.