TERMINAL 5 EXPORT, EXPANSION, AND EMISSIONS REDUCTION PROJECT

SEATTLE, WASHINGTON



U.S. DEPARTMENT OF TRANSPORTATION / MARITIME ADMINISTRATION
FY 2022 PORT INFRASTRUCTURE DEVELOPMENT PROGRAM (PIDP)
GRANT APPLICATION

PROJECT NARRATIVE

Submitted by:

The Northwest Seaport Alliance (NWSA)

THE NORTHWEST
SEAPORT ALLIANCE
SEATTLE + TACOMA

TABLE OF CONTENTS

I. PROJECT DESCRIPTION 1
A. Applicant Eligibility 3
B. Project Need 3
i. Address Current Barriers to Agricultural Exports 3
ii. Further Increasing Capacity, Velocity and Efficiency 4
iii. Reduce Truck Queuing on Public Streets 5
C. Project Benefits 5
i. Support for U.S. Agricultural and Other Exports 5
ii. Ease Congestion and Improve the Reliability of Major Freight Infrastructure 6
iii. Improve Terminal 5 Capacity and Operations 7
iv. Reduce Greenhouse Gases 7
D. Statement of Work / Project Components 7
i. Project Component 1: Truck Gate Complex 7
ii. Project Component 2: Container Storage Yard Expansion 8
II. PROJECT LOCATION 9
A. Port Location 9
B. Project Site 10
C. Transportation Connections 10
D. Census-Designations 11
E. Community Development Zones 11
III. GRANT FUNDS, SOURCES, AND USES OF PROJECT FUNDS 12
A. Project Costs 12
B. PIDP Funding Request and Matching Funds 12
C. Funding Sources 13
D. Documentation of Funding Commitment 13
E. Previously Incurred Expenses 13
IV. MERIT CRITERIA 14
A. Achieving Safety, Efficiency, or Reliability Improvements 14
i. Loading and Unloading of Goods 14
ii. Movement of Goods Into, Out of, Around, or Within a Port 14
iii. Operational Improvements / Port Resilience 16
iv. Environmental or Emissions Mitigation Measures 16
B. Supporting Economic Vitality at the National and Regional Level 16
i. Benefit-Cost Analysis Summary 17
C. Addressing Climate Change and Environmental Justice Impacts 18
D. Advancing Equity and Opportunity For All 19
E. Leveraging Federal Funding to Attract Non-Federal Sources of Investment 20
V. PROJECT READINESS 21
A. Technical Capacity 21
i. Experience and Understanding of Federal Requirements 21
ii. Experience Working with Federal Agencies 21

iii. Experience with BUILD, INFRA and PIDP Awards 21
iv. Feasibility / Constructability 21
v. Schedule 22
B. Environmental Risk 22
i. Environmental Permits and Reviews 23
ii. State and Local Approvals 23
iii. Environmental Studies 24
C. Risk Mitigation 24
VI. DOMESTIC PREFERENCE 25
VII. DETERMINATIONS 26

TABLE OF FIGURES

Figure 1: Project Components 1
Figure 2: NWSA Export Origins 4
Figure 3: Truck Queueing on SW Spokane Street and Bridge Across the Duwamish River 5
Figure 4: NWSA Export Markets Served 6
Figure 5: Project Components 8
Figure 6: Port of Seattle and Terminal 5 9
Figure 7: Terminal 5 Configuration 100
Figure 8: T-5 Transportation Connections 111
Figure 9: Project-Adjacent Opportunity Zones 122
Figure 10: Truck Queue Safety 155
Figure 11: Schedule 222

LIST OF TABLES

Table 1: Project Costs & Funding Sources 12
Table 2: Summary of Project Benefits 17
Table 3: Project Risks and Mitigation Strategies 25

SUPPORTING DOCUMENTATION / ATTACHMENTS

Supporting documentation for this application, including the Benefit-Cost Analysis (BCA) Report, the Benefit-Cost Analysis Excel model, the cost estimate, a letter of commitment, and Letters of Support have been submitted on www.grants.gov as attachments, separate from this Narrative. NWSA has also set up a website for the submitted grant files: https://www.nwseaportalliance.com/2022-pidp-grant-application-terminal-5.

INTRODUCTORY INFORMATION

Is the applicant applying as a lead applicant with any private entity partners or joint applicants?	No, NWSA is the only applicant
What is the project name?	Terminal 5 Export, Expansion, and Emission Reduction Project
Project Description	The Project is a project of independent utility that comprises the next step in NWSA's continued enhancement of Terminal 5 at the Port of Seattle consisting of two components, 1) Construction of a truck gate complex, and 2) Construction of a cargo container storage yard.
Is this a planning project?	No
Is this a project at a coastal, Great Lakes, or inland river port?	Coastal port
GIS Coordinates (in Latitude and Longitude format)	Latitude 47° 34' 40" N, Longitude 122° 21' 43" W
Is this project in an urban or rural area?	Urban
Project Zip Code	98106
Is the project located in a Historically Disadvantaged Community or a Community Development Zone? (A CDZ is a Choice Neighborhood, Empowerment Zone, Opportunity Zone, or Promise Zone.)	Yes, Historically Disadvantaged Community as mapped by USDOT Transportation Disadvantage Census Tract Layer arcgis
Has the same project been previously submitted for PIDP funding?	No
Is the applicant applying for other discretionary grant programs in 2022 for the same work or related scopes of work?	No, WA State Formula NHFP and STP program applications have been submitted for one component (gate)
Has the applicant previously received TIGER, BUILD, RAISE, FASTLANE, INFRA or PIDP funding?	Yes, in 2020
PIDP Grant Amount Requested	$17,035,900
Total Future Eligible Project costs	$24,337,000
Total Project Cost	$26,259,500
Total Federal Funding	$17,035,900
Total Non-Federal Funding	$9,223,600
Will RRIF or TIFIA funds be used as part of the project financing?	No

I. PROJECT DESCRIPTION

The Northwest Seaport Alliance (NWSA) is requesting $17,035,900 in FY22 Port Infrastructure and Development Program (PIDP) grant funding to help fund the **Terminal 5 Export, Expansion, and Emissions Reduction Project** (the Project). The Project is of independent utility comprising the next step in NWSA's continued efforts to enhance Terminal 5 (T-5) at the Port of Seattle. The Project consists of two components:

1) Construction of a new truck gate complex by relocating the 12 existing gate lanes and increasing capacity to process export loads by expanding the number of lanes with scales from six to eight. The Project does include the infrastructure needed to add scales to the remaining four lanes with minimal future effort. The Project will double the on-terminal truck queueing capacity from 100 to 200 trucks by constructing 930-foot gate queue lanes inside the terminal.

2) Construction of a cargo container storage yard by redeveloping six acres on terminal to increase cargo container handling capacity and add flexibility for the handling and staging of export cargo containers. This expansion will be achieved by demolishing outdated warehouse facilities and repurposing the area for cargo container storage and sorting.



Figure 1: Project Components

The Project is designed to support the Port's growing export business and increase the operational abilities of the Port by reducing truck turn times (a turn is a roundtrip by a truck/trucker) and expanding the export "windows" for truck-borne export containers. These efficiencies will reduce greenhouse gas emissions and criteria pollutants. The Project will double

the on-terminal truck queueing capacity of the existing gate infrastructure, adding room for about 100 trucks that would otherwise queue on the public roads. As one of the leading export facilities in the U.S., the Project supports improvement of overall supply chain efficiency by reducing the number of empty cargo containers and increasing the number of loaded cargo containers exported back to Asian destinations.

The NWSA is the leading U.S. gateway for many containerized agricultural exports. To help agriculture exporters compete in the global marketplace, it is crucial that our terminal facilities are operationally efficient and reliable. With few exceptions, there is no agricultural commodity produced in the U.S. that cannot be sourced elsewhere in the world. The availability of substitutes means that any increase to transportation costs or reduction in service reliability puts our U.S. exporters at risk of losing customers in overseas markets. **The Project will result in both service improvements and cost reductions for agricultural exporters.**

The Project supports U.S. exports, especially agricultural, by decreasing truck wait time, improving the velocity of the gate for export containers, and by providing additional yard space to receive and handle export products—resulting in a more efficient and less costly export process. Agricultural exporters have been disproportionately impacted by current supply chain congestion as ocean transportation service levels have deteriorated, reducing both container equipment and capacity availability. Expanding capacity at T-5 addresses several key logistical challenges that have impeded export activity, including volatile vessel schedules, and a lack of on-terminal yard capacity. These challenges result in long dwell times for import containers that cannot be moved to oversubscribed warehouses. The yard expansion provides room for longer cargo container receiving times to allow for a more reliable and consistent export process, and to provide a buffer for the effects of vessels that are off schedule.

The environmental and sustainability benefits of the Project include improved air quality due to reduced truck turn times, reduced congestion on public roads near the Port, development of stormwater and utility infrastructure at the truck gate complex, and, importantly, a reduction in the number of empty cargo containers making a non-productive trip across the Pacific.

The Project also advances equity and promotes workforce opportunities. The Project improves a port terminal operated by union labor. The terminal is also served by truck drivers of which 39% are recent immigrants who do not speak English as a first language, identifying as African, Asian/Pacific Islander, Hispanic, or Eastern European. The Project emphasis on growing agricultural exports also supports farm worker jobs, the majority of whom are Hispanic.

The Project has a Benefit-Cost Ratio (BCA) of 1.50. The NWSA is requesting $17,035,900 PIDP funds for the Project representing 65% of the total project cost of $26,289,500 and will be supported by $9,223,600 in matching funds (35% of the project cost). The Project supports the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods into, out of, around, and within the Port and improves air emissions in alignment with the formally adopted Northwest Ports Clean Air Strategy[1].

[1] Northwest Ports Clean Air Strategy

A. Applicant Eligibility

The NWSA is a marine cargo operating partnership governed by the Port of Seattle and the Port of Tacoma as equal members, with each port acting through its elected commissioners as Managing Members of the NWSA. Both are port authorities under Washington State Law RCW 53.04.010[2]. The NWSA itself is a port development authority under Washington State Law RCW Chapter 53.08[3] and as such is eligible to receive PIDP funds. Terminal 5 (T-5) is an international container terminal capable of receiving the largest ocean-going container ships in service today.

The NWSA oversees much of the maritime commerce in the region, including facilities for the export and import of containerized cargo, automobiles, breakbulk cargo, heavy-lift cargo, military cargo, and project cargoes, as well as intermodal rail terminal operations. The NWSA facilities include 33 ship berths that are served by four federal waterways. By operating jointly as the NWSA, the two ports form the fifth largest container gateway and eighth largest export gateway by TEU (twenty-foot equivalent unit) in North America. This unique partnership allows for strengthening of the Puget Sound gateway and growth for the regional economy, including the Duwamish Manufacturing Industrial Center in Seattle, King County. The NWSA marine cargo operations support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.[4]

B. Project Need

i. Address Current Barriers to Agricultural Exports

Congestion-induced impacts to vessel schedules coupled with U.S. consumer demand creating supply chain incentives to rapidly return empty containers to Asia for reload have significantly raised barriers for agricultural product exporters. The agricultural exporters, with perishable cargo, have been disproportionately impacted by the current supply chain congestion. This has resulted in lost markets and severe losses for U.S. farmers, manufacturers, and transportation firms. In 2021, the NWSA saw a 12.5% year-over-year decline in laden exports from 2020[5]. This trend has accelerated with 26.9% decline in the export of agricultural commodities in the last quarter of 2021[6], and 28.1% during the first quarter of 2022[7], as the ratio of loaded versus empty cargo container exports shifted to predominately empty containers.

Expanded gate, queuing, and terminal infrastructure at Terminal 5 (T-5) will help reverse this trend. The addition of two scales will improve the export-processing capacity of the gate by 30%, and with the ability to add four more scales so that all 12 gate lanes can handle exports with minimal effort, will improve overall export velocity. This will reduce truck wait times and emissions. In addition, the expanded cargo container storage space will allow for longer receiving times at the gate, resulting in a more reliable and consistent export process.

[2] RCW 53.04.010
[3] RCW 53.08
[4] Economic Impact | Northwest Seaport - Port of Tacoma (nwseaportalliance.com)
[5] Cargo Statistics | Northwest Seaport - Port of Tacoma (nwseaportalliance.com)
[6] Data Source: PIERS
[7] Cargo Statistics | Northwest Seaport - Port of Tacoma (nwseaportalliance.com)

Our agricultural producers rely on export markets to remain profitable and viable. Modernizing and improving NWSA facilities will support U.S. exporters from Washington, Oregon, Idaho, Montana, Minnesota, the Dakotas, and Iowa. These exporters depend on the NWSA for the fastest and most cost-effective shipping of price- and time-sensitive agricultural products such as frozen potato products, apples, dairy products, meat, and seafood, as well as hay, soybeans, legumes (peas, beans, and lentils), and potatoes. By increasing exports, the Project will not only help NWSA's exporting industries, but will also help restore balance to the overall supply chain and empty container access for U.S. exporters and the agricultural producers that export their products across the globe.

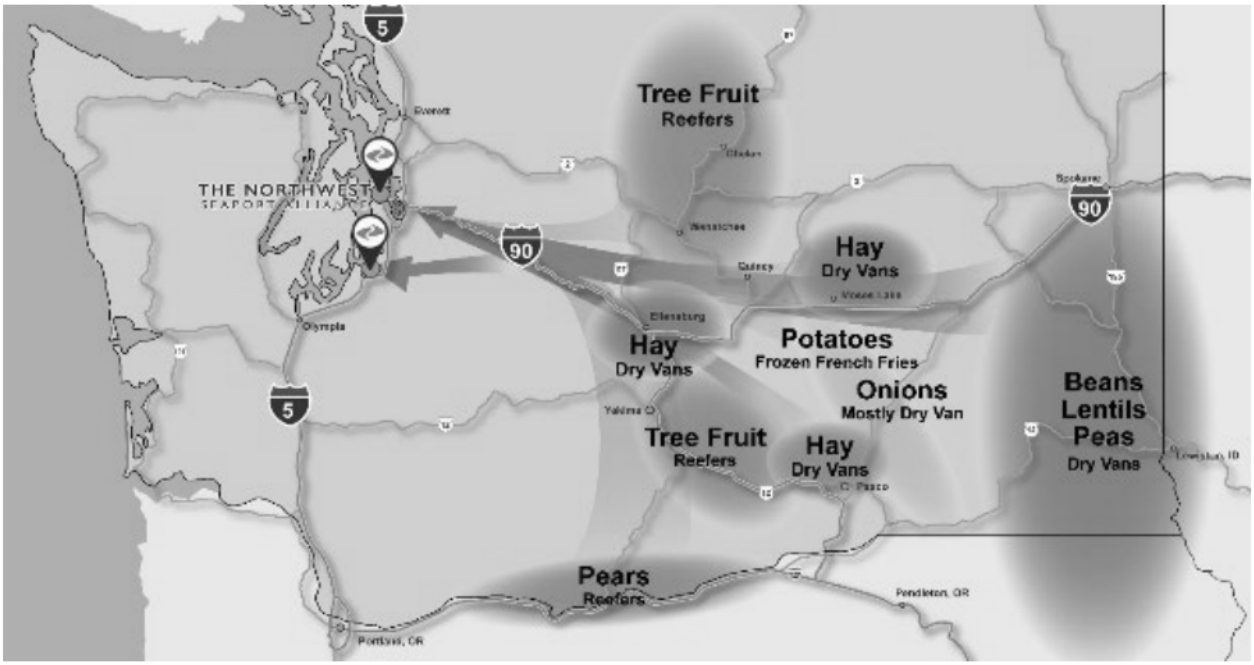


Figure 2: NWSA Export Origins

ii. Further Increasing Capacity, Velocity, and Efficiency

The Project is of independent utility and comprises the next step in NWSA's continued enhancement of Terminal 5 (T-5). The Project will make better use of existing port land and infrastructure. Terminal 5 is designated in NWSA Strategic Business Plan for investments to draw ultra-large cargo ships to the Pacific Northwest. The NWSA is currently completing a modernization of the terminal to handle ultra-large container ships with a capacity of up to 18,000 containers. Terminal 5 reopened in January 2022 after being closed and under construction for Phase 1 of the Modernization Program for five years. Ships now calling on T-5 as part of their regular route include two 13,000 TEU vessels, the MSC Renee and MSC Cristina.

Phase Two, which was the recipient of a prior (2020) PIDP grant, is on track and scheduled to be completed in 2023. Terminal 5 will attract new import and export cargoes with its generous size, efficient layout, on-dock rail, and immediate access to multimodal transportation nodes, including Class 1 rail corridors and intermodal yards, the National Highway System's Interstate-5

and Interstate-90, and Marine Highway M-5. Both Project elements will support the higher cargo volumes that will come with the opening of the second berth that is part of Phase 2.

iii. Reduce Truck Queuing on Public Streets

Like most container terminals in North America, Terminal 5 (T-5) operations can result in on-street truck queuing and congestion in the constrained right of way of west-bound SW Spokane Street and its bridge across the West Duwamish River. Before its closure in 2015, T-5 experienced truck queues on public streets quite frequently, causing periodic safety issues. Truck queues on the bridge, preventing the bridge from opening for domestic cargo destined for Alaska and Hawaii, have the potential to affect time-sensitive cargo that is dependent on tidal windows.



Figure 1: Truck Queueing on SW Spokane Street and Bridge Across the Duwamish River

C. Project Benefits

The Project will allow NWSA to better compete against subsidized international competition, improve conditions for exports, reduce congestion, and reduce the greenhouse gas footprint from terminal operations.

i. Support for U.S. Agricultural and Other Exports

The NWSA is the leading U.S. gateway for many containerized agricultural exports. To help agriculture exporters compete in the global marketplace, it is crucial that NWSA's terminal facilities operationally efficient and reliable. With few exceptions, there is no agricultural commodity produced in the U.S. that cannot be sourced elsewhere in the world. The availability of substitutes means that any increase to transportation costs or reduction in service reliability puts U.S. exporters at risk of losing customers in overseas markets. The Project will result in both service improvements and cost reductions for agricultural exporters using Terminal 5 (T-5).

As an example, hay is the largest single export commodity at NWSA and it primarily originates in Ellensburg, WA, which is located approximately 100 miles from NWSA terminals. Truckers deliver containerized loads from Ellensburg. Truckers must be able to complete two trips per day to make exporting profitable. An expanded gate complex reduces the time to complete a delivery, helping that trucker complete the minimum two daily trips.

An expanded yard that can function independent of the existing yard will help support consistent service levels by ensuring the terminal can receive and store loaded exports for longer time periods. In the current environment of low vessel schedule reliability by the ocean carriers, additional terminal space is crucial to allow for staging of cargo containers, available for loading when delayed vessels arrive. This increases service consistency, helping ensure a reliable flow of product to the overseas customers and minimizing the risk of lost business due to poor service levels or the product loosing value due to deterioration or obsolesce…if hay cannot get to customers before the next harvest is available, it has virtually no value.

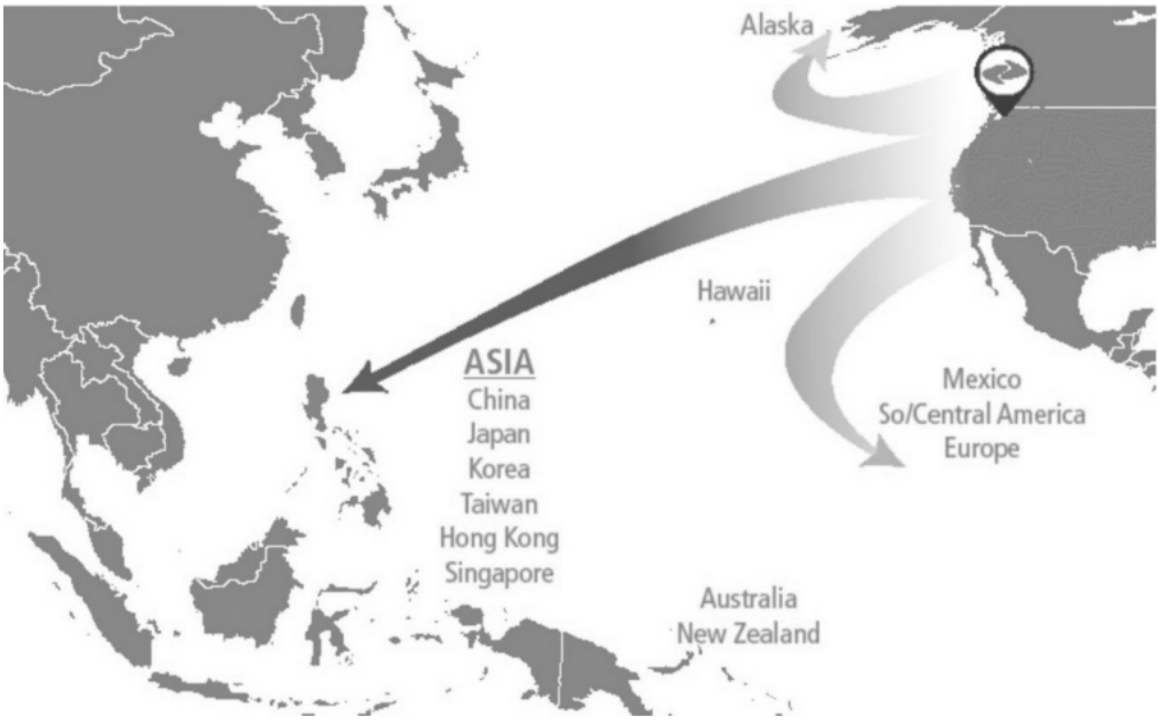


Figure 2: NWSA Export Markets Served

ii. Ease Congestion and Improve the Reliability of Major Freight Infrastructure

The new truck gate complex is designed to reduce truck queuing and congestion on SW Spokane Street and its bridge across the Duwamish River by doubling the on-terminal queueing capacity and increasing the number of gate lanes with scales. This will reduce congestion on west-bound SW Spokane Street by half. This reduces congestion for the industrial, manufacturing, and other businesses along the nearby roads. This includes the SW Spokane Street corridor between East Marginal Way and West Seattle, including a major Nucor Steel production plant located close to the terminal. It will also reduce the potential for negative impacts to domestic marine cargo traffic on the Duwamish River. Terminal 5 is located on Harbor Island, between West Seattle and downtown. West Seattle is a densely populated part of Seattle and reducing congestion in this corridor will result in safety and route reliability for all modes.

iii. Improve Terminal 5 Capacity and Operations

The Terminal 5 (T-5) container yard expansion will increase the terminal's cargo container support yard area by six acres. This increases the container capacity of the terminal and provides the terminal operators more flexibility in managing yard operations. For example, the area may be dedicated to early arriving export loads. The addition of two scales, with the option to add 4 more for a total of 12, increases the ability of the terminal to process export loads through its gate by 500 trucks per day. This improves the export intake capacity of the gate by 30% and provides the terminal operator with additional flexibility in managing individual gate lanes. More lanes with scales allow the terminal operator to dedicate lanes for export-loads-only when they are needed to reduce export truck wait times.

The Project includes installation of infrastructure necessary to equip the remaining four gate lanes with scales by simply removing concrete blocks, dropping in scales and connecting them to power. The existing terminal operating system provides the terminal operator with the ability to add scales as necessary and further improve the flexibility of the gate system to manage all inbound trucks.

iv. Reduce Greenhouse Gases

The Project will reduce greenhouses gas emissions in two ways:

1. The expanded scales and terminal capacity will reduce truck turn times and truck queuing on SW Spokane Street and related idling of diesel vehicles, leading to reduced greenhouse gas emissions and criteria pollutants.
2. The greater operational efficiencies at the terminal will lead to an increase in the volume of loaded export containers and reduce the number of empty export containers. Moving empty export containers increases greenhouse gas emissions without a corresponding public or national economic benefit.

D. Statement of Work / Project Components

i. Project Component 1: Construction of a New Truck Gate Complex

The new truck gate complex is designed to increase the velocity of export cargo moving through the terminal while also reducing truck queuing on SW Spokane Street and its bridge across the Duwamish River. This project component includes:

- New inbound truck gate infrastructure 930-feet from the Terminal 5 entrance, doubling the on-terminal queueing capacity from 100 to 200 trucks,
- 12 inbound gate lanes with the communications infrastructure and scanning equipment necessary to process inbound trucks—the collected data will automatically populate the existing terminal operating system. Eight new scales, and the infrastructure for 4 more scales, will be deployed. Compared to the existing gate, this will initially provide two additional lanes with scales, with capacity to be expanded to 12 scales as needed,
- New restrooms for truckers,

- Pavement striping for a new "trouble area" outside the queuing area for trucks without adequate credentials, to prevent backups in the queue,
- Associated utilities and stormwater infrastructure to support improvements, and
- Demolition of the current gate infrastructure.

ii. Project Component 2: Construction of a Cargo Container Storage Yard

The container storage yard expansion component will increase the on-terminal container yard storage yard capacity by approximately six acres. Located close to the new gate complex while connected to the existing container yard, it provides both additional space and increases the flexibility of the terminal to manage export containers. This project component includes:

- Demolition of an obsolete warehouse,
- Paving six acres to cargo container storage load standards,
- An improved connection to the existing cargo container yard, and
- Stormwater infrastructure, utility, and other infrastructure to support improvements.



Figure 3: Project Components

II. PROJECT LOCATION

A. PORT LOCATION

Terminal 5 (T-5) is located in the City of Seattle, King County, Washington State with a street address of: 2701 26th Ave SW, Seattle, Washington 98106. Located on the west shore of the Duwamish Waterway at Elliott Bay. Geocoordinates for the site are: Latitude 47˚ 34' 40" N, Longitude 122˚ 21' 43" W. All of the project components are located within the boundaries of the terminal. The Project is a "coastal port project" subject to the Army Corps of Engineers' regulatory jurisdiction for oceanic and coastal waters pursuant to 33 CFR § 329.12. Port of Seattle terminals are capable of receiving oceangoing vessels with a draft of at least 20 feet.



Figure 4: Port of Seattle and Terminal 5

B. PROJECT SITE

The Project is located inside the boundaries of the Terminal 5, which is part of the NWSA's Seattle international container terminal facilities, anchoring the Seattle freight cluster with an annual throughput capacity of 1.2 million twenty-foot equivalent units (TEUs) at full build-out.



Figure 5: Terminal 5 Configuration

C. TRANSPORTATION CONNECTIONS

Terminal 5 (T-5) is served by a designated National Highway System Freight Intermodal Connector, SW Spokane Street. The Spokane St Swing Bridge (low bridge) is an essential route for emergency vehicles, transit, heavy freight, and people biking and walking. It provides an important connection between the maritime and industrial businesses on the west side of the Duwamish Waterway to those on the east side, especially with respect to the marine cargo terminals.

SW Spokane Street connects T-5 and other freight-dependent businesses like Nucor Steel to I-5, I-90, warehousing, and distribution centers serving Alaska, and both international and domestic rail yards operated by BNSF Railway and Union Pacific. Its on-terminal rail provides immediate access to the nation's Class 1 rail network, connecting the Pacific Northwest to America's heartland and the East Coast. Ease of access to these national transportation infrastructure assets reduces the costs of moving cargo through T-5, making American goods more competitive on the international market and supporting reliable delivery of components needed for domestic manufacture of U.S. products.



Figure 6: T-5 Transportation Connections

D. Census-Designations

The Project is located within the Seattle Urbanized Area 80389 and Census Tract 53033009900, as defined by the U.S. Census Bureau. The City of Seattle's 2010 population was 608,660, and its 2020 estimated population was 737,015[8].

E. Community Development Zones

Terminal 5 is located approximately 4,500 feet to the west of Census Tract 53033009300, which is designated as a Qualified Opportunity Zone, as shown in Figure 9. Both BNSF Railway and Union Pacific operate intermodal rail yards in the Opportunity Zone, and there are several warehousing and distribution centers that serve domestic and international cargo moving through NWSA terminals. The truck gate complex and container yard expansion project components will improve access and reduce congestion between cargo handling facilities in the Opportunity Zone and the NWSA's international container terminals 5, 18, 30 and 115, its domestic container terminal in Seattle. These benefits will also accrue to other businesses and industry in the Opportunity Zone, and to longshoremen from Seattle's ILWU Local 19, whose dispatch hall is in the Opportunity Zone.

The area is mapped as a Historically Disadvantaged Community by USDOT Transportation Disadvantage Census Tract Layer in arcgis. Census tracts with four or more Transportation Disadvantage indicators will be visible in orange.



[8] U.S. Census Bureau QuickFacts: Seattle city, Washington



Figure 7: Project-Adjacent Opportunity Zones

III. GRANT FUNDS, SOURCES, AND USES OF PROJECT FUNDS

A. PROJECT COSTS

The latest cost estimate, not including previous design costs, for the Project is $26,289,500. Table 1 shows the expected project cost for the two project components, full cost estimates are provided as an attachment to this application.

Table 1: Project Costs & Funding Sources

Project Component	Project Cost	PIDP Ask	Match (NWSA)
1. Truck Gate Complex	$15,590,500	$10,114,366	$5,476,134
2.Yard Expansion	$10,669,000	$6,921,534	$3,747,466
TOTAL	**$26,259,500**	**$17,035,900**	**$9,223,600**
Percent Ask / Match	100%	65%	35%

B. PIDP FUNDING REQUEST AND MATCHING FUNDS

The request of $17,035,900 in PIDP grant funding will allow the NWSA to complete the Project in the most time- and cost-effective manner for the benefit of U.S. exporters, the trucking industry, and other freight stakeholders throughout the region and nation.

C. Funding Sources

The NWSA has developed a comprehensive, multi-sourced funding program for the Project, with the requested PIDP grant funding an essential element of the NWSA's goal of meeting the needs of the freight and logistics industry and the region. The requested PIDP grant funding represents approximately 65% of total project costs. The cost share from NWSA will come from the Port of Seattle's cash on hand generated by the Port of Seattle's tax levy authority and related general obligation bonds.

D. Documentation of Funding Commitment

The Project's cost share will be funded through non-PIDP funding sources. The NWSA is pursuing other external funding opportunities, but if they are unable to secure those funds, the NWSA is committed to funding the remaining balance through its own resources. The Project components are included in a binding lease agreement between the NWSA and the terminal operator.

The NWSA Chief Executive Officer details the Project's funding sources and their authorization in the attached letter of funding commitment.[9]

E. Previously Incurred Expenses

The design for the Truck Gate Complex project component is 90% complete. The costs associated with this design work have already been committed and as such are not included in the project cost in Table 1 and are not considered as a part of the non-Federal match. The final design, permitting and any NEPA costs for the Yard Expansion project component are included in the project cost in Table 1. **Pursuant to 46 U.S.C. 54301(a)(10)(B), the NWSA intends to request approval from DOT for these costs to count toward the non-Federal cost share. The NWSA intends to expend these costs between the time of grant award announcement and obligation.**

[9] Match letter is provided as an attachment to this grant application.

IV. MERIT CRITERIA

A. ACHIEVING SAFETY, EFFICIENCY, OR RELIABILITY IMPROVEMENTS

i. Loading and Unloading of Goods

The two project components, in conjunction, will improve the loading and unloading of export containers arriving at Terminal 5. The new gate complex addition of two scales to the new 12-lane truck gate complex and eight scales increases the capacity of the gate to process trucks carrying export containers into the terminal by 500 trucks per day—a 30% increase over the capacity of the existing 12-lane gate complex with six lanes with scales. Meanwhile, the yard expansion will add six acres of storage to the container yard on the terminal by demolishing an outdated warehouse and parking area. This increases the container-handling capacity of the terminal for dedicated areas to export loads only. This provides the opportunity to increase the time window during which exports can be dropped off at T-5 to more than the typical 1-2 days before a vessel arrives, greatly benefitting exporters who now have more flexibility in managing their truck fleets.

Combined, these improvements will support U.S. exporters from Washington, Oregon, Idaho, Montana, Minnesota, the Dakotas, and Iowa. These exporters depend on the NWSA for the fastest and most cost-effective shipping of price and time-sensitive agricultural products such as frozen potato products, apples, dairy products, meat, and seafood, as well as hay, soybeans, legumes (peas, beans, and lentils), and potatoes. By increasing export handling capacity and storage, the Project will not only help NWSA's exporting industries, but will also help restore balance to the overall supply chain, including empty container access for U.S. exporters and the agricultural producers that export their products across the globe.

Safety within the truck gate complex will also be improved as the truck gate complex project component includes a new striped "trouble area" for trucks with incomplete or incorrect credentials/paperwork outside of the queuing area, a kiosk which drivers will use to address issues with credentials will be located to ensure safe pedestrian access. A new bathroom facility will be located next to the kiosk, and a secure walkway will connect the two to the striped trouble truck parking area. These improvements will reduce the number of truck delays due to mechanical or human issues that can paralyze an entire truck queue, sometimes for hours.

ii. Movement of Goods Into, Out of, Around, or Within a Port

Most, if not all, container terminals in the U.S. experience truck queuing in the public right of way at some level, although ports and their tenants are working hard to minimize these incidents. The same is true for the NWSA and the operator of Terminal 5. **The truck gate complex project component will reduce congestion on the public roadway network by doubling the on-terminal queuing capacity from 100 to 200 trucks, cutting the potential for truck queuing outside the terminal in half.** This will reduce truck queue-related congestion on SW Spokane Street, a National Highway Freight Network Corridor serving industry, businesses, and residents of West Seattle. This is particularly important in this location, where openings of the "low bridge" across the West Waterway of the Duwamish River, which is part of SW Spokane Street, may close the

road to traffic an average of 11-12 minutes between 80 and 180 times per month on weekdays. Additional truck queueing related to T-5 can compound the impacts of the bridge opening to marine traffic. The Project will allow goods entering and exiting the Port complex greater ease of movement with the following improvements:

Ability to turn more trucks faster. Adding two scales to the gate and dedicated yard space for export containers increases its capacity to simultaneously process trucks carrying export cargo into the terminal, improves the velocity of inbound trucks and expands the terminal's cargo handling capacity. More freight will be able to enter the terminal faster.

Reduced truck queuing on SW Spokane Street. Few cargo container terminals in North America can entirely prevent queues of trucks on city streets waiting to enter the terminal. Doubling the on-terminal queueing capacity and the number of gate lanes with scales will reduce the potential for street congestion due to trucks waiting to enter the terminal by half. This affects trucks serving industrial, manufacturing, and other businesses along the nearby roads including SW Spokane St. corridor between East Marginal Way and West Seattle. This also benefits people who live nearby and who depend on this corridor to reach work, school, and other destinations.

Lower risk of impacts on river cargo. The main access route to Terminal 5 is via SW Spokane St., across the "low bridge" over the Duwamish River. This bridge opens to river traffic, including commercial traffic serving Alaska and Hawaii, about 11 times each weekday. Reducing truck queues waiting for access to T-5 reduces the potential for trucks to prevent the bridge from opening for cargo barges on the river.

Increased safety on terminal and on streets around the port. The major safety benefits of the Project will occur outside the terminal boundaries: queuing on SW Spokane Street, and the bridge over the West Duwamish Waterway, increases the potential for rear-end and head-on collision accidents for trucks (see truck driving in in the wrong direction in the left picture below) and other vehicles. Increased on-terminal truck queuing capacity and an increase in gate lanes with scales will reduce the potential for such queues and related accidents. As the picture below indicates, this has been a problem in the past: every post along west-bound SW Spokane Street, a National Highway Freight Network Connector, carries signs reading: "Do Not Block Bridge" and "$124 Fine" to prevent drivers from creating a potentially unsafe situation.



Figure 8: Truck Queue Safety

iii. Operational Improvements / Port Resilience

The truck gate complex project component will improve truck queue capacity adding room for about 100 trucks and removing trucks from the public right of way. The Project will also construct permanent restrooms for the truck drivers and a "trouble area" for trucks with incomplete papers, or those experiencing mechanical or health issues. Truck driver illness or mechanical failures in the terminal queue can paralyze the movement of hundreds of trucks for hours at a time.

The Project improves the resiliency of the freight transportation system by increasing the ability of the terminal to process export cargo, helping address market disruptions such as the current covid-related supply chain problems. It also improves resiliency by promoting continuous transportation operations: It reduces the potential for disruptions to commercial river traffic on the West Duwamish Waterway which serves cargo vessels serving Alaska and Hawaii and reduces the potential for congestion affecting other freight truck traffic on west-bound SW Spokane Street. It also increases redundancy in the capacity of the gate by adding two truck scales, and making provisions for the easy installation, of an additional 4 truck scales as cargo volumes increase.

The Project includes equipment that will automatically populate Terminal 5's existing terminal operating system with all necessary container information on all twelve lanes. It will also include state-of-the-art stormwater facilities specifically designed to minimize the impact of terminal operations.

iv. Environmental or Emissions Mitigation Measures

The reduction of truck queuing on SW Spokane Street commensurately reduces diesel emissions. This applies to both trucks waiting to enter Terminal 5 from SW Spokane Street and any truck or other vehicle stuck in the queue. Truck drivers on the terminal are instructed to turn off their equipment during breaks in, and before the start of, terminal operations. Trucks idling in the right of way are not similarly governed. Queues are more likely to occur in the morning when the queuing area is open, but the terminal has not started operations, and during labor-contract mandated breaks.

B. Supporting Economic Vitality at the National and Regional Level

The NWSA is the fourth largest gateway in North America. The region also hosts the 4th largest warehousing and distribution center in the country. The world's largest shipping lines connect NWSA's harbors with major ports throughout the Asia Pacific, Oceania, Latin America, Mediterranean, Middle East, Europe, Alaska, and Hawaii. As the closest U.S. port to Asia and a frequent first and last port of call on international ocean services, shippers can count on faster transits and greater flexibility from NWSA routings. The NWSA handles more than 80% of commerce between the lower 48 states and Alaska. In addition to international and domestic container handling capabilities, NWSA marine cargo facilities also are a major center for bulk, breakbulk, project/heavy-lift cargoes, automobiles, and trucks.

i. Benefit-Cost Analysis Summary

For this analysis, the following With and Without-Project Scenario assumptions were considered:

- **With-Project Scenario:** Terminal 5 gate complex expansion with added container yard capacity, supports increased export volumes and velocity. This additional gate capacity and container yard space will allow the NWSA and the Terminal to prioritize and pre-position just-in-time export containers and to better manage lower priority import and empty containers. As a result, truck wait times will be reduced by 15 minutes on average for all export boxes. The reduction in wait time during peak hours will have a significant impact on export boxes originating in areas just east of the Cascade Mountains' passes. Truckers will be able to pick up and return a second box within a single shift. As a result, exporters will be able to get more boxes delivered at a lower cost. In addition, the new gate location will allow for more on terminal truck queuing on the terminal, reducing the likelihood of the queue overflowing onto SW Spokane St during peak hours.
- **Without-Project Scenario:** Terminal 5 does not increase its gate or container yard capacity. Congestion will worsen along the surrounding highways of the terminal as truck traffic continues to be an issue, increasing safety costs, truck operating costs, and greenhouse gas emissions. The Port's ability to support agricultural exports and other exports will not be improved as truck wait times are not alleviated (at least in part) by added gate capacity.

The BCA reflects USDOT's standard guidance regarding forecast periods and discount rates. As such, all estimates were calculated over a 20-year period, beginning in 2025 following the Project's completion in 2024 in the With-Project Scenario. Additionally, a discount rate of 7 percent was used throughout the analysis (a discount rate of 3 percent was used for CO_2 emission benefits) as suggested in USDOT BCA guidelines for 2022. **The Project has a Benefit-to-Cost Ratio of 1.50.** The results of the BCA are summarized in Table 2.

Table 2: Summary of Project Benefits (2020 US$, PV Discounted @ 7%)

Category	Total
Economic Competitiveness	$25,561,817
Environmental Sustainability	$539,959
Operating & Maintenance Costs	($1,269,306)
Residual Value	$1,442,209
Total Benefits	**$26,274,678**
Project Costs	$17,534,894
Net Present Value	$8,739,785
Benefit to Cost Ratio	**1.50**

The benefits quantified to determine the Benefit-to-Cost Ratio stem from the increase in annual export container storage capacity, reduction in truck queuing time, and reduced greenhouse gas emissions. The analysis presented here quantifies the following benefits:

- **Reduction in truck waiting time.** The new gate complex and yard expansion will reduce average truck turn times by 15 minutes for export containers. Currently, the average turn time at the Terminal 5 is 70 minutes for all containers. Reduced truck waiting times will result in lower fuel consumption and time saving benefits.
- **Reduction in off-terminal truck queueing.** The repositioning of the new gate terminal will allow for 100 more trucks to wait on-terminal, thereby taking trucks off SW Spokane St. Congestion costs associated with such traffic has been considered as part of this analysis. While such congestion on the road can also pose a major issue for emergency response times, such benefits have not been considered as part of this analysis.
- **Reduction in trucker shifts.** The gate complex upgrade and yard expansion will allow export containers to move through Terminal 5 much faster. Therefore, for certain markets, truckers will be able to do two full truck turns in a shift as opposed to just one under current congestion conditions at the gate and external roadways. Therefore, certain exporters will only require half the number of truck shifts to deliver the same number of boxes to the Port. **In total, the Project is expected to save 1.8 million hours for truckers delivering export boxes to Terminal 5 over the 20-year analysis period.**

C. Addressing Climate Change and Environmental Justice Impacts

The Northwest Ports Clean Air Strategy among Tacoma, Seattle and Vancouver B.C. now calls for zero-emission northwest ports by 2050. NWSA first adopted its aggressive Greenhouse Gas and air pollutant emission reduction goals as part of their 2017 NWSA Greenhouse Gas (GHG) Resolution and the Northwest Ports Clean Air Strategy (NWPCAS).

Through the Northwest Ports Clean Air Strategy, the NWSA has established the goal to phase out emissions from seaport related activity by 2050, taking direct action to reduce and ultimately eliminate air and climate pollution from its operations. The work that the NWSA will complete under the Northwest Ports Clean Air Strategy will contribute to meeting the Biden Administration's GHG Targets and support the goals of the Justice 40 Initiative, as many of the port activities in the Puget Sound region occur in or adjacent to disadvantaged communities.

Expansion of the truck queue infrastructure, which will double the on-terminal queuing capacity to 200 trucks, will reduce congestion near the terminal by reducing or eliminating the need for trucks to queue in the right of way. **This will reduce air emissions associated with congestion.** Idling will also be reduced through more efficient management of truck queues using the expanded truck queue area and leveraging the additional in-gate lanes. This will reduce queue times for trucks waiting to enter the terminal and thereby reduce idling. These emission reductions are very impactful because they will occur in a census block that scores a 9 on the Diesel Pollution and Disproportionate Impacts metric, according to the Washington State Environmental Health Disparities Map. It is also near other census blocks that score 9s and 10s.

The benefits of air emission reductions go beyond the immediate vicinity of T-5 and would reduce air pollutant loads on communities that are disproportionately impacted by diesel pollution. Terminal 5 is part of the Duwamish Manufacturing Industrial Center in Seattle, King County, WA. Adjacent communities benefiting from emissions reductions include the West Seattle

community, downtown Seattle, South Downtown (SoDo), the Beacon Hill communities, and the Duwamish industrial area that borders the facility to the south.

Based on the Washington Tracking Network's Diesel and Disproportionately Impacted Communities Index[10], the project location and surrounding Census blocks experience high levels of diesel pollution load and socioeconomic factors exacerbate these impacts. Specifically, the project location (Washington King County census tract 009900) scores a 9 (out of 10) on the index. Additionally, most census tracts in the Duwamish Valley area (the Georgetown and South Park neighborhoods), Beacon Hill, downtown Seattle, and SoDo rank at 9s and 10s in the diesel and disproportionate impacts metric. Furthermore, King County is on the latest National Air Toxics Priority List, based on results of the 2014 National Air Toxics Assessment.

D. Advancing Equity and Opportunity For All

The Project serves the truck drivers moving containers in and out of NWSA container terminals in Seattle. Many drivers moving containers to and from our terminals are recent immigrants or first-generation Americans. That is because the industry is known for its ability to provide a job that has relatively low entry requirements (it does not require English proficiency). A 2018 Truck Driver Survey[11] survey found that:

- 39% of the drivers did not speak English as a first language.
- Of those 39%, 66% identified as African, Asian or Pacific Island, Hispanic or Latino/Latina, or Middle Eastern. The remaining 34% identified as Eastern European.

In addition, the Project provides new amenities to the truck drivers. It will install permanent restrooms in the vicinity of the gate, easily accessible on foot, and a "trouble area" for truck experiencing mechanical or compliance issues.

A recent Department of Labor survey of farm workers found that sixty-four percent of hired farmworkers interviewed in fiscal years 2017–2018 were born in Mexico, 32 percent were born in the United States or Puerto Rico, 3 percent were born in Central America, and the remainder originated from various other regions, including South America, the Caribbean, Asia, and the Pacific Islands. Seventy-seven percent of all farmworkers were Hispanic. Among U.S.-born workers, 30 percent were Hispanic. In terms of race, nearly one-third of crop workers self-identified as White (32%), and nearly two-thirds categorized their race with an "other" response (65%). Six percent of crop workers were identified as indigenous.[12]

The Project improves, and provides resiliency for, transportation services for export cargo from Eastern Washington and other agricultural areas where labor is predominantly Hispanic or Latina/Latino. Port truck drivers are disproportionately independent owner operators, small business owners driving their own truck. Unlike employees of larger trucking firms who get paid by the hour, independent owner operators get paid for each trip, independent of the time it

[10] Washington Environmental Health Disparities Map
[11] 2018 Truck Parking Survey Final.pdf
[12] Findings from the National Agricultural Workers Survey (NAWS) 2017–2018: A Demographic and Employment Profile of United States Farmworkers (dol.gov)

takes. This Project indirectly addresses this issue by improving the ability of the gate system to process full export containers into the terminal.

Any increase in the velocity of the truck gate that shortens the time independent truck drivers are waiting for their container to be processed and improves their ability to make a living. Any improvement in the capacity of T-5 to move agricultural exports increase export capacity, supporting additional agricultural jobs.

One of the benefits of the Project is that any reduction in truck queuing on SW Spokane Street will commensurately reduce diesel emissions. This applies to both trucks waiting to enter T-5 and any truck or other vehicle stuck in the queue. Truck drivers on the terminal are instructed to turn off their equipment during breaks in, and before the start of, terminal operations. Queues are more likely to occur in the morning when the queuing area is open and during labor-contract mandated breaks.

The benefits of air emissions reductions go beyond the immediate vicinity of Terminal 5 and would reduce air pollutant loads on communities that are disproportionately impacted by diesel pollution. T-5 is part of the Duwamish Manufacturing Industrial Center in Seattle, King County, WA. Based on the Washington Tracking Network's Diesel and Disproportionately Impacted Communities Index, the project location and surrounding Census blocks experience high levels of diesel pollution load and socioeconomic factors exacerbate these impacts. Specifically, the project location (Washington King County census tract 009900) scores a 9 (out of 10) on the index. Additionally, most census tracts in the Duwamish Valley area (the Georgetown and South Park neighborhoods), Beacon Hill, downtown Seattle, and South Downtown rank at 9s and 10s in the diesel and disproportionate impacts metric. Furthermore, King County is on the latest National Air Toxics Priority List, based on results of the 2014 National Air Toxics Assessment.

E. Leveraging Federal Funding to Attract Non-Federal Sources of Investment

Since its inception in 2015, the NWSA has spent over $500 million on container terminal improvement projects at the Seattle and Tacoma harbors. NWSA's tenants, including its partner at T-5, SSAT, committed $100 million in private sector funds over the same period. The Terminal 5 Export, Expansion, and Emissions Reduction Project, with an additional $26,289,500 in Project costs, is intended address current disruptions in export supply chains and provide both efficiencies and room for future growth. Adding gate capacity for export loads and increasing container yard acreage that can be used to support U.S. exporters will allow T-5 to handle more containers, in particular export containers, more reliably and efficiently, further encouraging trade and private investment at this U.S. seaport.

V. PROJECT READINESS

A. TECHNICAL CAPACITY

i. Experience and Understanding of Federal Requirements

The Project team has overseen the construction of more than $500 million in NWSA improvements since the Ports of Seattle and Tacoma created the NWSA. That in-house capital program experience will oversee the Project.

The Project team has the requisite experience and understanding of federal requirements, from contracting to constructing, to ensure the project can be delivered on time and within budget. The Project team has already conducted environmental studies for the site as part of other nearby projects that will reduce the likelihood of environmental challenges to the project under the National Environmental Policy Act (NEPA), State Environmental Policy Act (SEPA), Endangered Species Act, or Clean Water Act. The Project team has extensive experience procuring services and goods in compliance with the Federal Acquisition Regulation and is committed to maintaining an open, competitive bidding and procurement process for all components proposed within this application. Indeed, the Project team will soon begin issuing FAR-compliant bidding packages to enable this project to begin moving forward shortly after entering into contract with the Maritime Administration.

ii. Experience Working with Federal Agencies

The Project team has vast experience working with a range of federal agencies, including the U.S. Department of Transportation, Maritime Administration, U.S. Army Corps of Engineers, U.S. Coast Guard, Federal Emergency Management Administration, and the Federal Aviation Administration. Partnerships with these and other federal agencies have resulted in direct funding of critical infrastructure projects, knowledge sharing and development of best practices, regional readiness planning for disasters, early compliance with forthcoming rules and regulations, and preparing for future economic and community growth.

iii. Experience with BUILD, INFRA and PIDP Awards

The NWSA has direct experience with PIDP, BUILD and TIGER grants that will be leveraged to help implement the Project in time and on schedule. In 2020, the NWSA was awarded $10,687,333 for the Terminal 5 Uplands Modernization and Rehabilitation Project: Final Phase, which consists of infrastructure improvements including paving, installation of Phase 2 of a terminal-wide storm water treatment system, as well as infrastructure to increase the electric refrigerated plug capacity and on-terminal rail infrastructure improvements. This work will be beginning soon as a part of the Phase 2 work of the Terminal 5 Modernization Program.

iv. Feasibility / Constructability

The Project team has many decades of experience in completing similar, as well as larger and more complex types of projects requiring planning, stakeholder outreach and coordination, preliminary and final design, environmental review and permitting, bidding, and construction.

Recent projects of comparable complexity include the Thorne Road Off-Dock Container Support Facility Project and the Terminal 5 Uplands Modernization and Rehabilitation Project.

v. Schedule

The Truck Gate Complex Component 1 of the Project is at 90% design and final design is scheduled for completion by December 2022. All other necessary permitting, approvals, final design, and construction will be completed by early 2025. Design and permitting for the Yard Expansion Component 2 of the Project will begin in early 2023. Construction for both Project Components will begin in early summer 2024 and be completed by the end of 2025. The following schedule conservatively assumes that a NEPA EA will be required. A NEPA Categorical Exclusion (CATEX) may be applicable and would streamline the process by a number of months. A request by NWSA to MARAD for early Release of Funds to support design would also minimize delays if an EA was required (see mitigation discussed in Table 3 below).

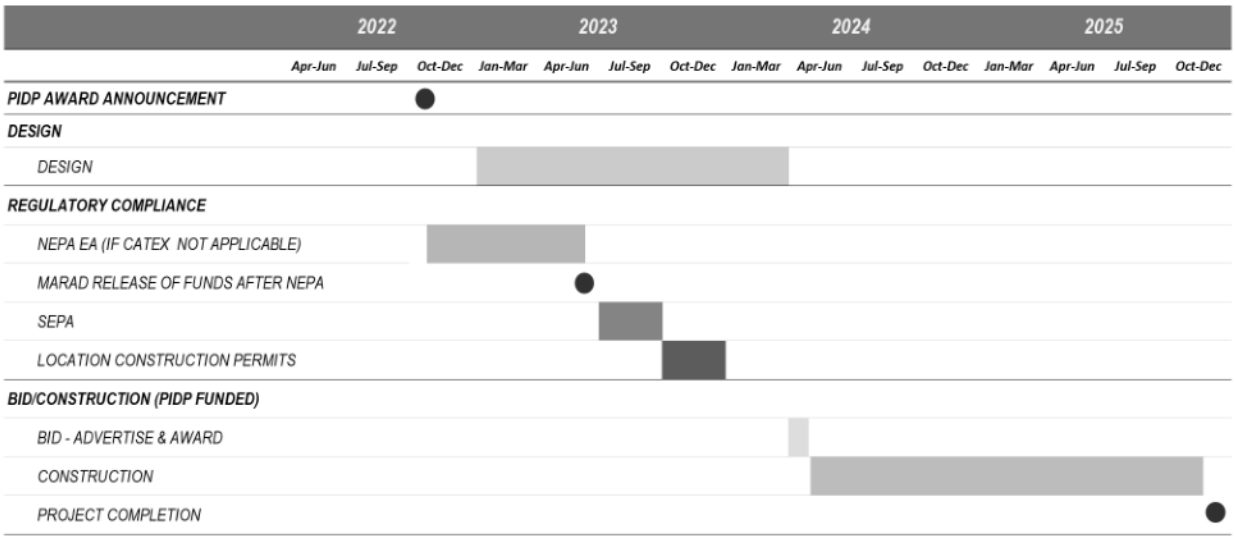


Figure 9: Schedule

B. Environmental Risk

It is anticipated that a federal agency such as MARAD would serve as the lead agency for NEPA consultation. NEPA compliance could be coordinated and completed relatively quickly upon award. The Project occurs at an existing port terminal and involves upgrades to an existing paved terminal yard. No project elements occur in or near surface waters (marine or wetlands) or outside of the developed marine terminal property boundary. Federally protected species and habitat, historic buildings, and cultural resources are not anticipated given the heavy industrial nature of the site and limited extent of proposed construction activities. The Project may be suitable for a NEPA Categorical Exclusion or an Environmental Assessment (an Environmental Impact Statement [EIS] is not anticipated given the relatively limited nature of the proposed work).

In October 2016, the Port of Seattle and The Northwest Seaport Alliance completed an Environmental Impact Statement (EIS) in compliance with the Washington State Environmental Policy Act (SEPA) for the Terminal 5 Uplands Modernization and Rehabilitation Project, which is available here: https://www.portseattle.org/environment/sepa-nepa. This review can be referenced to support the proposed Project. The intent of the proposed T-5 Export, Expansion, and Emissions Reduction Project is to enhance operations on the current terminal and associated roadway. No new right-of-way will need to be acquired and the Project addresses asset management and operational improvements. If awarded the grant, the Port will coordinate with MARAD on the potential appropriate environmental review and documentation needs. The following Categorical Exclusions could be applicable to the proposed PIDP grant application elements (MAO 600-1, Appendix 1):

4. Reconstruction, modification, modernization, replacement, repair, and maintenance (including emergency replacement, repair, or maintenance) of equipment, facilities, or structures which do not change substantially the existing character of the equipment/facility/structure.
7. Project or program actions for which applicable environmental documentation has been prepared previously and environmental circumstances have not subsequently changed.

If a NEPA Environmental Assessment is deemed necessary by MARAD, the Port assumes the process will take between 6 to 12 months to complete (includes Section 106 and Section 7 compliance, MARAD review, and FONSI publication).

i. Environmental Permits and Reviews

The project team is familiar with the federal, state, and local permitting processes for this type of project. As described in the previous section, the NWSA has experience with NEPA. NWSA also has experience with the National Historic Preservation Act Section 106 concurrence, which will be required as part of NEPA review. A survey completed in support of the Terminal 5 Uplands Modernization and Rehabilitation Project indicated that there are no federal (or state/local) listed or eligible historic or cultural buildings, structures, or sites located within the project area or its immediate vicinity.

Terminal 5 is entirely paved, with no areas of terrestrial habitat. There is no proposed in-water construction; therefore, the project will not directly impact sensitive biological resources. Impacts to species protected under Section 7 of the Endangered Species Act are not anticipated.

Additional state and local environmental reviews and permits are described in the following section.

ii. State and Local Approvals

No project elements occur in or near surface waters (marine or wetlands) or outside of the developed marine terminal property boundary and anticipated permits are limited to the following.

State:

- Washington's State Environmental Policy Act (SEPA): SEPA compliance is required for projects in Washington state to analyze the potential for environmental impacts from government decisions. October 2016, the Port of Seattle and The Northwest Seaport Alliance completed an EIS in compliance with the Washington State Environmental Policy Act (SEPA). Impacts from the proposed T-5 Project are considered in the Final EIS as part of the larger T-5 Program and SEPA review. Existing conditions and environmental laws, policies, and regulations have not changed in the intervening years.
- Washington State Department of Ecology National Pollutant Discharge Elimination System Construction Stormwater General Permit: A NPDES Construction Stormwater General Permit may be required for this project. This permit would be obtained closer to construction. The Project Team has extensive experience in obtaining this type of permit if deemed necessary.

Local:

City of Seattle Construction, Demolition, and Utility Permits – Final site development and/or construction permits (including utility permits) as well as demolition arrival will be required. Applications will be supported by project drawings, and any required stormwater site plan reports and pollution prevention plans. It is anticipated that the emissions associated with construction will be negligible.

iii. Environmental Studies

The following additional studies could be required in support of the project permits and design (need will be determined during further design).

- Geotechnical Report – A geotechnical investigation and report may be required to characterize existing conditions at the site and inform criteria for infiltration design.
- Hazardous Materials Building Survey – A hazardous materials building survey may be required if structures to be demolished contain lead-based paint or asbestos containing materials. This survey may be required to support demolition approval.

C. Risk Mitigation

The improvements proposed for the Project involve standard civil works construction within a design-build procurement framework. As with any project that involves construction below the ground surface, there is always some degree of risk involved with encountering unforeseen conditions such as obstructions, contaminated soils, or unmapped utilities. The minimal risks to Project financing and construction include those outlined in Table 3.

Table 3: Project Risks and Mitigation Strategies

Risk	Description	Impact / Probability	Mitigation
Federal Funding	$17,035,900 shortfall	High / Moderate	PIDP grant
Hazmat/ Contamination	Unknown hazmat may be found during construction/excavation	High / Low	Early geotechnical exploration
Regulatory or contractual delays	Delayed construction start could add significant cost in current market environment	Moderate/ Moderate	Authorize NWSA expenditures to proceed with Final Design, Permitting, and NEPA immediately after grant award and to be considered part of the non-federal match.

VI. DOMESTIC PREFERENCE

NWSA is aware of the April 2022 OMB guidance on domestic preference and will comply with its policies and procedures.

The Project is designed to comply with the Build America, Buy America Act, particularly as NWSA seeks to support United States businesses as they recover from the recent tumult caused by the novel coronavirus (COVID-19).

For this PIDP application, the NWSA considered including zero and near-zero emission cargo handling equipment, with the terminal operator as co-applicant. However, we were unable to include this project component because procurement lead times for such equipment are 18-24 months and because manufacturers are unable to verify that individual components of American Made equipment meet Buy America requirements.

The NWSA is concerned that the Buy America program, in general, may be in conflict with the Administration's decarbonization/climate goals. We encourage USDOT to adopt a position of flexibility with regard to waivers over the next few years to provide time for U.S. manufacturers to achieve the scale needed to meet the demand for zero-and near-zero emissions cargo handling equipment and make their production lines compliant with Buy America requirements.

VII. DETERMINATIONS

Project Determination	Guidance
1. The project improves the safety, efficiency, or reliability of the movement of goods through a port or intermodal connection to the port.	The Project will reduce export truck time by an average of 15 minutes per trip. As a major U.S. agricultural export facility, the Project will save more than 1.8 million hours of export truck time over the 20-year analysis period. These efficiency benefits are quantified in the Benefit-Cost Analysis Report. The Project will also reduce import truck times and reduce the number of empty containers exported from NWSA facilities. These efficiency benefits were not quantified in the BCA, but likely will add substantial additional benefit to T-5, NWSA, and the larger domestic supply chain.
2. The project is cost effective.	The Terminal 5 Export, Expansion and Emission Reduction Project has a Benefit-to-Cost Ratio of 1.50. The results of the BCA are summarized in Table 2 of this Narrative and the attached Benefit-to-Cost Analysis Report and Model.
3. The eligible applicant has the authority to carry out the project.	The Northwest Seaport Alliance (NWSA) is a marine cargo operating partnership governed by the Port of Seattle and the Port of Tacoma as equal members, with each port acting through its elected commissioners. Both ports are port authorities under Washington State Law RCW 53.04.010, and as such are eligible to receive PIDP program funds.
4. The eligible applicant has sufficient funding available to meet the matching requirements.	Projects to secure additional commitment for Terminal 5's Phase II term lease and complete commercial negotiations relative to a Terminal 5 intermodal yard and other open leasehold issues are included as a priority in The NWSA Operating 2022 Budget and Five-Year Capital Improvement Plan. The NWSA Chief Executive Officer details the funding sources and their authorization in a letter attached to this grant application.

Project Determination	Guidance
5. The project will be completed without unreasonable delay.	The Truck Gate Complex Component 1 of the Project is at 90% design and is scheduled for completion by December 2022. All other necessary permitting, approvals, final design, and construction will be completed by January 2025 to allow PIDP funds to be obligated sufficiently in advance of the statutory deadline (September 30, 2025). The Yard Expansion Component 2 of the Project design, permitting, and approvals will begin in December 2022. Final design and construction will be completed by January 2025 to allow PIDP funds to be obligated sufficiently in advance of the statutory deadline (September 30, 2025).
6. The project cannot be easily and efficiently completed without Federal funding or financial assistance available to the project sponsor.	NWSA does not have resources to construct the T-5 Export, Expansion, and Emissions Reduction Project with existing resources. Without a PIDP grant, Project construction will be indefinitely delayed during this period of significant inflation. Such a delay will directly affect U.S. export farmers, producers, and manufacturers.

TERMINAL 5 EXPORT, EXPANSION, AND EMISSIONS REDUCTION PROJECT

SEATTLE, WASHINGTON



U.S. DEPARTMENT OF TRANSPORTATION / MARITIME ADMINISTRATION
FY 2022 PORT INFRASTRUCTURE DEVELOPMENT PROGRAM (PIDP)
GRANT APPLICATION

BENEFIT-COST ANALYSIS REPORT

Submitted by:
The Northwest Seaport Alliance (NWSA)

THE NORTHWEST
SEAPORT ALLIANCE

TABLE OF CONTENTS

I. OVERVIEW 1
II. SUMMARY OF BENEFITS 4
III. ASSUMPTIONS 5
A. Export Container Volumes 5
B. Reduction in Truck Queuing Time 8
C. Project Costs 8
D. Operating and Maintenance Costs 9
E. Residual Value 9
IV. CALCULATION OF BENEFITS – DETAILS 9
A. Economic Competitiveness & Opportunity 9
i. Reduction in Truck Wait Time 9
ii. Reduction in Highway Congestion Costs on SW Spokane St. 9
iii. Reduction in Truck Shifts 10
B. Environmental Sustainability 11
i. Reduction in Truck Queuing Time 11

TABLE OF FIGURES

Figure 1: Project Components 1
Figure 2: Truck Queue Spilling Over onto SW Spokane St 4
Figure 3: Terminal 5 Container Volume Forecasts 5
Figure 4: Origins of NWSA Exports by Commodity Type 6
Figure 5: Origins of 75% of NWSA Exports 6

LIST OF TABLES

Table 1: Summary of Project Benefits (2020 US$, PV Discounted @ 7%) 3
Table 2: Truck Turn Times for Exporters near Ellensburg / Quincy 7
Table 3: Exports Unable to Make Two-Truck Turns due to Wait Times – Without-Project Scenario 7
Table 4: Summary of Total Project Costs 8
Table 5: Summary of Calculation for Truck Queue on SW Spokane St. 10
Table 5: Summary of Calculation for Trucker Shift Reduction 11
Table 7: Summary of Vehicle Emission Factors (2020 US$) 12
Table 8: Summary of Highway Truck-Mile Emission Savings (Present Value 2020 US$) 12

I. OVERVIEW

The Northwest Seaport Alliance (NWSA) is requesting $17,035,900 in FY22 Port Infrastructure Development Program (PIDP) grant funding for the Terminal 5 Export, Expansion, and Emissions Reduction Project (the Project). **The Project has a Benefit-to-Cost Ratio of 1.50**, summarized in Table 1. The Project consists of the following two project components:

1. **Construction of a new truck gate complex**: Construct 12 new inbound truck lanes and install 8 new truck scales, increasing the number of scales from 6 to 8. The new gate structure will be repositioned 930 feet further into the terminal complex, allowing an additional 100 trucks to queue inside the terminal. This will reduce or eliminate most of the truck queues on SW Spokane St and reduce roadway network traffic congestion due to port trucks. Existing gate infrastructure will be demolished when construction is completed.
2. **Construction of a cargo container storage area**: Create 6 acres of additional container yard space by demolishing the existing Container Freight Station building, building new container yard space (pavement and stormwater infrastructure), and improving the connection between the existing container yard and the extension. This additional container yard space will allow the Port and the Terminal to prioritize and pre-position just-in-time export containers and to better manage lower priority import and empty containers.



Figure 1: Project Components

The truck gate complex and yard expansions will especially support U.S. agricultural and other exports. Agriculture exporters have been disproportionately impacted by the current supply chain congestion. In 2021, laden exports from the NWSA were down nearly 13% YoY – approximately 100,000 TEU – and are down 28% YTD in 2022. Historically, the NWSA is the leading export gateway for key agricultural commodities such as apples, potatoes, and pulses. Additionally, it is a leading export gateway for hay and forage.

Agriculture companies rely on export markets to remain profitable and viable. However, over the last two years, as import container volumes and demurrage have grown, it has left little space on US container terminals for exporters. Expanded gate capacity, infrastructure and yard space at Terminal 5 will support efforts to reverse this trend.

Additional gate scales and yard space will decrease truck turn times and provide additional capacity for prioritizing export loads. This will make the export process more efficient and less costly. It is estimated that, as a result truck turn times will be reduced by approximately 15 minutes on average for export containers. In addition, the quicker truck turn times will allow some truckers to do two full turns in a shift as well as deliver more export containers within the (very narrow) scheduled windows for dropping off containers prior to a vessel arrival. Export containers must be on the terminal before a ship is unloaded to avoid congestion on the terminal due to both terminal activities occurring at the same time.

By repositioning the gate, truck queues at the gate will no longer spill onto SW Spokane St. This has been a major issue in the past when the terminal had the same throughput capacity it currently does. One goal of the project is to prevent these queues from reoccurring. Truck queuing on SW Spokane St. mainly occurs during peak hours of the day. Peak hours tend to occur during the early morning hours of the day, due to export truckers attempting to do two full truck turns within their 11-to-14-hour shift[1]. Therefore, if congestion during this time extends truck turn times, they can no longer deliver two export containers in one shift, adding transportation costs to exporters. Such congestion on the road causes added travel time to daily commuters. In addition, it can also pose a major issue for emergency situation response times in the corridor. Truck queues can delay fire trucks and ambulances trying to reach citizens in times of an emergency.

In total, the Project is expected to save 1.8 million hours for truckers delivering export containers to Terminal 5 over the 20-year analysis period.

While not quantified in this BCA analysis—the terminal just reopened a few months ago and is not yet fully operational – the Project will reduce the overall number of empty export containers from the Port and reduce the number of loaded export containers that miss the narrow "just-in-time" export delivery windows due to port and truck congestion.

For this analysis, the following With and Without-Project Scenario assumptions were considered:

- **With-Project Scenario:** Terminal 5 gate complex expansion with added container yard capacity, supports increased export volumes and velocity. This additional gate capacity and container yard space will allow the Port and the Terminal to prioritize and pre-

[1] https://www.fmcsa.dot.gov/regulations/hours-service/summary-hours-service-regulations

position just-in-time export containers and to better manage lower priority import and empty containers. As a result, truck wait times will be reduced by 15 minutes on average for all export containers. The reduction in wait time during peak hours will have a significant impact on export containers originating in areas just east of the Cascade Mountains' passes. Truckers will be able to pick up and return a second container within a single shift. As a result, exporters will be able to get more containers delivered at a lower cost. In addition, the new gate location will allow for more on terminal truck queuing at the gate, reducing the likelihood of the queue overflowing onto SW Spokane St during peak hours.

- **Without-Project Scenario:** Terminal 5 does not increase its gate or container yard capacity. Congestion will worsen along the surrounding highways of the terminal as truck traffic continues to be an issue, increasing safety costs, truck operating costs, and greenhouse gas emissions. The Port's ability to support agricultural exports and other exports will not be improved as truck wait times are not alleviated (at least in part) by added gate capacity.

The BCA reflects USDOT's standard guidance regarding forecast periods and discount rates. As such, all estimates were calculated over a 20-year period, beginning in 2025 following the Project's completion in 2024 in the With-Project Scenario. Additionally, a discount rate of 7 percent was used throughout the analysis (a discount rate of 3 percent was used for CO_2 emission benefits) as suggested in USDOT BCA guidelines for 2022. **The Project has a Benefit-to-Cost Ratio of 1.50.** The results of the BCA are summarized below in Table 1.

Table 1: Summary of Project Benefits (2020 US$, PV Discounted @ 7%)

Category	Total
Economic Competitiveness	$25,561,817
Environmental Sustainability	$539,959
Operating & Maintenance Costs	($1,269,306)
Residual Value	$1,442,209
Total Benefits	**$26,274,678**
Project Costs	$17,534,894
Net Present Value	$8,739,785
Benefit to Cost Ratio	**1.50**

II. SUMMARY OF BENEFITS

The benefits quantified to determine the Benefit-to-Cost Ratio stem from the increase in annual export container storage capacity, reduction in truck queuing time, and reduced greenhouse gas emissions. The analysis presented here quantifies the following benefits:

- **Reduction in truck waiting time.** The new gate complex and yard expansion will reduce average truck turn times by 15 minutes for export containers. Currently, the average turn time at the Terminal 5 is 70 minutes for all containers. Reduced truck waiting times will result in lower fuel consumption and time saving benefits.
- **Reduction in off-terminal truck queueing.** The repositioning of the new gate terminal will allow for 100 more trucks to wait on-terminal, thereby taking trucks off SW Spokane St. Congestion costs associated with such traffic has been considered as part of this analysis. While such congestion on the road can also pose a major issue for emergency situation response times, such benefits have not been considered as part of this analysis.

Figure 2: Truck Queue Spilling Over onto SW Spokane St



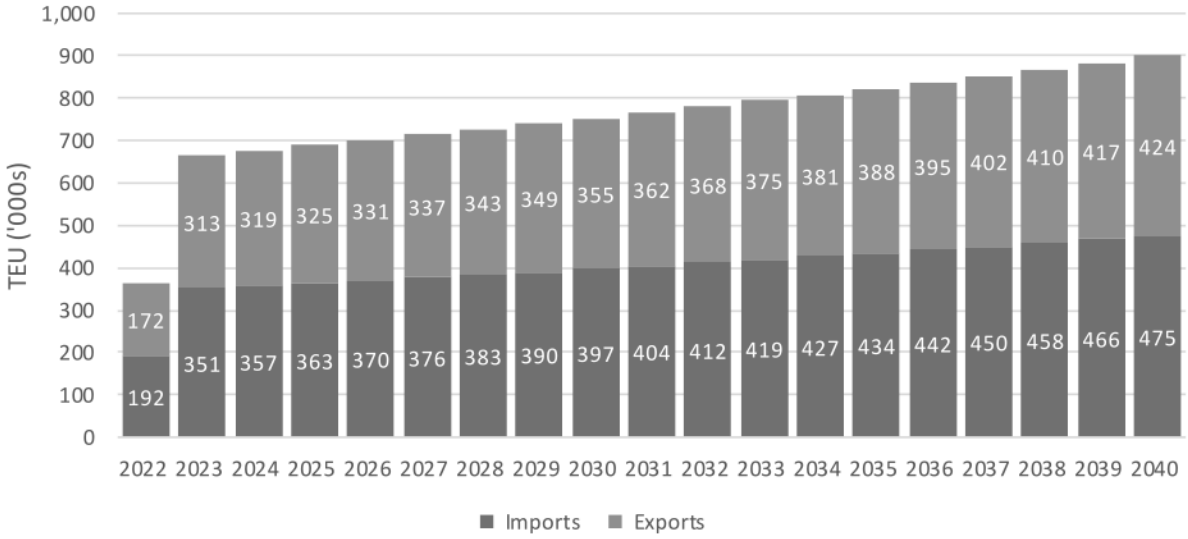
- **Reduction in trucker shifts.** The gate complex upgrade and yard expansion will allow export containers to move through Terminal 5 much faster. Therefore, for certain markets, truckers will be able to do two full truck turns(roundtrips) in a shift as opposed to just one under current congestion conditions at the gate and external roadways. Therefore, certain exporters will only require half the number of truck shifts to deliver the same number of containers to the Port.

III. ASSUMPTIONS

A. EXPORT CONTAINER VOLUMES

Figure 3 displays the forecasted annual cargo volumes over the analysis period, as developed by NWSA. The large increase in volumes between 2022 and 2023 since T-5 major upgrades were only completed this year and is in a ramp-up period.

Figure 3: Terminal 5 Container Volume Forecasts



Many agricultural exporters utilizing NWSA originate from Eastern Washington or east of the mountain passes, as seen in Figure 4 and Figure 5. Typically, exporters need to maximize their truck capacity to fulfil the weekly targets for exported product. However, each vessel they are looking to load out may only provide two days of receiving windows. The days for receiving may also change with very little notice. Terminal congestion on receiving days may delay trucks returning to pick up a second load and in many cases make it impossible to get a second load during their legal shift. The consequence for the exporter is a missed cargo opportunity and increased cost per container. Hay, the largest single export commodity at the NWSA, is an example: It primarily originates in Ellensburg, approximately 100 miles from our terminals. Truckers deliver containers loaded in Ellensburg and must complete two trips per day in order to make exporting profitable. An expanded gate complex reduces the time for a truck to complete its delivery to the Terminal, helping that truck to complete its minimum two daily trips. THis is also true for exports out of the area surrounding Quincy. With a yard dedicated to exports, laden containers could be pre-staged and when export receiving opens, a small group of yard trucks could shuttle all of the containers into the existing terminal efficiently.

Figure 4: Origins of NWSA Exports by Commodity Type

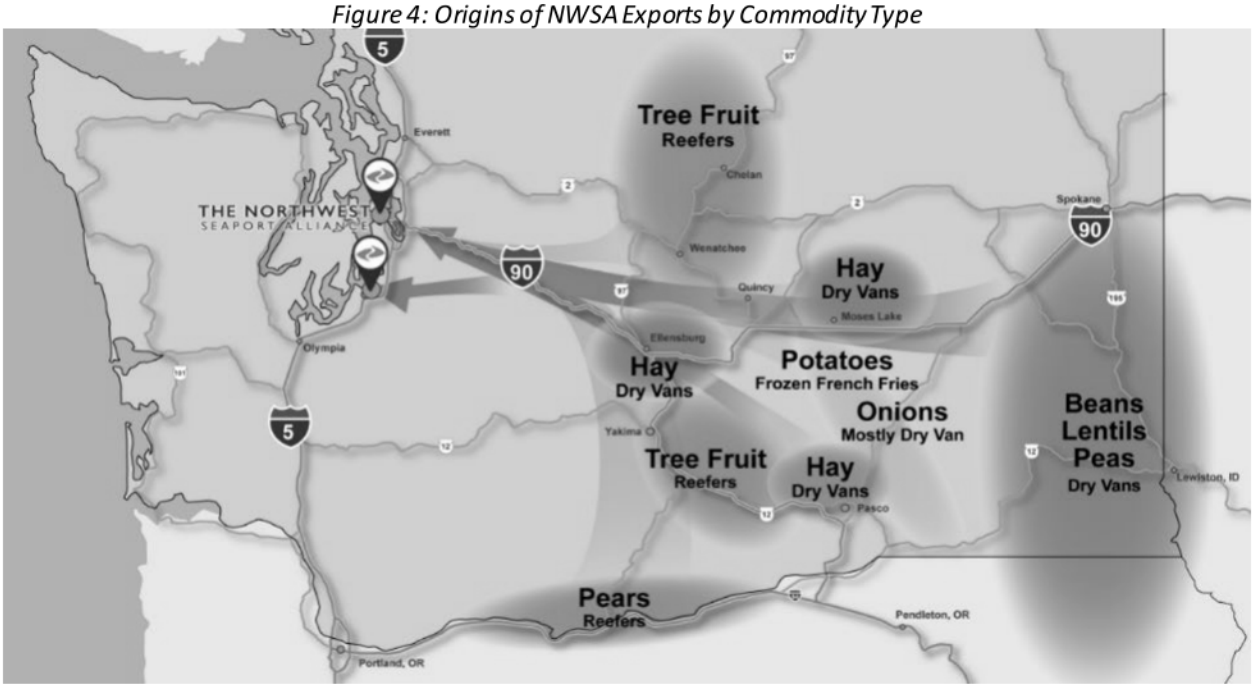
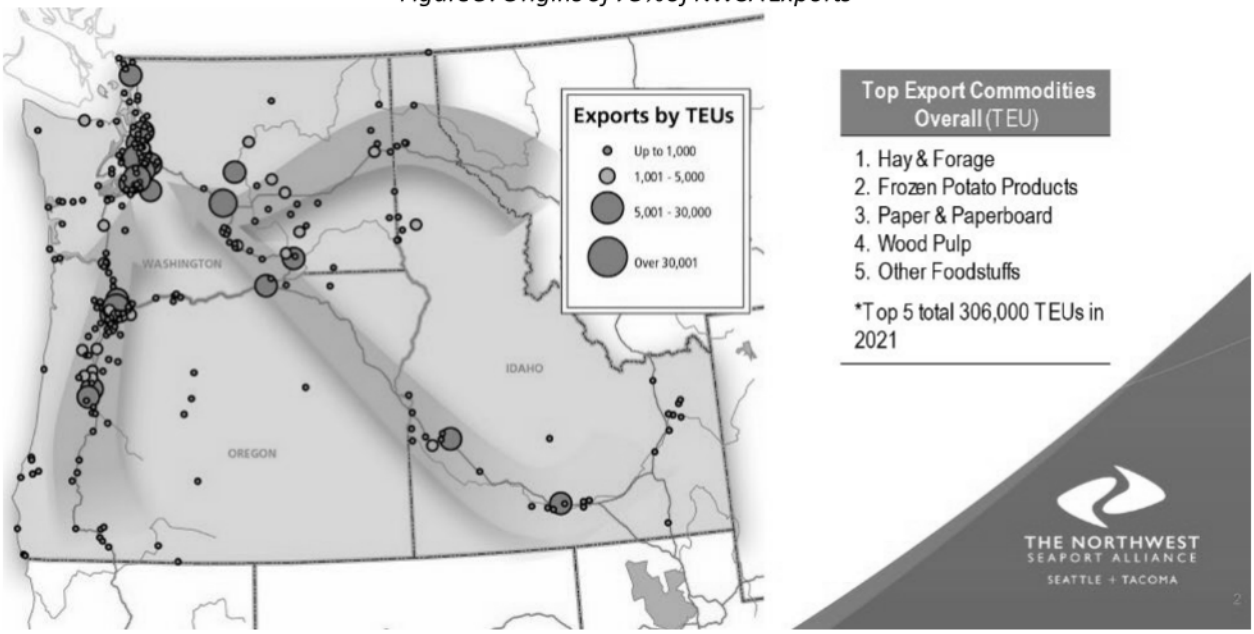


Figure 5: Origins of 75% of NWSA Exports



As noted in the figure above, there is a cluster of hay and tree fruit exporters around Ellensburg and Quincy, which is approximately 2.0 to 2.5 hours from the Port. Approximately 25% of all NWSA agricultural exports come from this region. Additionally, approximately 10% of such volumes will be able to make two truck turns as a direct result of this Project, whereas they would not be able to without it. These are the truckers finding themselves in current peak gate congestion. As a result, truck turn times are currently significantly above average for many export

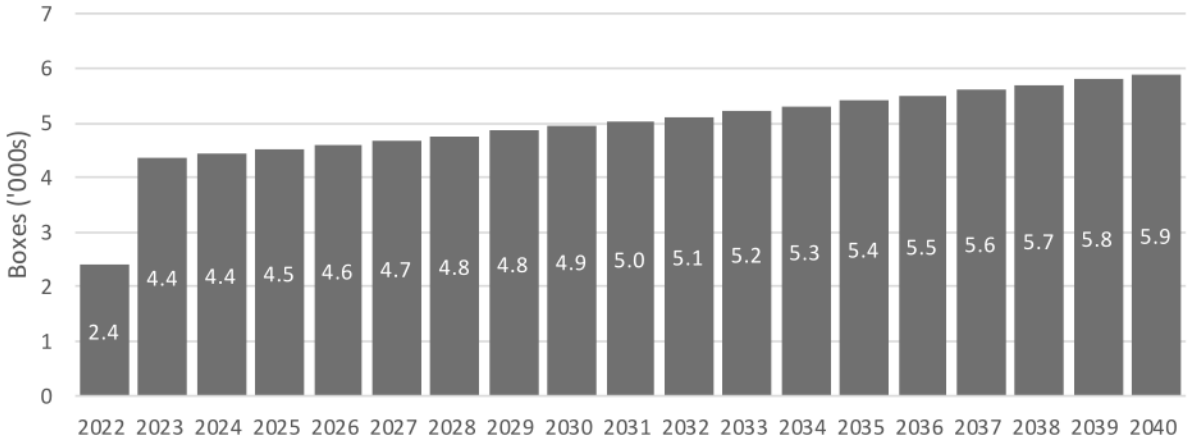
truckers, making it impossible for them to make two truck turns in a 12-hour shift[2]. However, with the new gate and added scales, truck turn (roundtrip) times are going to significantly improve, specifically for exporters trying to drop off a container during peak hours. For these truckers truck turn times in the morning shift will improve from 120 minutes (2.0 hours) to the average of 55 minutes (70 minutes (current average) – 15 minutes (time saved with Project)), or 0.9 hours. With truck turn times at an hour on average, more truckers in the Ellensburg / Quincy region can now make two round trips, as shown in Table 2.

Table 2: Truck Turn Times for Exporters near Ellensburg / Quincy

	Time (Hours)	
	Without-Project	With-Project
Pick up export container	1.0	1.0
Ellensburg / Quincy to Seattle	2.5	2.5
Turn Time (Peak Hours)	2.0	0.9
Seattle to Ellensburg / Quincy	2.5	2.5
Pick up export container	0.5	0.5
Ellensburg / Quincy to Seattle	2.5	2.5
Turn Time	0.9	0.9
Leaving Port	0.5	0.5
TOTAL	**12.4**	**11.3**

With approximately 25% of export containers coming from the Ellensburg / Quincy area, and an expected 10% of exporters being able to make two truck turns per shift with the Project, an estimated (25% x 10% =) 2.50% of export volumes will be able to be handled via one 12-hour trucker shift vs two shifts.

Table 3: Exports Unable to Make Two-Truck Turns due to Wait Times – Without-Project Scenario



[2] Shift-length utilized in BCA model – falls within the cited 11-to-14 shift range

While there will undoubtedly be more export containers and truckers directly impacted by the reduction of truck turn times in relation to operating efficiency, this subset of eastern Washington export containers is the most impacted by current market conditions.

B. Reduction in Truck Queuing Time

Currently, average truck turn times are 70 minutes. The new gate system will have the capacity to provide a "quick gate" for the near dock "just-in-time" exports and allow those trucks to bypass the congestion. Each gate pedestal in the new configuration will complete an average of 250 transactions per day, and one or more "quick gates" will be dedicated to "just-in-time" exports with narrow delivery windows—principally perishables and agricultural exports originating east of the mountain passes. Other exporters may use the expanded storage area to pre-position their export containers and benefit from the shorter truck turn times.

With the added gate capacity, new scales, and dedicated yard space for exports, it is expected that average truck turn (roundtrip) times for exports will improve by 15 minutes as a direct result of the Project.

C. Project Costs

The total cost of the Project is estimated to be $26.26 million in 2023 US$, or $22.65 million in 2020 US$, as shown in Table 4, and has a present value of $17.53 million (present value discounted at 7 percent in 2020 US$). Design and permitting of the truck gate complex will be completed in 2022, while design and permitting of the yard expansion will be completed in 2023. Construction of both project components will begin and end in 2024.

Table 4: Summary of Total Project Costs

Project Component	Cost (2023 US$)	Cost (2020 US$)
Truck Gate Complex		
Design, Permitting, Construction Mgmt.	$1,922,500	$1,658,140
Construction	$13,668,000	$11,788,531
Truck Gate Complex Total	**$15,590,500**	**$13,446,670**
Yard Expansion		
Design, Permitting, Construction Mgmt.	$2,163,000	$1,865,569
Construction	$8,506,000	$7,336,351
Yard Expansion Total	**$10,669,000**	**$9,201,920**
TOTAL	**$26,259,500**	**$22,648,590**

As cost estimates were provided in 2023 US dollars, costs were put in constant dollars by removing inflation. Inflation estimates were based on IMF[3] CPI percent changes of 1.25% in 2020, 4.68% in 2021, 7.68% in 2022, and 2.86% in 2023.

[3] https://knoema.com/kyaewad/us-inflation-forecast-2022-2023-and-long-term-to-2030-data-and-charts

D. Operating and Maintenance Costs

Ongoing maintenance costs of the Project are expected to be approximately $1.27 million (present value discounted at 7 percent in 2020 US$) over the 20-year analysis period. This assumed that annual operating and maintenance costs are approximately 1.0% of Truck Gate Complex and 0.5% of Yard Expansion project costs. Due to technology and efficiency upgrades, the annual operating costs will be slightly less than current operational costs.

E. Residual Value

The proposed Terminal 5 gate complex project has a design life of 30-years, while the yard expansion has a design life of 50-years.

The gate complex has an estimated construction cost of $11.79 million in 2020 US$. At the end of the BCA's analysis period, it is projected to have a remaining life of 10 years. Using a linear depreciation method, the estimated remaining life value of the Project at the end of the BCA's analysis period is $3.93 million. As a result, the gate complex has a residual value of $611,457 (present value in 2020 US$ discounted at 7 percent) when considering future maintenance and operating costs.

The yard expansion has an estimated construction cost of $7.83 million in 2020 US$. At the end of the BCA's analysis period, it is projected to have a remaining life of 30 years. Using a linear depreciation method, the estimated remaining life value of the Project at the end of the BCA's analysis period is $4.70 million. As a result, the yard expansion has a residual value of $830,752 (present value in 2020 US$ discounted at 7 percent) when considering future maintenance and operating costs.

In total, the Project has a residual value of $1.44 million (present value in 2020 US$ discounted at 7 percent) when considering future maintenance and operating costs.

IV. CALCULATION OF BENEFITS – DETAILS

A. Economic Competitiveness & Opportunity

i. Reduction in Truck Wait Time

Truck queuing time will be reduced for export containers with the implementation of the Project, providing truck travel time savings for truck operators moving through Terminal 5. USDOT's BCA guidance value of $32.00 (in 2020 US$) was used to monetize truck operator waiting time at the terminal gates. Multiplying the monetized value of truck operator time by the average savings in truck wait time (15 minutes per export container) under the With-Project Scenario determined the total savings in truck wait time at the terminal. Therefore, the Project will save $13.36 million (present value discounted at 7 percent in 2020 US$) in fuel costs during truck wait time over the 20-year analysis period in the With-Project Scenario.

ii. Reduction in Highway Congestion Costs on SW Spokane St.

With the Project allowing an additional 100 trucks to queue on-terminal, the likelihood of trucks to spill over onto SW Spokane St. during peak hours is basically eliminated. The daily peak hour

truck volumes were estimated using industry standard peaking factors on total volumes and a total of 60 gate operating hours per week. An example of the calculation is provided below based on 2025 volumes.

Table 5: Summary of Calculation for Truck Queue on SW Spokane St.

Step	Values	Units
2025 volume (TEU)	688,119	TEU
TEU (twenty-foot equivalent unit) per container	1.80	TEU / container
2025 volume (containers)	382,288	containers
Average containers per week	7,352	containers
Gate peak hour	1.25	factor
Gate operating hours per week	60	hours
Peak hour volume	153	trucks
Truck capacity - Without-Project	100	trucks
Trucks on SW Spokane St. daily peak hour	**53**	**trucks**

Therefore, it is calculated that approximately 53 trucks will wait idling on SW Spokane St. at some point each day given the current location of the gate, adding congestion costs to the surrounding highways.

Based on a study conducted by ATRI[4], the average annual congestion cost per truck was $6,478 (2018 US$, or $6,962 in 2020 US$). Therefore, in sticking with the previous example, the Project will save $370,128 (2020 US$) in truck congestion costs in 2025 in the With-Project Scenario. In total, the Project will save $4.19 million (present value discounted at 7 percent in 2020 US$) in congestion costs over the 20-year analysis period in the With-Project Scenario.

iii. Reduction in Truck Shifts

As previously explained, approximately 25% of NWSA exports come from areas where two truck turns (roundtrips) are possible considering optimal wait times at the terminal. In addition, 10% of these volumes are expected to be able to make the two truck turn times as a direct result of the Project. Continuing with the example of 2025 volumes, the below calculation summarizes how a reduction in truck shifts was determined for the purpose of this analysis.

[4] https://truckingresearch.org/wp-content/uploads/2018/10/ATRI-Cost-of-Congestion-to-the-Trucking-Industry-2018-Update-10-2018.pdf

Table 6: Summary of Calculation for Trucker Shift Reduction

Step	Values	Units
2025 export volume (TEU)	324,817	TEU
TEU per container	1.80	TEU / container
2025 export volume (containers)	180,454	containers
Share of volumes from Ellensburg / Quincy	25%	Percent
Share of Ellensburg / Quincy volumes impacted by Project	10%	Percent
Export volume delivered in one shift vs two	4,511	containers
Decrease in number of shifts	2,256	containers
Hours per shift	12	hours / shift
Reduction in truck hours	**27,068**	**hours**

Therefore, it is calculated that approximately 27,068 truck hours will be saved in 2025 in the With-Project scenario.

Based on USDOT's BCA guidance value of $32.00 (in 2020 US$) and the previous example, the Project will save $866,179 (2020 US$) in trucker operating time costs in 2025 in the With-Project Scenario. In total, the Project will save $8.02 million (present value discounted at 7 percent in 2020 US$) in trucker operating time costs over the 20-year analysis period in the With-Project Scenario.

B. Environmental Sustainability

i. Reduction in Truck Queuing Time

With the Project, environmental sustainability benefits that primarily stem from the reduction in truck queuing (waiting) time will save $539,959 (present value discounted at 7 percent in 2020 US$ with CO_2 discounted at 3 percent) in truck emission benefits over the 20-year analysis period. The emission rate for CO_2 was provided by the U.S. Environmental Protection Agency, while emission rates for NO_X, $PM_{2.5}$, and SO_x were provided by the 2021 Emission Factor (EMFAC2021) for trucks. For this analysis, it is assumed that trucks idle at a speed of 5 miles per hour and burn 1 gallon per hour while idling[5]. Multiplying truck speed during idling by the average savings in truck wait time at the terminal gates from the With-Project Scenario, and then multiplying by the emission rates for trucks will provide the estimated decrease in highway emissions. Emission costs from the USDOT BCA guidance were used in this analysis.

[5] Furthering Your Fuel Economy (truckstop.com)

Table 7: Summary of Vehicle Emission Factors (2020 US$)

Emission Type	Emission Rate [6]	Unit	US$ / Metric Ton [7]
CO_2	10,180	grams / gallon	67
NO_X	0.80	grams / mile	17,850
$PM_{2.5}$	0.02	grams / mile	857,610
SO_x	0.01	grams / mile	48,455

Table 8: Summary of Highway Truck-Mile Emission Savings (Present Value 2020 US$)

Emission Type	Emission Savings (tons)	PV of Benefits
CO_2	12,076	$470,115
NO_X	4.28	$29,905
$PM_{2.5}$	0.12	$38,768
SO_x	0.06	$1,171
Total		**$539,959**

[6] For NO_x, $PM_{2.5}$, and SO_x, emission rates are averages for 20-year period between 2025 and 2044.
[7] Emission costs are averages for 20-year period between 2025 and 2044

moffatt & nichol

Version 1.0
Forecast Model

This model was prepared on the basis of a scope of work agreed for the purpose of providing a presentation. In preparing this report Moffatt & Nichol has used both internal and publicly available data source. Moffatt & Nichol can accept no liability for the accuracy of data sourced in good faith from third party sources. Moffatt & Nichol undertakes no obligation to notify recipients of events occurring after the date on the front cover that might change the content or conclusion of this report.

Moffatt & Nichol can also accept no liability for the consequences of this model being used for a purpose other than for which it was commissioned and should not be relied upon for any other project without an independent suitability analysis being undertaken and the prior written authority of Moffatt & Nichol being obtained.

In order to enforce these terms the model will be available only for a limited time period.

Present Value (2020 US$)	Total
Economic Competitveness	$25,561,817
Safety	$0
Environmental Sustainability	$539,959
Operating & Maintenance Costs	($1,269,306)
Residual Value	$1,442,209
Total Benefits	**$26,274,678**
Project Costs	$17,534,894
Net Present Value	$8,739,785
Benefit to Cost Ratio	**1.50**

Present Value (2020 US$)	Total
Economic Competitveness	$25.56
Safety	$0.00
Environmental Sustainability	$0.54
Operating & Maintenance Costs	($1.27)
Residual Value	$1.44
Total Benefits	**$26.27**
Project Costs	$17.53
Net Present Value	$8.74
Benefit to Cost Ratio	**1.50**

	Without-Project	With-Project
Pick up export box	1.0	1.0
Ellensburg / Quincy to Seattle	2.5	2.5
Turn Time	2.0	0.9
Seattle to Ellensburg / Quincy	2.5	2.5
Pick up export box	0.5	0.5
Ellensburg / Quincy to Seattle	2.5	2.5
Turn Time	0.9	0.9
Leaving Port	0.5	0.5
Total	**12.4**	**11.3**

Step	Values	Units
2025 volume (TEU)	688,119	TEU
TEU per box	1.80	TEU / box
2025 volume (boxes)	382,288	boxes
Average boxes per week	7,352	boxes
Gate peak hour	1.25	factor
Gate operating hours per week	60	hours
Peak hour daily volume	153	trucks
Truck capacity - Without-Project	100	trucks
Trucks on SW Spokane St. daily peak hour	**53**	**trucks**

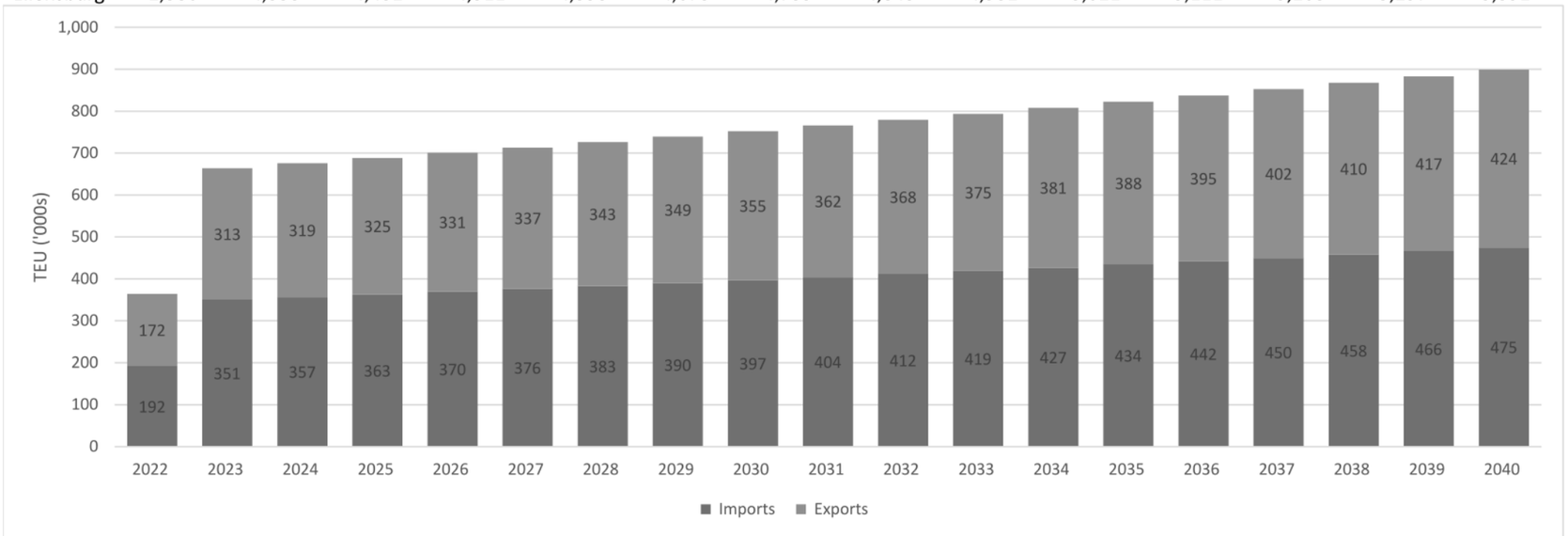
Step	Values	Units
2025 export volume (TEU)	324,817	TEU
TEU per box	1.80	TEU / box
2025 export volume (boxes)	180,454	boxes
Share of volumes from Ellensburg / Quincy	25%	percent
Share of Ellensburg / Quincy volumes impacted by Project	10%	percent
Export volume delivered in one shfit vs two	4,511	boxes
Decrease in number of shifts	2,256	boxes
Hours per shift	12	hours / shift
Reduction in truck hours	**27,068**	**hours**

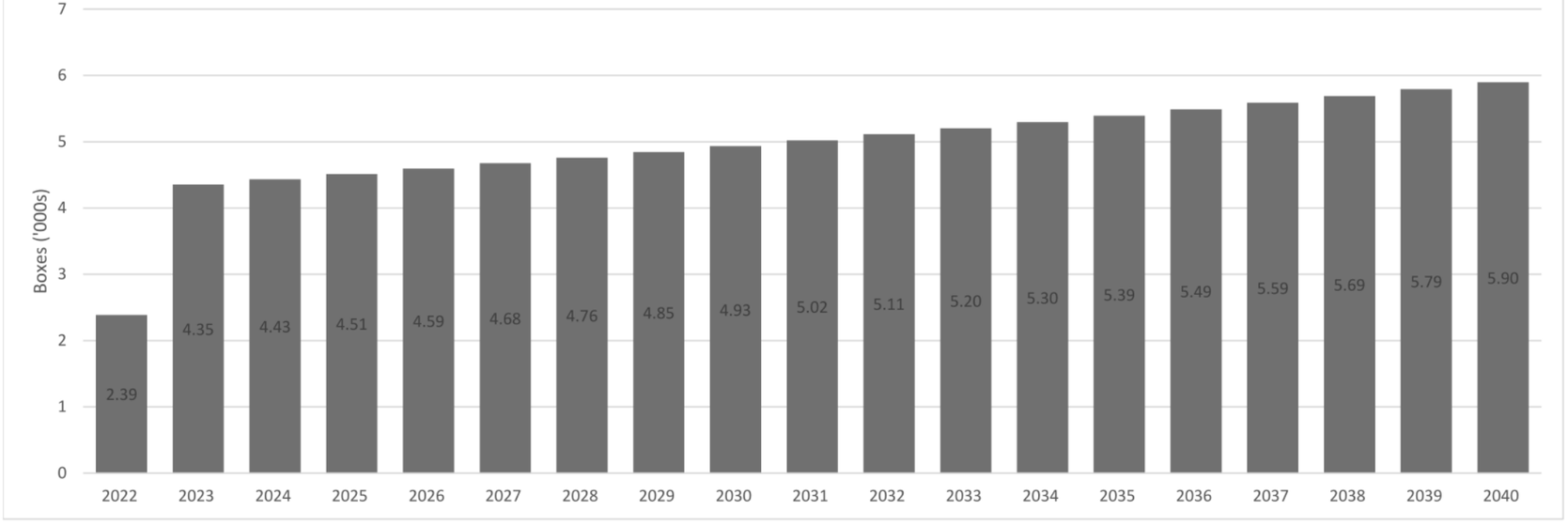
Emission Type	Emission Rate	Unit	US$ / Metric Ton
CO2	10,180	grams / gallon	67
NOX	0.80	grams / mile	17,850
PM2.5	0.02	grams / mile	857,610
SOx	0.01	grams / mile	48,455

Emission Type	Emission Savings (tons)	PV of Benefits
CO2	12,076	$470,115
NOX	4.28	$29,905
PM2.5	0.12	$38,768
SOx	0.06	$1,171
Total		**$539,959**

Project Component	Cost (2023 US$)	Cost (2020 US$)	
Design	$1,922,500	$1,658,140	TRUE
Construction	$13,668,000	$11,788,531	TRUE
Truck Gate Complex Total	**$15,590,500**	**$13,446,670**	TRUE
Design	**$1,587,000**	$1,368,774	TRUE
Construction	**$9,082,000**	$7,833,146	TRUE
Yard Expansion Total	**$10,669,000**	**$9,201,920**	TRUE
TOTAL	**$26,259,500**	**$22,648,590**	

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Imports	192,179	350,568	356,878	363,302	369,842	376,499	383,276	390,175	397,198	404,347	411,626	419,035	426,578	434,256	442,073	450,030	458,130	466,377	474,771
Exports	171,821	313,432	319,074	324,817	330,664	336,616	342,675	348,843	355,122	361,514	368,021	374,646	381,390	388,255	395,243	402,357	409,600	416,973	424,478
Ellensburg	2,386	4,353	4,432	4,511	4,593	4,675	4,759	4,845	4,932	5,021	5,111	5,203	5,297	5,392	5,489	5,588	5,689	5,791	5,896





Inputs - Constants

Base Case	
-	*Error Checks*
-	*Alerts*

	Constant	Unit	Notes
SCENARIOS			
Active scenario name	Base Case		
Scenario selector	**2**		
TIMING ASSUMPTIONS			
1st model column start date	01 Jan 15	date	
Forecast start date	2023	year	
Length of BCA period (operating)	20	years	
Months per model period	12	months	
Financial year end month number	12	month #	
Project operation start year	2025	year	
Base year	2020	year	
Discount rate (excluding CO2 emissions)	7.00%	percent	
Discount rate (for CO2 emissions)	3.00%	percent	
PROJECT ASSUMUPTIONS			
Project design life - Truck gate complex	30	years	
Project design life - Yard expansion	50	years	
Gate & Terminal Expansion			
Savings in truck waiting time	0.2500	hour / truck	
Share of export boxes that could pay two truck turns per shift - Build	2.50%	percent	
Average number of export boxes per trucker shift - No-build	1.0000	boxes / shift	
Average number of export boxes per trucker shift - No-build	2.0000	boxes / shift	
Number of hours per trucker shift	12.0000	hours / shift	
ECONOMIC COMPETITIVENESS			
Volumes			
Tons per container	14	tons / box	
TEU per box	1.8000	TEU / box	
Gate Peak Factors			
Gate peak hour	1.2500	factor	Industry standard
Gate operating hours per week	60.0000	hours	
Average annual cost of congestion per truck	6,962	US$ / truck	
Truck queuing space on terminal	100	trucks	
Truck			
Operating			
Vehicle operating cost - Truck - 2020 US$	0.9400	US$ / mile	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Truck average speed	55	miles / hour	
Truck fuel efficiency - 2019 US$	7	miles / gal	https://truckingresearch.org/wp-content/uploads/2020/11/ATRI-Operational-Cost-of-Trucking-2020-FINAL.pdf
Travel time			
Average vehicle occupancy (AVO) - Trucks	1.0000	persons	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Vehicle travel time savings - Truck operator - 2020 US$	32.0000	US$ / hr	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Maintenance			
Pavement repair cost - Truck - 2020 US$	0.4152	US$ / mile	https://www.fhwa.dot.gov/policy/hcas/addendum.cfm
Congestion			

Mgmt.	Base Case	Upside	Downside	Scenario 5
1	**2**	**3**	**4**	**5**

Inputs - Constants

Base Case	
-	*Error Checks*
-	*Alerts*

	Constant	Unit	Notes
Congestion cost - Truck (urban) - 2020 US$	0.3100	US$ / mile	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Congestion cost - Truck (rural) - 2020 US$	0.0670	US$ / mile	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Noise			
Noise pollution cost - Truck (urban) - 2020 US$	0.0393	US$ / mile	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Noise pollution cost - Truck (rural) - 2020 US$	0.0033	US$ / mile	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Wait time			
Fuel consumption costs of truck during wait time - Idling	0.2500	US$ / hour	PowerPoint Presentation (phillipsandtemro.com)
Truck fuel efficiency - Idling	1.0000	gal / hour	Furthering Your Fuel Economy (truckstop.com)
Truck speed during idle (assumed)	5	miles / hour	
Terminal Tractors			
Annual fuel consumption per unit - Diesel	6,240	gallons	
Price of diesel fuel	5	US$ / gal	
Energy in a gallon diesel	137,381	BTU / gal	Energy units and calculators explained - U.S. Energy Information Administration (EIA)
Diesel engine efficiency factor	0.3910	factor	Heavy-duty vehicle diesel engine efficiency evaluation and energy audit (theicct.org)
Electric drivetrain efficiency factor	0.8000	factor	Where the Energy Goes: Electric Cars (fueleconomy.gov)
SCL electricity rate	0.0930	US$ / kWh	SCL Website
SAFETY BENEFITS			
Highway			
Highway Split			
Urban share of impacted highway	100.00%	share	Urban Percentage of the Population for States, Historical | Iowa Community Indicators Program (iastate.edu)
Rural share of impacted highway	-	share	Urban Percentage of the Population for States, Historical | Iowa Community Indicators Program (iastate.edu)
Property Damage Only (PDO)			
PDO rate per VMT - Vehicle	141	incident / 100 million VMT	https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812806
Property damage only (PDO) crash monetized value - 2020 US$	4,600	US$ / crash	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Injuries			
Injury rate per VMT - Vehicle	85	person / 100 million VMT	https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812806
Unknown severity injury monetized value - 2020 US$	210,300	US$ / injury	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Fatality			
Fatality per VMT - Vehicle	1.1600	person / 100 million VMT	https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812806
Fatal crash monitized value - 2020 US$	12,837,400	US$ / crash	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
Fatality monitized value - 2020 US$	11,600,000	US$ / fatality	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)
ENVIRONMENTAL SUSTAINABILITY			
CO2 emissions per gallon of diesel	10,180	gram / gal	https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
NON CHANGEABLE MODEL TECHNICAL INPUTS			
Grams per metric ton	1,000,000	gram / metric ton	
Units in thousand	1,000	units / 000s	
Weeks per year	52	weeks / year	
Hours per day	24	hours / day	
kWh per BTU	0.0003	kWh / BTU	

Input - Time Series

		Base Case												
Model Period Ending		-	*Error Checks*			**31 Dec 15**	**31 Dec 16**	**31 Dec 17**	**31 Dec 18**	**31 Dec 19**	**31 Dec 20**	**31 Dec 21**	**31 Dec 22**	**31 Dec 23**
Pre-forecast vs Forecast		-	*Alerts*			Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Forecast
Financial Year Ending						2015	2016	2017	2018	2019	2020	2021	2022	2023
Model Column counter		**Constant**	**Unit**		**Total**	1	2	3	4	5	6	7	8	9
MACRO														
CPI rate multiplier			multiplier			0.9212	0.9304	0.9481	0.9707	0.9881	1.0000	1.0416	1.0624	1.0836
PROJECT COSTS														
Truck gate complex cost - Design costs - Constant dollars			US$		1,658,140	-	-	-	-	-	-	-	1,658,140	-
Truck gate complex cost - Construction costs - Constant dollars			US$		11,788,531	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars			US$		1,368,774	-	-	-	-	-	-	-	-	1,368,774
Yard expansion cost - Construction costs - Constant dollars			US$		7,833,146	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars			US$		11,434,875	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars			US$		3,799,076	-	-	-	-	-	-	-	-	-
VOLUMES														
Terminal 5 imports - Forecast			TEU		12,811,195	-	-	-	-	-	-	-	192,179	350,568
Terminal 5 exports - Forecast			TEU		11,454,086	-	-	-	-	-	-	-	171,821	313,432
ENVIRONEMNTAL BENEFITS														
Emissions														
Costs														
Damage costs for emissions - CO2 - 2020 US$			US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)		-	-	-	-	-	-	52	53	54
Damage costs for emissions - NOx - 2020 US$			US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)		-	-	-	-	-	-	15,600	15,800	16,000
Damage costs for emissions - PM2.5 - 2020 US$			US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)		-	-	-	-	-	-	748,600	761,600	774,700
Damage costs for emissions - SOx - 2020 US$			US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)		-	-	-	-	-	-	41,500	42,300	43,100
Highway														
NOx emission rate - Truck			gram / mile	EMFAC 2021		-	-	-	-	3.0601	2.1509	1.6344	1.3440	0.9858
PM2.5 emission rate - Truck			gram / mile	EMFAC 2021		-	-	-	-	0.0608	0.0412	0.0310	0.0252	0.0239
SOx emission rate - Truck			gram / mile	EMFAC 2021		-	-	-	-	0.0140	0.0139	0.0138	0.0137	0.0136

Input - Time Series

Model Period Ending	31 Dec 24	31 Dec 25	31 Dec 26	31 Dec 27	31 Dec 28	31 Dec 29	31 Dec 30	31 Dec 31	31 Dec 32	31 Dec 33	31 Dec 34	31 Dec 35	31 Dec 36	31 Dec 37	31 Dec 38
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Financial Year Ending	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Model Column counter	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
MACRO															
CPI rate multiplier	1.1053	1.1274	1.1500	1.1730	1.1964	1.2204	1.2448	1.2697	1.2950	1.3209	1.3474	1.3743	1.4018	1.4298	1.4584
PROJECT COSTS															
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	11,788,531	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	7,833,146	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES															
Terminal 5 imports - Forecast	356,878	363,302	369,842	376,499	383,276	390,175	397,198	404,347	411,626	419,035	426,578	434,256	442,073	450,030	458,130
Terminal 5 exports - Forecast	319,074	324,817	330,664	336,616	342,675	348,843	355,122	361,514	368,021	374,646	381,390	388,255	395,243	402,357	409,600
ENVIRONEMNTAL BENEFITS															
Emissions															
Costs															
Damage costs for emissions - CO2 - 2020 US$	55	56	57	58	60	61	62	63	64	65	66	67	68	69	70
Damage costs for emissions - NOx - 2020 US$	16,200	16,500	16,800	17,100	17,400	17,700	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	788,100	801,700	814,500	827,400	840,600	854,000	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	44,000	44,900	45,700	46,500	47,300	48,200	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway															
NOx emission rate - Truck	0.9332	0.8935	0.8640	0.8427	0.8270	0.8155	0.8067	0.8000	0.7947	0.7907	0.7875	0.7851	0.7830	0.7813	0.7796
PM2.5 emission rate - Truck	0.0234	0.0228	0.0225	0.0223	0.0221	0.0220	0.0219	0.0218	0.0217	0.0216	0.0215	0.0215	0.0214	0.0214	0.0213
SOx emission rate - Truck	0.0134	0.0132	0.0129	0.0127	0.0124	0.0121	0.0119	0.0116	0.0114	0.0113	0.0111	0.0110	0.0110	0.0109	0.0109

Input - Time Series

Model Period Ending	31 Dec 39	31 Dec 40	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Model Column counter	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
MACRO															
CPI rate multiplier	1.4876	1.5174	1.5477	1.5787	1.6102	1.6424	1.6753	1.7088	1.7430	1.7778	1.8134	1.8496	1.8866	1.9244	1.9629
PROJECT COSTS															
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES															
Terminal 5 imports - Forecast	466,377	474,771	483,317	492,017	500,873	509,889	519,067	528,410	537,922	547,604	557,461	567,495	-	-	-
Terminal 5 exports - Forecast	416,973	424,478	432,119	439,897	447,815	455,876	464,082	472,435	480,939	489,596	498,408	507,380	-	-	-
ENVIRONEMNTAL BENEFITS															
Emissions															
Costs															
Damage costs for emissions - CO2 - 2020 US$	71	72	73	75	77	78	79	80	81	82	83	85	85	85	85
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway															
NOx emission rate - Truck	0.7782	0.7769	0.7757	0.7747	0.7740	0.7735	0.7733	0.7732	0.7733	0.7735	0.7737	0.7739	0.7739	0.7739	0.7739
PM2.5 emission rate - Truck	0.0213	0.0212	0.0212	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
SOx emission rate - Truck	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107

Input - Time Series

Model Period Ending	31 Dec 54	31 Dec 55	31 Dec 56	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068
Model Column counter	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
MACRO															
CPI rate multiplier	2.0021	2.0422	2.0830	2.1247	2.1672	2.2105	2.2547	2.2998	2.3458	2.3927	2.4406	2.4894	2.5392	2.5900	2.6417
PROJECT COSTS															
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONEMNTAL BENEFITS															
Emissions															
Costs															
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway															
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107

Input - Time Series

Model Period Ending	31 Dec 69	31 Dec 70	31 Dec 71	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083
Model Column counter	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
MACRO															
CPI rate multiplier	2.6946	2.7485	2.8034	2.8595	2.9167	2.9750	3.0345	3.0952	3.1571	3.2203	3.2847	3.3504	3.4174	3.4857	3.5554
PROJECT COSTS															
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONEMNTAL BENEFITS															
Emissions															
Costs															
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway															
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107

Input - Time Series

Model Period Ending	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098
Model Column counter	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84
MACRO															
CPI rate multiplier	3.6266	3.6991	3.7731	3.8485	3.9255	4.0040	4.0841	4.1658	4.2491	4.3341	4.4208	4.5092	4.5993	4.6913	4.7852
PROJECT COSTS															
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONEMNTAL BENEFITS															
Emissions															
Costs															
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway															
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107

Input - Time Series

Model Period Ending	31 Dec 99	31 Dec 00	31 Dec 01	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113
Model Column counter	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
MACRO															
CPI rate multiplier	4.8809	4.9785	5.0781	5.1796	5.2832	5.3889	5.4966	5.6066	5.7187	5.8331	5.9497	6.0687	6.1901	6.3139	6.4402
PROJECT COSTS															
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONEMNTAL BENEFITS															
Emissions															
Costs															
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway															
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107

Input - Time Series

Model Period Ending	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2114	2115	2116	2117	2118	2119	2120
Model Column counter	100	101	102	103	104	105	106
MACRO							
CPI rate multiplier	6.5690	6.7004	6.8344	6.9711	7.1105	7.2527	7.3978
PROJECT COSTS							
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166
VOLUMES							
Terminal 5 imports - Forecast	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-
ENVIRONEMNTAL BENEFITS							
Emissions							
Costs							
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Highway							
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107

Time and Escalation

		Base Case																						
Model Period Ending		-	*Error Checks*		**31 Dec 15**	**31 Dec 16**	**31 Dec 17**	**31 Dec 18**	**31 Dec 19**	**31 Dec 20**	**31 Dec 21**	**31 Dec 22**	**31 Dec 23**	**31 Dec 24**	**31 Dec 25**	**31 Dec 26**	**31 Dec 27**	**31 Dec 28**	**31 Dec 29**	**31 Dec 30**	**31 Dec 31**	**31 Dec 32**	**31 Dec 33**	**31 Dec 34**
Pre-forecast vs Forecast		-	*Alerts*		Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Financial Year Ending					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Model Column counter	**Constant**	**Unit**	**Total**		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TIME RULER																								
Model column counter		counter			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
First model column flag		flag			1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st model column start date	01 Jan 15	date																						
Months per model period	12	months																						
First model column flag	-	flag	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Model period beginning		date			01 Jan 15	01 Jan 16	01 Jan 17	01 Jan 18	01 Jan 19	01 Jan 20	01 Jan 21	01 Jan 22	01 Jan 23	01 Jan 24	01 Jan 25	01 Jan 26	01 Jan 27	01 Jan 28	01 Jan 29	01 Jan 30	01 Jan 31	01 Jan 32	01 Jan 33	01 Jan 34
Months per model period	12	months																						
Model period beginning	-	date	-	-	01 Jan 15	01 Jan 16	01 Jan 17	01 Jan 18	01 Jan 19	01 Jan 20	01 Jan 21	01 Jan 22	01 Jan 23	01 Jan 24	01 Jan 25	01 Jan 26	01 Jan 27	01 Jan 28	01 Jan 29	01 Jan 30	01 Jan 31	01 Jan 32	01 Jan 33	01 Jan 34
Model period ending		date			31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22	31 Dec 23	31 Dec 24	31 Dec 25	31 Dec 26	31 Dec 27	31 Dec 28	31 Dec 29	31 Dec 30	31 Dec 31	31 Dec 32	31 Dec 33	31 Dec 34
1st model column start date	01 Jan 15	date																						
First modeling column financial year	2015	year																						
First modeling column financial year	2015	year																						
Financial year end month number	12	month #																						
Model period ending	-	date	-	-	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22	31 Dec 23	31 Dec 24	31 Dec 25	31 Dec 26	31 Dec 27	31 Dec 28	31 Dec 29	31 Dec 30	31 Dec 31	31 Dec 32	31 Dec 33	31 Dec 34
First model column flag	-	flag	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending		year			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FLAGS AND ESCALATIONS																								
Timing Flags																								
Forecast start date	2023	year																						
Project operation start year	2025	year																						
Length of BCA period (operating)	20	years																						
Length of forecast period	21	year #																						
Forecast start date	2023	year																						
Length of forecast period	21	year #																						
Last forecast date	2044	date																						
Last forecast date	2044	date																						
Forecast start date	2023	year																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Forecast period flag		flag	22		-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1
Forecast start date	2023	year																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Pre-forecast flag		flag	8		1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	flag	22	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1
Pre-forecast flag	-	flag	8	-	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast vs forecast		timeline label			Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Forecast start date	2023	year																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
First forecast period flag		flag	1		-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Last forecast date	2044	date																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Last forecast period flag		flag	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year	2025	year																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Forecast period flag	-	flag	22	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1
Operating period flag		flag	20		-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1
Project operation start year	2025	year																						
Project design life - Truck gate complex	30	years																						
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Post analysis period remaining service life flag - Gate complex		flag	10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year	2025	year																						
Project design life - Yard expansion	50	years																						
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Post analysis period remaining service life flag - Yard expasnion		flag	30		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escalations																								
Base year	2020	year																						
Discount rate (excluding CO2 emissions)	7.00%	percent																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Discount rate multiplier - 7 percent		factor			0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785
Base year	2020	year																						
Discount rate (for CO2 emissions)	3.00%	percent																						
Financial year ending	-	year	-	-	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Discount rate multiplier - 3 percent		factor			0.8626	0.8885	0.9151	0.9426	0.9709	1.0000	1.0300	1.0609	1.0927	1.1255	1.1593	1.1941	1.2299	1.2668	1.3048	1.3439	1.3842	1.4258	1.4685	1.5126

Time and Escalation

Model Period Ending	31 Dec 35	31 Dec 36	31 Dec 37	31 Dec 38	31 Dec 39	31 Dec 40	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Model Column counter	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
TIME RULER																						
Model column counter	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st model column start date																						
Months per model period																						
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Model period beginning	01 Jan 35	01 Jan 36	01 Jan 37	01 Jan 38	01 Jan 39	01 Jan 40	01 Jan 41	01 Jan 42	01 Jan 43	01 Jan 44	01 Jan 45	01 Jan 46	01 Jan 47	01 Jan 48	01 Jan 49	01 Jan 50	01 Jan 51	01 Jan 52	01 Jan 53	01 Jan 54	01 Jan 55	01 Jan 56
Months per model period																						
Model period beginning	01 Jan 35	01 Jan 36	01 Jan 37	01 Jan 38	01 Jan 39	01 Jan 40	01 Jan 41	01 Jan 42	01 Jan 43	01 Jan 44	01 Jan 45	01 Jan 46	01 Jan 47	01 Jan 48	01 Jan 49	01 Jan 50	01 Jan 51	01 Jan 52	01 Jan 53	01 Jan 54	01 Jan 55	01 Jan 56
Model period ending	31 Dec 35	31 Dec 36	31 Dec 37	31 Dec 38	31 Dec 39	31 Dec 40	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56
1st model column start date																						
First modeling column financial year																						
First modeling column financial year																						
Financial year end month number																						
Model period ending	31 Dec 35	31 Dec 36	31 Dec 37	31 Dec 38	31 Dec 39	31 Dec 40	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
FLAGS AND ESCALATIONS																						
Timing Flags																						
Forecast start date																						
Project operation start year																						
Length of BCA period (operating)																						
Length of forecast period																						
Forecast start date																						
Length of forecast period																						
Last forecast date																						
Last forecast date																						
Forecast start date																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Forecast period flag	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Forecast start date																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast vs forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Forecast start date																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
First forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast date																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Last forecast period flag	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Forecast period flag	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Project design life - Truck gate complex																						
Operating period flag	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Post analysis period remaining service life flag - Gate complex	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-
Project operation start year																						
Project design life - Yard expansion																						
Operating period flag	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Post analysis period remaining service life flag - Yard expasnion	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1
Escalations																						
Base year																						
Discount rate (excluding CO2 emissions)																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Discount rate multiplier - 7 percent	2.7590	2.9522	3.1588	3.3799	3.6165	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239
Base year																						
Discount rate (for CO2 emissions)																						
Financial year ending	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Discount rate multiplier - 3 percent	1.5580	1.6047	1.6528	1.7024	1.7535	1.8061	1.8603	1.9161	1.9736	2.0328	2.0938	2.1566	2.2213	2.2879	2.3566	2.4273	2.5001	2.5751	2.6523	2.7319	2.8139	2.8983

Time and Escalation

Model Period Ending	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Model Column counter	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
TIME RULER																						
Model column counter	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st model column start date																						
Months per model period																						
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Model period beginning	01 Jan 57	01 Jan 58	01 Jan 59	01 Jan 60	01 Jan 61	01 Jan 62	01 Jan 63	01 Jan 64	01 Jan 65	01 Jan 66	01 Jan 67	01 Jan 68	01 Jan 69	01 Jan 70	01 Jan 71	01 Jan 72	01 Jan 73	01 Jan 74	01 Jan 75	01 Jan 76	01 Jan 77	01 Jan 78
Months per model period																						
Model period beginning	01 Jan 57	01 Jan 58	01 Jan 59	01 Jan 60	01 Jan 61	01 Jan 62	01 Jan 63	01 Jan 64	01 Jan 65	01 Jan 66	01 Jan 67	01 Jan 68	01 Jan 69	01 Jan 70	01 Jan 71	01 Jan 72	01 Jan 73	01 Jan 74	01 Jan 75	01 Jan 76	01 Jan 77	01 Jan 78
Model period ending	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78
1st model column start date																						
First modeling column financial year																						
First modeling column financial year																						
Financial year end month number																						
Model period ending	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
FLAGS AND ESCALATIONS																						
Timing Flags																						
Forecast start date																						
Project operation start year																						
Length of BCA period (operating)																						
Length of forecast period																						
Forecast start date																						
Length of forecast period																						
Last forecast date																						
Last forecast date																						
Forecast start date																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast start date																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast vs forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Forecast start date																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
First forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast date																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Project design life - Truck gate complex																						
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Post analysis period remaining service life flag - Gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Project design life - Yard expansion																						
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Post analysis period remaining service life flag - Yard expasnion	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-
Escalations																						
Base year																						
Discount rate (excluding CO2 emissions)																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Discount rate multiplier - 7 percent	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127
Base year																						
Discount rate (for CO2 emissions)																						
Financial year ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078
Discount rate multiplier - 3 percent	2.9852	3.0748	3.1670	3.2620	3.3599	3.4607	3.5645	3.6715	3.7816	3.8950	4.0119	4.1323	4.2562	4.3839	4.5154	4.6509	4.7904	4.9341	5.0821	5.2346	5.3917	5.5534

Time and Escalation

Model Period Ending	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Model Column counter	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
TIME RULER																						
Model column counter	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st model column start date																						
Months per model period																						
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Model period beginning	01 Jan 79	01 Jan 80	01 Jan 81	01 Jan 82	01 Jan 83	01 Jan 84	01 Jan 85	01 Jan 86	01 Jan 87	01 Jan 88	01 Jan 89	01 Jan 90	01 Jan 91	01 Jan 92	01 Jan 93	01 Jan 94	01 Jan 95	01 Jan 96	01 Jan 97	01 Jan 98	01 Jan 99	01 Jan 00
Months per model period																						
Model period beginning	01 Jan 79	01 Jan 80	01 Jan 81	01 Jan 82	01 Jan 83	01 Jan 84	01 Jan 85	01 Jan 86	01 Jan 87	01 Jan 88	01 Jan 89	01 Jan 90	01 Jan 91	01 Jan 92	01 Jan 93	01 Jan 94	01 Jan 95	01 Jan 96	01 Jan 97	01 Jan 98	01 Jan 99	01 Jan 00
Model period ending	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00
1st model column start date																						
First modeling column financial year																						
First modeling column financial year																						
Financial year end month number																						
Model period ending	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
FLAGS AND ESCALATIONS																						
Timing Flags																						
Forecast start date																						
Project operation start year																						
Length of BCA period (operating)																						
Length of forecast period																						
Forecast start date																						
Length of forecast period																						
Last forecast date																						
Last forecast date																						
Forecast start date																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast start date																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast vs forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Forecast start date																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
First forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast date																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Project design life - Truck gate complex																						
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Post analysis period remaining service life flag - Gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																						
Project design life - Yard expansion																						
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Post analysis period remaining service life flag - Yard expasnion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escalations																						
Base year																						
Discount rate (excluding CO2 emissions)																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Discount rate multiplier - 7 percent	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344
Base year																						
Discount rate (for CO2 emissions)																						
Financial year ending	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Discount rate multiplier - 3 percent	5.7200	5.8916	6.0684	6.2504	6.4379	6.6311	6.8300	7.0349	7.2459	7.4633	7.6872	7.9178	8.1554	8.4000	8.6520	8.9116	9.1789	9.4543	9.7379	10.0301	10.3310	10.6409

Time and Escalation

Model Period Ending	31 Dec 01	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Model Column counter	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106
TIME RULER																				
Model column counter	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st model column start date																				
Months per model period																				
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Model period beginning	01 Jan 01	01 Jan 02	01 Jan 03	01 Jan 04	01 Jan 05	01 Jan 06	01 Jan 07	01 Jan 08	01 Jan 09	01 Jan 10	01 Jan 11	01 Jan 12	01 Jan 13	01 Jan 14	01 Jan 15	01 Jan 16	01 Jan 17	01 Jan 18	01 Jan 19	01 Jan 20
Months per model period																				
Model period beginning	01 Jan 01	01 Jan 02	01 Jan 03	01 Jan 04	01 Jan 05	01 Jan 06	01 Jan 07	01 Jan 08	01 Jan 09	01 Jan 10	01 Jan 11	01 Jan 12	01 Jan 13	01 Jan 14	01 Jan 15	01 Jan 16	01 Jan 17	01 Jan 18	01 Jan 19	01 Jan 20
Model period ending	31 Dec 01	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
1st model column start date																				
First modeling column financial year																				
First modeling column financial year																				
Financial year end month number																				
Model period ending	31 Dec 01	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
First model column flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
FLAGS AND ESCALATIONS																				
Timing Flags																				
Forecast start date																				
Project operation start year																				
Length of BCA period (operating)																				
Length of forecast period																				
Forecast start date																				
Length of forecast period																				
Last forecast date																				
Last forecast date																				
Forecast start date																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast start date																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-forecast vs forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Forecast start date																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
First forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast date																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																				
Project design life - Truck gate complex																				
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Post analysis period remaining service life flag - Gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project operation start year																				
Project design life - Yard expansion																				
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Post analysis period remaining service life flag - Yard expasnion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escalations																				
Base year																				
Discount rate (excluding CO2 emissions)																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Discount rate multiplier - 7 percent	239.9308	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Base year																				
Discount rate (for CO2 emissions)																				
Financial year ending	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Discount rate multiplier - 3 percent	10.9601	11.2889	11.6276	11.9764	12.3357	12.7058	13.0870	13.4796	13.8839	14.3005	14.7295	15.1714	15.6265	16.0953	16.5782	17.0755	17.5878	18.1154	18.6589	19.2186

Volume

		Base Case																	
Model Period Ending		-	*Error Checks*			**31 Dec 15**	**31 Dec 16**	**31 Dec 17**	**31 Dec 18**	**31 Dec 19**	**31 Dec 20**	**31 Dec 21**	**31 Dec 22**	**31 Dec 23**	**31 Dec 24**	**31 Dec 25**	**31 Dec 26**
Pre-forecast vs Forecast		-	*Alerts*			Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Forecast	Forecast	Forecast	Forecast
Financial Year Ending						2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Model Column counter		**Constant**	**Unit**	**Total**		1	2	3	4	5	6	7	8	9	10	11	12
VOLUMES																	
TEU per box		2	TEU / box														
Terminal 5 exports - Forecast		-	TEU	11,454,086	-	-	-	-	-	-	-	-	171,821	313,432	319,074	324,817	330,664
Forecast period flag		-	flag	22	-	-	-	-	-	-	-	-	1	1	1	1	1
Terminal 5 exports - Forecast			boxes	4,745,137		-	-	-	-	-	-	-	95,456	174,129	177,263	180,454	183,702
TEU per box		2	TEU / box														
Terminal 5 imports - Forecast		-	TEU	12,811,195	-	-	-	-	-	-	-	-	192,179	350,568	356,878	363,302	369,842
Forecast period flag		-	flag	22	-	-	-	-	-	-	-	-	1	1	1	1	1
Terminal 5 imports - Forecast			boxes	5,307,353		-	-	-	-	-	-	-	106,766	194,760	198,266	201,835	205,468
REDUCTION IN HIGHWAY MILES																	
Share of export boxes that could pay two truck turns per shift - Build		2.50%	percent														
Terminal 5 exports - Forecast		-	boxes	4,745,137	-	-	-	-	-	-	-	-	95,456	174,129	177,263	180,454	183,702
Terminal 5 exports - Two truck turn market			boxes			-	-	-	-	-	-	-	2,386	4,353	4,432	4,511	4,593
Average number of export boxes per trucker shift - No-build		1.0000	boxes / shift														
Terminal 5 exports - Two truck turn market		-	boxes	-	-	-	-	-	-	-	-	-	2,386	4,353	4,432	4,511	4,593
Terminal 5 export truck shifts - No-build			shifts	118,628		-	-	-	-	-	-	-	2,386	4,353	4,432	4,511	4,593
Average number of export boxes per trucker shift - No-build		2.0000	boxes / shift														
Terminal 5 exports - Two truck turn market		-	boxes	-	-	-	-	-	-	-	-	-	2,386	4,353	4,432	4,511	4,593
Terminal 5 export truck shifts - Build			shifts	59,314		-	-	-	-	-	-	-	1,193	2,177	2,216	2,256	2,296
Terminal 5 export truck shifts - No-build		-	shifts	118,628	-	-	-	-	-	-	-	-	2,386	4,353	4,432	4,511	4,593
Terminal 5 export truck shifts - Build		-	shifts	59,314	-	-	-	-	-	-	-	-	1,193	2,177	2,216	2,256	2,296
Reduction in number of truck shifts			shifts	59,314		-	-	-	-	-	-	-	1,193	2,177	2,216	2,256	2,296
Number of hours per trucker shift		12.0000	hours / shift														
Reduction in number of truck shifts		-	shifts	59,314	-	-	-	-	-	-	-	-	1,193	2,177	2,216	2,256	2,296
Operating period flag		-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1
Reduction in trucker shifts - Build			hours	644,743		-	-	-	-	-	-	-	-	-	-	27,068	27,555
REDUCTION IN TRUCK QUEUING TIME																	
Savings in truck waiting time		0.3	hour / truck														
Terminal 5 exports - Forecast		-	boxes	4,745,137	-	-	-	-	-	-	-	-	95,456	174,129	177,263	180,454	183,702
Average savings in truck waiting time at terminal			hours	1,186,284		-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926
REDUCTION IN TRUCK OFF TERMINAL CONGESTION																	
Terminal 5 exports - Forecast		-	boxes	4,745,137	-	-	-	-	-	-	-	-	95,456	174,129	177,263	180,454	183,702
Terminal 5 imports - Forecast		-	boxes	5,307,353	-	-	-	-	-	-	-	-	106,766	194,760	198,266	201,835	205,468
Terminal 5 volumes - Forecast			boxes	10,052,490		-	-	-	-	-	-	-	202,222	368,889	375,529	382,288	389,170
Weeks per year		52	weeks / year														
Terminal 5 volumes - Forecast		-	boxes	10,052,490	-	-	-	-	-	-	-	-	202,222	368,889	375,529	382,288	389,170
Terminal 5 volumes - Average weekly gate boxes			boxes	193,317		-	-	-	-	-	-	-	3,889	7,094	7,222	7,352	7,484
Gate peak hour		1.2500	factor														
Gate operating hours per week		60.0000	hours														
Terminal 5 volumes - Average weekly gate boxes		-	boxes	193,317	-	-	-	-	-	-	-	-	3,889	7,094	7,222	7,352	7,484
Terminal 5 volumes - Daily peak hour gate boxes			boxes	4,027		-	-	-	-	-	-	-	81	148	150	153	156
Truck queuing space on terminal		100	trucks														
Terminal 5 volumes - Daily peak hour gate boxes		-	boxes	4,027	-	-	-	-	-	-	-	-	81	148	150	153	156
Off-terminal truck queue volumes - Average daily			trucks	1,709		-	-	-	-	-	-	-	-	48	50	53	56

Volume

Model Period Ending	31 Dec 27	31 Dec 28	31 Dec 29	31 Dec 30	31 Dec 31	31 Dec 32	31 Dec 33	31 Dec 34	31 Dec 35	31 Dec 36	31 Dec 37	31 Dec 38	31 Dec 39	31 Dec 40	31 Dec 41
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Financial Year Ending	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Model Column counter	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
VOLUMES															
TEU per box															
Terminal 5 exports - Forecast	336,616	342,675	348,843	355,122	361,514	368,021	374,646	381,390	388,255	395,243	402,357	409,600	416,973	424,478	432,119
Forecast period flag	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terminal 5 exports - Forecast	187,009	190,375	193,802	197,290	200,841	204,456	208,137	211,883	215,697	219,580	223,532	227,556	231,652	235,821	240,066
TEU per box															
Terminal 5 imports - Forecast	376,499	383,276	390,175	397,198	404,347	411,626	419,035	426,578	434,256	442,073	450,030	458,130	466,377	474,771	483,317
Forecast period flag	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terminal 5 imports - Forecast	209,166	212,931	216,764	220,665	224,637	228,681	232,797	236,988	241,253	245,596	250,017	254,517	259,098	263,762	268,510
REDUCTION IN HIGHWAY MILES															
Share of export boxes that could pay two truck turns per shift - Build															
Terminal 5 exports - Forecast	187,009	190,375	193,802	197,290	200,841	204,456	208,137	211,883	215,697	219,580	223,532	227,556	231,652	235,821	240,066
Terminal 5 exports - Two truck turn market	4,675	4,759	4,845	4,932	5,021	5,111	5,203	5,297	5,392	5,489	5,588	5,689	5,791	5,896	6,002
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	4,675	4,759	4,845	4,932	5,021	5,111	5,203	5,297	5,392	5,489	5,588	5,689	5,791	5,896	6,002
Terminal 5 export truck shifts - No-build	4,675	4,759	4,845	4,932	5,021	5,111	5,203	5,297	5,392	5,489	5,588	5,689	5,791	5,896	6,002
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	4,675	4,759	4,845	4,932	5,021	5,111	5,203	5,297	5,392	5,489	5,588	5,689	5,791	5,896	6,002
Terminal 5 export truck shifts - Build	2,338	2,380	2,423	2,466	2,511	2,556	2,602	2,649	2,696	2,745	2,794	2,844	2,896	2,948	3,001
Terminal 5 export truck shifts - No-build	4,675	4,759	4,845	4,932	5,021	5,111	5,203	5,297	5,392	5,489	5,588	5,689	5,791	5,896	6,002
Terminal 5 export truck shifts - Build	2,338	2,380	2,423	2,466	2,511	2,556	2,602	2,649	2,696	2,745	2,794	2,844	2,896	2,948	3,001
Reduction in number of truck shifts	2,338	2,380	2,423	2,466	2,511	2,556	2,602	2,649	2,696	2,745	2,794	2,844	2,896	2,948	3,001
Number of hours per trucker shift															
Reduction in number of truck shifts	2,338	2,380	2,423	2,466	2,511	2,556	2,602	2,649	2,696	2,745	2,794	2,844	2,896	2,948	3,001
Operating period flag	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reduction in trucker shifts - Build	28,051	28,556	29,070	29,594	30,126	30,668	31,220	31,782	32,355	32,937	33,530	34,133	34,748	35,373	36,010
REDUCTION IN TRUCK QUEUING TIME															
Savings in truck waiting time															
Terminal 5 exports - Forecast	187,009	190,375	193,802	197,290	200,841	204,456	208,137	211,883	215,697	219,580	223,532	227,556	231,652	235,821	240,066
Average savings in truck waiting time at terminal	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913	58,955	60,017
REDUCTION IN TRUCK OFF TERMINAL CONGESTION															
Terminal 5 exports - Forecast	187,009	190,375	193,802	197,290	200,841	204,456	208,137	211,883	215,697	219,580	223,532	227,556	231,652	235,821	240,066
Terminal 5 imports - Forecast	209,166	212,931	216,764	220,665	224,637	228,681	232,797	236,988	241,253	245,596	250,017	254,517	259,098	263,762	268,510
Terminal 5 volumes - Forecast	396,175	403,306	410,565	417,955	425,479	433,137	440,934	448,871	456,950	465,175	473,549	482,072	490,750	499,583	508,576
Weeks per year															
Terminal 5 volumes - Forecast	396,175	403,306	410,565	417,955	425,479	433,137	440,934	448,871	456,950	465,175	473,549	482,072	490,750	499,583	508,576
Terminal 5 volumes - Average weekly gate boxes	7,619	7,756	7,895	8,038	8,182	8,330	8,479	8,632	8,788	8,946	9,107	9,271	9,437	9,607	9,780
Gate peak hour															
Gate operating hours per week															
Terminal 5 volumes - Average weekly gate boxes	7,619	7,756	7,895	8,038	8,182	8,330	8,479	8,632	8,788	8,946	9,107	9,271	9,437	9,607	9,780
Terminal 5 volumes - Daily peak hour gate boxes	159	162	164	167	170	174	177	180	183	186	190	193	197	200	204
Truck queuing space on terminal															
Terminal 5 volumes - Daily peak hour gate boxes	159	162	164	167	170	174	177	180	183	186	190	193	197	200	204
Off-terminal truck queue volumes - Average daily	59	62	64	67	70	74	77	80	83	86	90	93	97	100	100

Volume

Model Period Ending	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Model Column counter	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
VOLUMES															
TEU per box															
Terminal 5 exports - Forecast	439,897	447,815	455,876	464,082	472,435	480,939	489,596	498,408	507,380	-	-	-	-	-	-
Forecast period flag	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	244,387	248,786	253,264	-	-	-	-	-	-	-	-	-	-	-	-
TEU per box															
Terminal 5 imports - Forecast	492,017	500,873	509,889	519,067	528,410	537,922	547,604	557,461	567,495	-	-	-	-	-	-
Forecast period flag	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	273,343	278,263	283,272	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN HIGHWAY MILES															
Share of export boxes that could pay two truck turns per shift - Build															
Terminal 5 exports - Forecast	244,387	248,786	253,264	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Two truck turn market	6,110	6,220	6,332	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	6,110	6,220	6,332	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	6,110	6,220	6,332	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	6,110	6,220	6,332	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	3,055	3,110	3,166	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	6,110	6,220	6,332	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	3,055	3,110	3,166	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in number of truck shifts	3,055	3,110	3,166	-	-	-	-	-	-	-	-	-	-	-	-
Number of hours per trucker shift															
Reduction in number of truck shifts	3,055	3,110	3,166	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in trucker shifts - Build	36,658	37,318	37,990	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK QUEUING TIME															
Savings in truck waiting time															
Terminal 5 exports - Forecast	244,387	248,786	253,264	-	-	-	-	-	-	-	-	-	-	-	-
Average savings in truck waiting time at terminal	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK OFF TERMINAL CONGESTION															
Terminal 5 exports - Forecast	244,387	248,786	253,264	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	273,343	278,263	283,272	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Forecast	517,730	527,049	536,536	-	-	-	-	-	-	-	-	-	-	-	-
Weeks per year															
Terminal 5 volumes - Forecast	517,730	527,049	536,536	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Average weekly gate boxes	9,956	10,136	10,318	-	-	-	-	-	-	-	-	-	-	-	-
Gate peak hour															
Gate operating hours per week															
Terminal 5 volumes - Average weekly gate boxes	9,956	10,136	10,318	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Daily peak hour gate boxes	207	211	215	-	-	-	-	-	-	-	-	-	-	-	-
Truck queuing space on terminal															
Terminal 5 volumes - Daily peak hour gate boxes	207	211	215	-	-	-	-	-	-	-	-	-	-	-	-
Off-terminal truck queue volumes - Average daily	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-

Volume

Model Period Ending	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071
Model Column counter	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
VOLUMES															
TEU per box															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEU per box															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN HIGHWAY MILES															
Share of export boxes that could pay two truck turns per shift - Build															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of hours per trucker shift															
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in trucker shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK QUEUING TIME															
Savings in truck waiting time															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK OFF TERMINAL CONGESTION															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weeks per year															
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gate peak hour															
Gate operating hours per week															
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck queuing space on terminal															
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-terminal truck queue volumes - Average daily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volume

Model Period Ending	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086
Model Column counter	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
VOLUMES															
TEU per box															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEU per box															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN HIGHWAY MILES															
Share of export boxes that could pay two truck turns per shift - Build															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of hours per trucker shift															
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in trucker shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK QUEUING TIME															
Savings in truck waiting time															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK OFF TERMINAL CONGESTION															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weeks per year															
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gate peak hour															
Gate operating hours per week															
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck queuing space on terminal															
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-terminal truck queue volumes - Average daily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volume

Model Period Ending	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00	31 Dec 01
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101
Model Column counter	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
VOLUMES															
TEU per box															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEU per box															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN HIGHWAY MILES															
Share of export boxes that could pay two truck turns per shift - Build															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of hours per trucker shift															
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in trucker shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK QUEUING TIME															
Savings in truck waiting time															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK OFF TERMINAL CONGESTION															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weeks per year															
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gate peak hour															
Gate operating hours per week															
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck queuing space on terminal															
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-terminal truck queue volumes - Average daily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volume

Model Period Ending	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116
Model Column counter	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102
VOLUMES															
TEU per box															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEU per box															
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN HIGHWAY MILES															
Share of export boxes that could pay two truck turns per shift - Build															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average number of export boxes per trucker shift - No-build															
Terminal 5 exports - Two truck turn market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of hours per trucker shift															
Reduction in number of truck shifts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in trucker shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK QUEUING TIME															
Savings in truck waiting time															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REDUCTION IN TRUCK OFF TERMINAL CONGESTION															
Terminal 5 exports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weeks per year															
Terminal 5 volumes - Forecast	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gate peak hour															
Gate operating hours per week															
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck queuing space on terminal															
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-terminal truck queue volumes - Average daily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volume

Model Period Ending	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2117	2118	2119	2120
Model Column counter	103	104	105	106
VOLUMES				
TEU per box				
Terminal 5 exports - Forecast	-	-	-	-
Forecast period flag	-	-	-	-
Terminal 5 exports - Forecast	-	-	-	-
TEU per box				
Terminal 5 imports - Forecast	-	-	-	-
Forecast period flag	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-
REDUCTION IN HIGHWAY MILES				
Share of export boxes that could pay two truck turns per shift - Build				
Terminal 5 exports - Forecast	-	-	-	-
Terminal 5 exports - Two truck turn market	-	-	-	-
Average number of export boxes per trucker shift - No-build				
Terminal 5 exports - Two truck turn market	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-
Average number of export boxes per trucker shift - No-build				
Terminal 5 exports - Two truck turn market	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-
Terminal 5 export truck shifts - No-build	-	-	-	-
Terminal 5 export truck shifts - Build	-	-	-	-
Reduction in number of truck shifts	-	-	-	-
Number of hours per trucker shift				
Reduction in number of truck shifts	-	-	-	-
Operating period flag	-	-	-	-
Reduction in trucker shifts - Build	-	-	-	-
REDUCTION IN TRUCK QUEUING TIME				
Savings in truck waiting time				
Terminal 5 exports - Forecast	-	-	-	-
Average savings in truck waiting time at terminal	-	-	-	-
REDUCTION IN TRUCK OFF TERMINAL CONGESTION				
Terminal 5 exports - Forecast	-	-	-	-
Terminal 5 imports - Forecast	-	-	-	-
Terminal 5 volumes - Forecast	-	-	-	-
Weeks per year				
Terminal 5 volumes - Forecast	-	-	-	-
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-
Gate peak hour				
Gate operating hours per week				
Terminal 5 volumes - Average weekly gate boxes	-	-	-	-
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-
Truck queuing space on terminal				
Terminal 5 volumes - Daily peak hour gate boxes	-	-	-	-
Off-terminal truck queue volumes - Average daily	-	-	-	-

Truck Queing Benefits

		Base Case																														
Model Period Ending		-	*Error Checks*		**31 Dec 15**	**31 Dec 16**	**31 Dec 17**	**31 Dec 18**	**31 Dec 19**	**31 Dec 20**	**31 Dec 21**	**31 Dec 22**	**31 Dec 23**	**31 Dec 24**	**31 Dec 25**	**31 Dec 26**	**31 Dec 27**	**31 Dec 28**	**31 Dec 29**	**31 Dec 30**	**31 Dec 31**	**31 Dec 32**	**31 Dec 33**	**31 Dec 34**	**31 Dec 35**	**31 Dec 36**	**31 Dec 37**	**31 Dec 38**	**31 Dec 39**
Pre-forecast vs Forecast		-	*Alerts*		Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Pre-forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Financial Year Ending					2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Model Column counter	**Constant**	**Unit**	**Total**		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK CONGESTION ON ROADS																																
Highway Congestion																																
Average annual cost of congestion per truck	6,962	US$ / truck																														
Off-terminal truck queue volumes - Average daily	-	trucks	1,709	-	-	-	-	-	-	-	-	-	48	50	53	56	59	62	64	67	70	74	77	80	83	86	90	93	97
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Increase in highway congestion - No-build		US$	11,214,644		-	-	-	-	-	-	-	-	-	-	370,128	389,323	408,863	428,755	449,005	469,619	490,605	511,968	533,716	555,856	578,393	601,337	624,694	648,470	672,675
Increase in highway congestion - No-build	-	US$	11,214,644	-	-	-	-	-	-	-	-	-	-	-	370,128	389,323	408,863	428,755	449,005	469,619	490,605	511,968	533,716	555,856	578,393	601,337	624,694	648,470	672,675
Discount rate multiplier - 7 percent	-	factor	-	-	0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785	2.7590	2.9522	3.1588	3.3799	3.6165
Increase in highway congestion - No-build - PV		US$	4,186,197		-	-	-	-	-	-	-	-	-	-	263,896	259,422	254,619	249,539	244,229	238,731	233,083	227,320	221,473	215,570	209,636	203,694	197,762	191,859	186,000
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK WAIT TIME REDUCTIONS																																
Reduced Truck Value of Time at Queue																																
Vehicle travel time savings - Truck operator - 2020 US$	32.0000	US$ / hr																														
Average savings in truck waiting time at terminal	-	hours	1,186,284	-	-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
Average annual savings in truck operating costs at terminal - Build		US$	37,961,095		-	-	-	-	-	-	-	763,649	1,393,031	1,418,105	1,443,631	1,469,616	1,496,070	1,522,999	1,550,413	1,578,320	1,606,730	1,635,651	1,665,093	1,695,064	1,725,576	1,756,636	1,788,255	1,820,444	1,853,212
Average annual savings in truck operating costs at terminal - Build	-	US$	37,961,095	-	-	-	-	-	-	-	-	763,649	1,393,031	1,418,105	1,443,631	1,469,616	1,496,070	1,522,999	1,550,413	1,578,320	1,606,730	1,635,651	1,665,093	1,695,064	1,725,576	1,756,636	1,788,255	1,820,444	1,853,212
Discount rate multiplier - 7 percent	-	factor	-	-	0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785	2.7590	2.9522	3.1588	3.3799	3.6165
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reduction in truck wait time costs - Build - PV		US$	13,359,762		-	-	-	-	-	-	-	-	-	-	1,029,289	979,267	931,677	886,399	843,322	802,338	763,346	726,249	690,954	657,375	625,428	595,033	566,116	538,604	512,429
Reduced Truck Value of Time from Reduced Shifts																																
Average vehicle occupancy (AVO) - Trucks	1	persons																														
Vehicle travel time savings - Truck operator - 2020 US$	32.0000	US$ / hr																														
Reduction in trucker shifts - Build	-	hours	644,743	-	-	-	-	-	-	-	-	-	-	-	27,068	27,555	28,051	28,556	29,070	29,594	30,126	30,668	31,220	31,782	32,355	32,937	33,530	34,133	34,748
Reduction in highway truck travel time costs from reduced shifts - Build		US$	20,631,786		-	-	-	-	-	-	-	-	-	-	866,179	881,770	897,642	913,799	930,248	946,992	964,038	981,391	999,056	1,017,039	1,035,345	1,053,982	1,072,953	1,092,266	1,111,927
Reduction in highway truck travel time costs from reduced shifts - Build	-	US$	20,631,786	-	-	-	-	-	-	-	-	-	-	-	866,179	881,770	897,642	913,799	930,248	946,992	964,038	981,391	999,056	1,017,039	1,035,345	1,053,982	1,072,953	1,092,266	1,111,927
Discount rate multiplier - 7 percent	-	factor	-	-	0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785	2.7590	2.9522	3.1588	3.3799	3.6165
Reduction in highway truck travel time costs from reduced shifts - Build - PV		US$	8,015,857		-	-	-	-	-	-	-	-	-	-	617,573	587,560	559,006	531,839	505,993	481,403	458,007	435,749	414,573	394,425	375,257	357,020	339,670	323,162	307,457
Total																																
Reduction in truck wait time costs - Build - PV	-	US$	13,359,762	-	-	-	-	-	-	-	-	-	-	-	1,029,289	979,267	931,677	886,399	843,322	802,338	763,346	726,249	690,954	657,375	625,428	595,033	566,116	538,604	512,429
Reduction in highway truck travel time costs from reduced shifts - Build - PV	-	US$	8,015,857	-	-	-	-	-	-	-	-	-	-	-	617,573	587,560	559,006	531,839	505,993	481,403	458,007	435,749	414,573	394,425	375,257	357,020	339,670	323,162	307,457
Economic competitive benefits - Truck travel time reduction - Build - PV		US$	21,375,620		-	-	-	-	-	-	-	-	-	-	1,646,862	1,566,828	1,490,683	1,418,239	1,349,315	1,283,741	1,221,353	1,161,998	1,105,527	1,051,800	1,000,685	952,053	905,785	861,766	819,886
ENVIRONMENTAL BENEFITS - TRUCK WAIT TIME REDUCTIONS																																
Fuel Reduction																																
Truck fuel efficiency - Idling	1.0000	gal / hour																														
Average savings in truck waiting time at terminal	-	hours	1,186,284	-	-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
Reduction in truck fuel consumption - Truck - Build		gal	1,186,284		-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
CO2 Emissions																																
Grams per metric ton	1,000,000	gram / metric ton																														
CO2 emissions per gallon of diesel	10,180	gram / gal																														
Reduction in truck fuel consumption - Truck - Build	-	gal	1,186,284	-	-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
Reduction in carbon dioxide emissions - Truck - Build		metric tons	12,076		-	-	-	-	-	-	-	243	443	451	459	468	476	485	493	502	511	520	530	539	549	559	569	579	590
Reduction in carbon dioxide emissions - Truck - Build	-	metric tons	12,076	-	-	-	-	-	-	-	-	243	443	451	459	468	476	485	493	502	511	520	530	539	549	559	569	579	590
Damage costs for emissions - CO2 - 2020 US$	-	US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)	-	-	-	-	-	-	-	52	53	54	55	56	57	58	60	61	62	63	64	65	66	67	68	69	70	71
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reduction in carbon dioxide emission costs - Truck - Build		US$	735,703		-	-	-	-	-	-	-	-	-	-	25,718	26,649	27,604	29,070	30,087	31,130	32,202	33,302	34,431	35,590	36,780	38,000	39,253	40,539	41,858
Reduction in carbon dioxide emission costs - Truck - Build	-	US$	735,703	-	-	-	-	-	-	-	-	-	-	-	25,718	26,649	27,604	29,070	30,087	31,130	32,202	33,302	34,431	35,590	36,780	38,000	39,253	40,539	41,858
Discount rate multiplier - 3 percent	-	factor	-	-	0.8626	0.8885	0.9151	0.9426	0.9709	1.0000	1.0300	1.0609	1.0927	1.1255	1.1593	1.1941	1.2299	1.2668	1.3048	1.3439	1.3842	1.4258	1.4685	1.5126	1.5580	1.6047	1.6528	1.7024	1.7535
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV		US$	470,115		-	-	-	-	-	-	-	-	-	-	22,185	22,318	22,445	22,948	23,059	23,164	23,263	23,357	23,446	23,529	23,607	23,681	23,749	23,812	23,871
NOx Emissions																																
Grams per metric ton	1,000,000	gram / metric ton																														
Truck speed during idle (assumed)	5	miles / hour																														
NOx emission rate - Truck	-	gram / mile	EMFAC 2021	-	-	-	-	-	3.0601	2.1509	1.6344	1.3440	0.9858	0.9332	0.8935	0.8640	0.8427	0.8270	0.8155	0.8067	0.8000	0.7947	0.7907	0.7875	0.7851	0.7830	0.7813	0.7796	0.7782
Average savings in truck waiting time at terminal	-	hours	1,186,284	-	-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reduction in NOx emissions - Truck - Build		metric tons	4.28		-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduction in NOx emissions - Truck - Build	-	metric tons	4	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Damage costs for emissions - NOx - 2020 US$	-	US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)	-	-	-	-	-	15,600	15,800	16,000	16,200	16,500	16,800	17,100	17,400	17,700	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Reduction in NOx emission costs - Truck - Build		US$	76,555		-	-	-	-	-	-	-	-	-	-	3,326	3,333	3,368	3,425	3,497	3,601	3,635	3,676	3,723	3,775	3,831	3,890	3,951	4,014	4,079
Reduction in NOx emission costs - Truck - Build	-	US$	76,555	-	-	-	-	-	-	-	-	-	-	-	3,326	3,333	3,368	3,425	3,497	3,601	3,635	3,676	3,723	3,775	3,831	3,890	3,951	4,014	4,079
Discount rate multiplier - 7 percent	-	factor	-	-	0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785	2.7590	2.9522	3.1588	3.3799	3.6165
Reduction in NOx emission costs - Truck - Build - PV		US$	29,905		-	-	-	-	-	-	-	-	-	-	2,371	2,221	2,098	1,993	1,902	1,831	1,727	1,632	1,545	1,464	1,389	1,318	1,251	1,188	1,128
PM2.5 Emissions																																
Grams per metric ton	1,000,000	gram / metric ton																														
Truck speed during idle (assumed)	5	miles / hour																														
PM2.5 emission rate - Truck	-	gram / mile	EMFAC 2021	-	-	-	-	-	0.0608	0.0412	0.0310	0.0252	0.0239	0.0234	0.0228	0.0225	0.0223	0.0221	0.0220	0.0219	0.0218	0.0217	0.0216	0.0215	0.0215	0.0214	0.0214	0.0213	0.0213
Average savings in truck waiting time at terminal	-	hours	1,186,284	-	-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reduction in PM2.5 emissions - Truck - Build		metric tons	0.12		-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduction in PM2.5 emissions - Truck - Build	-	metric tons	0	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Damage costs for emissions - PM2.5 - 2020 US$	-	US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)	-	-	-	-	-	-	-	-	748,600	761,600	774,700	788,100	801,700	814,500	827,400	840,600	854,000	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Reduction in PM2.5 emission costs - Truck - Build		US$	99,639		-	-	-	-	-	-	-	-	-	-	4,131	4,216	4,315	4,428	4,549	4,680	4,741	4,806	4,875	4,947	5,024	5,102	5,182	5,264	5,346
Reduction in PM2.5 emission costs - Truck - Build	-	US$	99,639	-	-	-	-	-	-	-	-	-	-	-	4,131	4,216	4,315	4,428	4,549	4,680	4,741	4,806	4,875	4,947	5,024	5,102	5,182	5,264	5,346
Discount rate multiplier - 7 percent	-	factor	-	-	0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785	2.7590	2.9522	3.1588	3.3799	3.6165
Reduction in PM2.5 emission costs - Truck - Build - PV		US$	38,768		-	-	-	-	-	-	-	-	-	-	2,945	2,809	2,687	2,577	2,475	2,379	2,253	2,134	2,023	1,919	1,821	1,728	1,640	1,557	1,478
SOx Emissions																																
Grams per metric ton	1,000,000	gram / metric ton																														
Truck speed during idle (assumed)	5	miles / hour																														
SOx emission rate - Truck	-	gram / mile	EMFAC 2021	-	-	-	-	-	0.0140	0.0139	0.0138	0.0137	0.0136	0.0134	0.0132	0.0129	0.0127	0.0124	0.0121	0.0119	0.0116	0.0114	0.0113	0.0111	0.0110	0.0110	0.0109	0.0109	0.0108
Average savings in truck waiting time at terminal	-	hours	1,186,284	-	-	-	-	-	-	-	-	23,864	43,532	44,316	45,113	45,926	46,752	47,594	48,450	49,323	50,210	51,114	52,034	52,971	53,924	54,895	55,883	56,889	57,913
Operating period flag	-	flag	20	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reduction in SOx emissions - Truck - Build		metric tons	0.06		-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduction in SOx emissions - Truck - Build	-	metric tons	0	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Damage costs for emissions - SOx - 2020 US$	-	US$ / metric ton	Benefit Cost Analysis Guidance 2022 (Revised).pdf (transportation.gov)	-	-	-	-	-	41,500	42,300	43,100	44,000	44,900	45,700	46,500	47,300	48,200	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Reduction in SOx emission costs - Truck - Build		US$	2,965		-	-	-	-	-	-	-	-	-	-	133	136	138	139	141	144	143	144	144	145	146	148	150	152	154
Reduction in SOx emission costs - Truck - Build	-	US$	2,965	-	-	-	-	-	-	-	-	-	-	-	133	136	138	139	141	144	143	144	144	145	146	148	150	152	154
Discount rate multiplier - 7 percent	-	factor	-	-	0.7130	0.7629	0.8163	0.8734	0.9346	1.0000	1.0700	1.1449	1.2250	1.3108	1.4026	1.5007	1.6058	1.7182	1.8385	1.9672	2.1049	2.2522	2.4098	2.5785	2.7590	2.9522	3.1588	3.3799	3.6165
Reduction in SOx emission costs - Truck - Build - PV		US$	1,171		-	-	-	-	-	-	-	-	-	-	95	90	86	81	77	73	68	64	60	56	53	50	47	45	43
Total																																
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	-	US$	$470,115	-	-	-	-	-	-	-	-	-	-	-	22,185	22,318	22,445	22,948	23,059	23,164	23,263	23,357	23,446	23,529	23,607	23,681	23,749	23,812	23,871
Reduction in NOx emission costs - Truck - Build - PV	-	US$	$29,905	-	-	-	-	-	-	-	-	-	-	-	2,371	2,221	2,098	1,993	1,902	1,831	1,727	1,632	1,545	1,464	1,389	1,318	1,251	1,188	1,128
Reduction in PM2.5 emission costs - Truck - Build - PV	-	US$	$38,768	-	-	-	-	-	-	-	-	-	-	-	2,945	2,809	2,687	2,577	2,475	2,379	2,253	2,134	2,023	1,919	1,821	1,728	1,640	1,557	1,478
Reduction in SOx emission costs - Truck - Build - PV	-	US$	$1,171	-	-	-	-	-	-	-	-	-	-	-	95	90	86	81	77	73	68	64	60	56	53	50	47	45	43
Environmental benefits - Truck wait time reduction - Build - PV		US$	$539,959		-	-	-	-	-	-	-	-	-	-	27,596	27,438	27,315	27,599	27,512	27,446	27,311	27,187	27,074	26,968	26,870	26,776	26,688	26,602	26,520

Truck Queing Benefits

Model Period Ending	31 Dec 40	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071
Model Column counter	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK CONGESTION ON ROADS																																
Highway Congestion																																
Average annual cost of congestion per truck																																
Off-terminal truck queue volumes - Average daily	100	100	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in highway congestion - No-build	696,247	696,247	696,247	696,247	696,247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in highway congestion - No-build	696,247	696,247	696,247	696,247	696,247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Increase in highway congestion - No-build - PV	179,923	168,153	157,152	146,871	137,263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK WAIT TIME REDUCTIONS																																
Reduced Truck Value of Time at Queue																																
Vehicle travel time savings - Truck operator - 2020 US$																																
Average savings in truck waiting time at terminal	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average annual savings in truck operating costs at terminal - Build	1,886,570	1,920,528	1,955,098	1,990,289	2,026,115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average annual savings in truck operating costs at terminal - Build	1,886,570	1,920,528	1,955,098	1,990,289	2,026,115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Operating period flag	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in truck wait time costs - Build - PV	487,526	463,833	441,291	419,845	399,442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduced Truck Value of Time from Reduced Shifts																																
Average vehicle occupancy (AVO) - Trucks																																
Vehicle travel time savings - Truck operator - 2020 US$																																
Reduction in trucker shifts - Build	35,373	36,010	36,658	37,318	37,990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build	1,131,942	1,152,317	1,173,059	1,194,174	1,215,669	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build	1,131,942	1,152,317	1,173,059	1,194,174	1,215,669	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Reduction in highway truck travel time costs from reduced shifts - Build - PV	292,515	278,300	264,775	251,907	239,665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																																
Reduction in truck wait time costs - Build - PV	487,526	463,833	441,291	419,845	399,442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build - PV	292,515	278,300	264,775	251,907	239,665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitive benefits - Truck travel time reduction - Build - PV	780,041	742,132	706,066	671,753	639,107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONMENTAL BENEFITS - TRUCK WAIT TIME REDUCTIONS																																
Fuel Reduction																																
Truck fuel efficiency - Idling																																
Average savings in truck waiting time at terminal	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in truck fuel consumption - Truck - Build	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2 Emissions																																
Grams per metric ton																																
CO2 emissions per gallon of diesel																																
Reduction in truck fuel consumption - Truck - Build	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emissions - Truck - Build	600	611	622	633	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emissions - Truck - Build	600	611	622	633	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - CO2 - 2020 US$	72	73	75	77	78	79	80	81	82	83	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Operating period flag	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emission costs - Truck - Build	43,212	44,601	46,647	48,753	50,276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emission costs - Truck - Build	43,212	44,601	46,647	48,753	50,276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 3 percent	1.8061	1.8603	1.9161	1.9736	2.0328	2.0938	2.1566	2.2213	2.2879	2.3566	2.4273	2.5001	2.5751	2.6523	2.7319	2.8139	2.8983	2.9852	3.0748	3.1670	3.2620	3.3599	3.4607	3.5645	3.6715	3.7816	3.8950	4.0119	4.1323	4.2562	4.3839	4.5154
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	23,925	23,975	24,345	24,703	24,732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NOx Emissions																																
Grams per metric ton																																
Truck speed during idle (assumed)																																
NOx emission rate - Truck	0.7769	0.7757	0.7747	0.7740	0.7735	0.7733	0.7732	0.7733	0.7735	0.7737	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
Average savings in truck waiting time at terminal	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emissions - Truck - Build	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emissions - Truck - Build	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Reduction in NOx emission costs - Truck - Build	4,145	4,213	4,284	4,357	4,432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emission costs - Truck - Build	4,145	4,213	4,284	4,357	4,432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Reduction in NOx emission costs - Truck - Build - PV	1,071	1,018	967	919	874	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM2.5 Emissions																																
Grams per metric ton																																
Truck speed during idle (assumed)																																
PM2.5 emission rate - Truck	0.0212	0.0212	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
Average savings in truck waiting time at terminal	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emissions - Truck - Build	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emissions - Truck - Build	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Reduction in PM2.5 emission costs - Truck - Build	5,430	5,515	5,603	5,695	5,791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emission costs - Truck - Build	5,430	5,515	5,603	5,695	5,791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Reduction in PM2.5 emission costs - Truck - Build - PV	1,403	1,332	1,265	1,201	1,142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOx Emissions																																
Grams per metric ton																																
Truck speed during idle (assumed)																																
SOx emission rate - Truck	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0108	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
Average savings in truck waiting time at terminal	58,955	60,017	61,097	62,197	63,316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emissions - Truck - Build	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emissions - Truck - Build	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Reduction in SOx emission costs - Truck - Build	156	159	162	164	167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emission costs - Truck - Build	156	159	162	164	167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	3.8697	4.1406	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Reduction in SOx emission costs - Truck - Build - PV	40	38	36	35	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																																
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	23,925	23,975	24,345	24,703	24,732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emission costs - Truck - Build - PV	1,071	1,018	967	919	874	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emission costs - Truck - Build - PV	1,403	1,332	1,265	1,201	1,142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emission costs - Truck - Build - PV	40	38	36	35	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental benefits - Truck wait time reduction - Build - PV	26,440	26,363	26,613	26,858	26,781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Truck Queing Benefits

Model Period Ending	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00	31 Dec 01	31 Dec 02	31 Dec 03
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103
Model Column counter	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK CONGESTION ON ROADS																																
Highway Congestion																																
Average annual cost of congestion per truck																																
Off-terminal truck queue volumes - Average daily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in highway congestion - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in highway congestion - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308	256.7260	274.6968
Increase in highway congestion - No-build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK WAIT TIME REDUCTIONS																																
Reduced Truck Value of Time at Queue																																
Vehicle travel time savings - Truck operator - 2020 US$																																
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average annual savings in truck operating costs at terminal - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average annual savings in truck operating costs at terminal - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308	256.7260	274.6968
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in truck wait time costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduced Truck Value of Time from Reduced Shifts																																
Average vehicle occupancy (AVO) - Trucks																																
Vehicle travel time savings - Truck operator - 2020 US$																																
Reduction in trucker shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308	256.7260	274.6968
Reduction in highway truck travel time costs from reduced shifts - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																																
Reduction in truck wait time costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitive benefits - Truck travel time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONMENTAL BENEFITS - TRUCK WAIT TIME REDUCTIONS																																
Fuel Reduction																																
Truck fuel efficiency - Idling																																
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in truck fuel consumption - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2 Emissions																																
Grams per metric ton																																
CO2 emissions per gallon of diesel																																
Reduction in truck fuel consumption - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 3 percent	4.6509	4.7904	4.9341	5.0821	5.2346	5.3917	5.5534	5.7200	5.8916	6.0684	6.2504	6.4379	6.6311	6.8300	7.0349	7.2459	7.4633	7.6872	7.9178	8.1554	8.4000	8.6520	8.9116	9.1789	9.4543	9.7379	10.0301	10.3310	10.6409	10.9601	11.2889	11.6276
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NOx Emissions																																
Grams per metric ton																																
Truck speed during idle (assumed)																																
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Reduction in NOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308	256.7260	274.6968
Reduction in NOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM2.5 Emissions																																
Grams per metric ton																																
Truck speed during idle (assumed)																																
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Reduction in PM2.5 emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308	256.7260	274.6968
Reduction in PM2.5 emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOx Emissions																																
Grams per metric ton																																
Truck speed during idle (assumed)																																
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Reduction in SOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308	256.7260	274.6968
Reduction in SOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																																
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental benefits - Truck wait time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Truck Queing Benefits

Model Period Ending	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Model Column counter	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK CONGESTION ON ROADS																	
Highway Congestion																	
Average annual cost of congestion per truck																	
Off-terminal truck queue volumes - Average daily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in highway congestion - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in highway congestion - No-build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Increase in highway congestion - No-build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ECONOMIC COMPETITIVENESS BENEFITS - TRUCK WAIT TIME REDUCTIONS																	
Reduced Truck Value of Time at Queue																	
Vehicle travel time savings - Truck operator - 2020 US$																	
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average annual savings in truck operating costs at terminal - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average annual savings in truck operating costs at terminal - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in truck wait time costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduced Truck Value of Time from Reduced Shifts																	
Average vehicle occupancy (AVO) - Trucks																	
Vehicle travel time savings - Truck operator - 2020 US$																	
Reduction in trucker shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Reduction in highway truck travel time costs from reduced shifts - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																	
Reduction in truck wait time costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in highway truck travel time costs from reduced shifts - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitive benefits - Truck travel time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENVIRONMENTAL BENEFITS - TRUCK WAIT TIME REDUCTIONS																	
Fuel Reduction																	
Truck fuel efficiency - Idling																	
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in truck fuel consumption - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2 Emissions																	
Grams per metric ton																	
CO2 emissions per gallon of diesel																	
Reduction in truck fuel consumption - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - CO2 - 2020 US$	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in carbon dioxide emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 3 percent	11.9764	12.3357	12.7058	13.0870	13.4796	13.8839	14.3005	14.7295	15.1714	15.6265	16.0953	16.5782	17.0755	17.5878	18.1154	18.6589	19.2186
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NOx Emissions																	
Grams per metric ton																	
Truck speed during idle (assumed)																	
NOx emission rate - Truck	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739	0.7739
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - NOx - 2020 US$	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
Reduction in NOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Reduction in NOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM2.5 Emissions																	
Grams per metric ton																	
Truck speed during idle (assumed)																	
PM2.5 emission rate - Truck	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211	0.0211
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - PM2.5 - 2020 US$	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600	867,600
Reduction in PM2.5 emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Reduction in PM2.5 emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOx Emissions																	
Grams per metric ton																	
Truck speed during idle (assumed)																	
SOx emission rate - Truck	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
Average savings in truck waiting time at terminal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emissions - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Damage costs for emissions - SOx - 2020 US$	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100	49,100
Reduction in SOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emission costs - Truck - Build	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Reduction in SOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																	
Reduction in carbon dioxide emission costs - Truck - Build - 3 percent - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in NOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in PM2.5 emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction in SOx emission costs - Truck - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental benefits - Truck wait time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Project Costs

| | | |

Project Costs

Model Period Ending	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071
Model Column counter	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
PROJECT COSTS																														
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Truck gate complex cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Truck gate complex cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Yard expansion cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Yard expansion cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total project costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAINTENANCE & OPERATING COSTS																														
Component 1																														
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operating period flag	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars - Annual average																														
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Operations and maintenance costs - Truck gate complex - Build - PV	(26,608)	(24,868)	(23,241)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 2																														
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
Operating period flag	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars - Annual average																														
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Operations and maintenance costs - Yard expansion - Build - PV	(8,840)	(8,262)	(7,721)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																														
Operations and maintenance costs - Truck gate complex - Build - PV	(26,608)	(24,868)	(23,241)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - PV	(8,840)	(8,262)	(7,721)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Build - PV	(35,448)	(33,129)	(30,962)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESIDUAL VALUE																														
Component 1																														
O&M																														
Operations and maintenance costs - Truck gate complex - Build - Constant dollars - Annual average																														
Post analysis period remaining service life flag - Gate complex	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex	-	-	-	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex	-	-	-	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Post analysis period maintenance and operating costs - Truck gate complex - PV	-	-	-	21,720	20,299	18,971	17,730	16,570	15,486	14,473	13,526	12,641	11,814	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual Value																														
Length of BCA period (operating)																														
Project design life - Truck gate complex																														
Remaining service life at end of analysis period - Truck gate complex																														
Remaining service life at end of analysis period - Truck gate complex																														
Project design life - Truck gate complex																														
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast period flag	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex	-	-	3,929,510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex	-	-	3,929,510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Residual value - Truck gate complex - PV	-	-	774,690	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex - PV	-	-	774,690	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex - PV	-	-	-	21,720	20,299	18,971	17,730	16,570	15,486	14,473	13,526	12,641	11,814	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Truck gate complex - PV	-	-	774,690	(21,720)	(20,299)	(18,971)	(17,730)	(16,570)	(15,486)	(14,473)	(13,526)	(12,641)	(11,814)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 2																														
O&M																														
Operations and maintenance costs - Yard expansion - Build - Constant dollars - Annual average																														
Post analysis period remaining service life flag - Yard expansion	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Post analysis period maintenance and operating costs - Yard expansion	-	-	-	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
Post analysis period maintenance and operating costs - Yard expansion	-	-	-	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Post analysis period maintenance and operating costs - Yard expansion - PV	-	-	-	7,216	6,744	6,303	5,891	5,505	5,145	4,808	4,494	4,200	3,925	3,668	3,428	3,204	2,994	2,799	2,616	2,444	2,284	2,135	1,995	1,865	1,743	1,629	1,522	1,423	1,330	1,243
Residual Value																														
Length of BCA period (operating)																														
Project design life - Yard expansion																														
Remaining service life at end of analysis period - Yard expansion																														
Remaining service life at end of analysis period - Yard expansion																														
Project design life - Yard expansion																														
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast period flag	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion	-	-	4,699,888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion	-	-	4,699,888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	4.4304	4.7405	5.0724	5.4274	5.8074	6.2139	6.6488	7.1143	7.6123	8.1451	8.7153	9.3253	9.9781	10.6766	11.4239	12.2236	13.0793	13.9948	14.9745	16.0227	17.1443	18.3444	19.6285	21.0025	22.4726	24.0457	25.7289	27.5299	29.4570	31.5190
Residual value - Yard expansion - PV	-	-	926,567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion - PV	-	-	926,567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion - PV	-	-	-	7,216	6,744	6,303	5,891	5,505	5,145	4,808	4,494	4,200	3,925	3,668	3,428	3,204	2,994	2,799	2,616	2,444	2,284	2,135	1,995	1,865	1,743	1,629	1,522	1,423	1,330	1,243
Residual value including future maintenance & operating costs - Yard expansion - PV	-	-	926,567	(7,216)	(6,744)	(6,303)	(5,891)	(5,505)	(5,145)	(4,808)	(4,494)	(4,200)	(3,925)	(3,668)	(3,428)	(3,204)	(2,994)	(2,799)	(2,616)	(2,444)	(2,284)	(2,135)	(1,995)	(1,865)	(1,743)	(1,629)	(1,522)	(1,423)	(1,330)	(1,243)
Total																														
Residual value including future maintenance & operating costs - Truck gate complex - PV	-	-	774,690	(21,720)	(20,299)	(18,971)	(17,730)	(16,570)	(15,486)	(14,473)	(13,526)	(12,641)	(11,814)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Yard expansion - PV	-	-	926,567	(7,216)	(6,744)	(6,303)	(5,891)	(5,505)	(5,145)	(4,808)	(4,494)	(4,200)	(3,925)	(3,668)	(3,428)	(3,204)	(2,994)	(2,799)	(2,616)	(2,444)	(2,284)	(2,135)	(1,995)	(1,865)	(1,743)	(1,629)	(1,522)	(1,423)	(1,330)	(1,243)
Residual value including future maintenance & operating costs - PV	-	-	1,701,257	(28,937)	(27,043)	(25,274)	(23,621)	(22,076)	(20,631)	(19,282)	(18,020)	(16,841)	(15,740)	(3,668)	(3,428)	(3,204)	(2,994)	(2,799)	(2,616)	(2,444)	(2,284)	(2,135)	(1,995)	(1,865)	(1,743)	(1,629)	(1,522)	(1,423)	(1,330)	(1,243)

Project Costs

Model Period Ending	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00	31 Dec 01
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101
Model Column counter	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
PROJECT COSTS																														
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Truck gate complex cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Truck gate complex cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Yard expansion cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Yard expansion cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total project costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAINTENANCE & OPERATING COSTS																														
Component 1																														
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars - Annual average																														
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Operations and maintenance costs - Truck gate complex - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 2																														
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars - Annual average																														
Operations and maintenance costs - Yard expansion - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Operations and maintenance costs - Yard expansion - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																														
Operations and maintenance costs - Truck gate complex - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESIDUAL VALUE																														
Component 1																														
O&M																														
Operations and maintenance costs - Truck gate complex - Build - Constant dollars - Annual average																														
Post analysis period remaining service life flag - Gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Post analysis period maintenance and operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual Value																														
Length of BCA period (operating)																														
Project design life - Truck gate complex																														
Remaining service life at end of analysis period - Truck gate complex																														
Remaining service life at end of analysis period - Truck gate complex																														
Project design life - Truck gate complex																														
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Residual value - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 2																														
O&M																														
Operations and maintenance costs - Yard expansion - Build - Constant dollars - Annual average																														
Post analysis period remaining service life flag - Yard expansion	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion	39,166	39,166	39,166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion	39,166	39,166	39,166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Post analysis period maintenance and operating costs - Yard expansion - PV	1,161	1,085	1,014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual Value																														
Length of BCA period (operating)																														
Project design life - Yard expansion																														
Remaining service life at end of analysis period - Yard expansion																														
Remaining service life at end of analysis period - Yard expansion																														
Project design life - Yard expansion																														
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	33.7253	36.0861	38.6122	41.3150	44.2071	47.3015	50.6127	54.1555	57.9464	62.0027	66.3429	70.9869	75.9559	81.2729	86.9620	93.0493	99.5627	106.5321	113.9894	121.9686	130.5065	139.6419	149.4168	159.8760	171.0673	183.0421	195.8550	209.5648	224.2344	239.9308
Residual value - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion - PV	1,161	1,085	1,014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Yard expansion - PV	(1,161)	(1,085)	(1,014)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																														
Residual value including future maintenance & operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Yard expansion - PV	(1,161)	(1,085)	(1,014)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - PV	(1,161)	(1,085)	(1,014)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Project Costs

Model Period Ending	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Model Column counter	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106
PROJECT COSTS																			
Truck gate complex cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Truck gate complex cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Truck gate complex cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Yard expansion cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Yard expansion cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck gate complex cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Design costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yard expansion cost - Construction costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total project costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAINTENANCE & OPERATING COSTS																			
Component 1																			
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885	117,885
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Truck gate complex - Build - Constant dollars - Annual average																			
Operations and maintenance costs - Truck gate complex - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Operations and maintenance costs - Truck gate complex - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 2																			
Operations and maintenance costs - Yard expansion - Build - Constant dollars	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166	39,166
Operating period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - Constant dollars - Annual average																			
Operations and maintenance costs - Yard expansion - Build - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Operations and maintenance costs - Yard expansion - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																			
Operations and maintenance costs - Truck gate complex - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Yard expansion - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESIDUAL VALUE																			
Component 1																			
O&M																			
Operations and maintenance costs - Truck gate complex - Build - Constant dollars - Annual average																			
Post analysis period remaining service life flag - Gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Post analysis period maintenance and operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual Value																			
Length of BCA period (operating)																			
Project design life - Truck gate complex																			
Remaining service life at end of analysis period - Truck gate complex																			
Remaining service life at end of analysis period - Truck gate complex																			
Project design life - Truck gate complex																			
Truck gate complex cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Residual value - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 2																			
O&M																			
Operations and maintenance costs - Yard expansion - Build - Constant dollars - Annual average																			
Post analysis period remaining service life flag - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Post analysis period maintenance and operating costs - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual Value																			
Length of BCA period (operating)																			
Project design life - Yard expansion																			
Remaining service life at end of analysis period - Yard expansion																			
Remaining service life at end of analysis period - Yard expansion																			
Project design life - Yard expansion																			
Yard expansion cost - Construction costs - Constant dollars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Last forecast period flag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discount rate multiplier - 7 percent	256.7260	274.6968	293.9255	314.5003	336.5154	360.0714	385.2764	412.2458	441.1030	471.9802	505.0188	540.3701	578.1960	618.6697	661.9766	708.3150	757.8970	810.9498	867.7163
Residual value - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post analysis period maintenance and operating costs - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																			
Residual value including future maintenance & operating costs - Truck gate complex - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - Yard expansion - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Benefit-Cost Analysis

| | | |

Benefit-Cost Analysis

Model Period Ending	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67	31 Dec 68	31 Dec 69
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069
Model Column counter	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
PROJECT BENEFITS																													
Increase in highway congestion - No-build - PV	168,153	157,152	146,871	137,263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitive benefits - Truck travel time reduction - Build - PV	742,132	706,066	671,753	639,107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitiveness benefits - Build - PV	910,285	863,218	818,624	776,369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental benefits - Truck wait time reduction - Build - PV	26,363	26,613	26,858	26,781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental sustainability benefits - Build - PV	26,363	26,613	26,858	26,781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitiveness benefits - Build - PV	910,285	863,218	818,624	776,369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental sustainability benefits - Build - PV	26,363	26,613	26,858	26,781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Build - PV	(37,930)	(35,448)	(33,129)	(30,962)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - PV	-	-	-	1,701,257	(28,937)	(27,043)	(25,274)	(23,621)	(22,076)	(20,631)	(19,282)	(18,020)	(16,841)	(15,740)	(3,668)	(3,428)	(3,204)	(2,994)	(2,799)	(2,616)	(2,444)	(2,284)	(2,135)	(1,995)	(1,865)	(1,743)	(1,629)	(1,522)	(1,423)
Total project benefits - No-build - PV	898,718	854,383	812,352	2,473,445	(28,937)	(27,043)	(25,274)	(23,621)	(22,076)	(20,631)	(19,282)	(18,020)	(16,841)	(15,740)	(3,668)	(3,428)	(3,204)	(2,994)	(2,799)	(2,616)	(2,444)	(2,284)	(2,135)	(1,995)	(1,865)	(1,743)	(1,629)	(1,522)	(1,423)
BENEFIT-COST RATIO																													
Economic competitiveness benefits - Build - PV																													
Environmental sustainability benefits - Build - PV																													
Operations and maintenance costs - Build - PV																													
Residual value including future maintenance & operating costs - PV																													
Total benefits																													
Total project costs - PV																													
Net present value																													
Benefit-cost ratio																													

Benefit-Cost Analysis

Model Period Ending	31 Dec 70	31 Dec 71	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95	31 Dec 96	31 Dec 97	31 Dec 98
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098
Model Column counter	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84
PROJECT BENEFITS																													
Increase in highway congestion - No-build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitive benefits - Truck travel time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitiveness benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental benefits - Truck wait time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental sustainability benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitiveness benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental sustainability benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - PV	(1,330)	(1,243)	(1,161)	(1,085)	(1,014)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total project benefits - No-build - PV	(1,330)	(1,243)	(1,161)	(1,085)	(1,014)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BENEFIT-COST RATIO																													
Economic competitiveness benefits - Build - PV																													
Environmental sustainability benefits - Build - PV																													
Operations and maintenance costs - Build - PV																													
Residual value including future maintenance & operating costs - PV																													
Total benefits																													
Total project costs - PV																													
Net present value																													
Benefit-cost ratio																													

Benefit-Cost Analysis

Model Period Ending	31 Dec 99	31 Dec 00	31 Dec 01	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Model Column counter	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106
PROJECT BENEFITS																						
Increase in highway congestion - No-build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitive benefits - Truck travel time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitiveness benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental benefits - Truck wait time reduction - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental sustainability benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Economic competitiveness benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental sustainability benefits - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations and maintenance costs - Build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residual value including future maintenance & operating costs - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total project benefits - No-build - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BENEFIT-COST RATIO																						
Economic competitiveness benefits - Build - PV																						
Environmental sustainability benefits - Build - PV																						
Operations and maintenance costs - Build - PV																						
Residual value including future maintenance & operating costs - PV																						
Total benefits																						
Total project costs - PV																						
Net present value																						
Benefit-cost ratio																						

Results Library

| | | |

94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150

Library		
A1	1	A
A2	2	A
A3	3	A
A4	4	A
A5	5	A
A6	6	A
A7	7	A
A8	8	A
A9	9	A
A10	10	A
A11	11	A
A12	12	A
A13	13	A
A14	14	A
A15	15	A
A16	16	A
A17	17	A
A18	18	A
A19	19	A
A20	20	A
A21	21	A
A22	22	A
A23	23	A
A24	24	A
A25	25	A
A26	26	A
A27	27	A
A28	28	A
A29	29	A
A30	30	A
A31	31	A
A32	32	A
A33	33	A
A34	34	A
A35	35	A
A36	36	A
A37	37	A
A38	38	A
A39	39	A
A40	40	A
A41	41	A
A42	42	A
A43	43	A
A44	44	A
A45	45	A
A46	46	A
A47	47	A
A48	48	A
A49	49	A
A50	50	A
A51	51	A
A52	52	A

A53	53	A
A54	54	A
A55	55	A
A56	56	A
A57	57	A
A58	58	A
A59	59	A
A60	60	A
A61	61	A
A62	62	A
A63	63	A
A64	64	A
A65	65	A
A66	66	A
A67	67	A
A68	68	A
A69	69	A
A70	70	A
A71	71	A
A72	72	A
A73	73	A
A74	74	A
A75	75	A
A76	76	A
A77	77	A
A78	78	A
A79	79	A
A80	80	A
A81	81	A
A82	82	A
A83	83	A
A84	84	A
A85	85	A
A86	86	A
A87	87	A
A88	88	A
A89	89	A
A90	90	A
A91	91	A
A92	92	A
A93	93	A
A94	94	A
A95	95	A
A96	96	A
A97	97	A
A98	98	A
A99	99	A
A100	100	A
A101	101	A
A102	102	A
A103	103	A
A104	104	A
A105	105	A
A106	106	A
A107	107	A
A108	108	A
A109	109	A
A110	110	A
A111	111	A
A112	112	A
A113	113	A
A114	114	A
A115	115	A
A116	116	A
A117	117	A
A118	118	A
A119	119	A
A120	120	A
A121	121	A
A122	122	A
A123	123	A
A124	124	A
A125	125	A
A126	126	A
A127	127	A
A128	128	A
A129	129	A
A130	130	A
A131	131	A
A132	132	A
A133	133	A
A134	134	A
A135	135	A
A136	136	A
A137	137	A
A138	138	A
A139	139	A
A140	140	A
A141	141	A
A142	142	A
A143	143	A
A144	144	A
A145	145	A
A146	146	A
A147	147	A
A148	148	A
A149	149	A
A150	150	A
B1	1	B
B2	2	B
B3	3	B
B4	4	B
B5	5	B
B6	6	B
B7	7	B
B8	8	B
B9	9	B
B10	10	B
B11	11	B
B12	12	B
B13	13	B

B14	14	B
B15	15	B
B16	16	B
B17	17	B
B18	18	B
B19	19	B
B20	20	B
B21	21	B
B22	22	B
B23	23	B
B24	24	B
B25	25	B
B26	26	B
B27	27	B
B28	28	B
B29	29	B
B30	30	B
B31	31	B
B32	32	B
B33	33	B
B34	34	B
B35	35	B
B36	36	B
B37	37	B
B38	38	B
B39	39	B
B40	40	B
B41	41	B
B42	42	B
B43	43	B
B44	44	B
B45	45	B
B46	46	B
B47	47	B
B48	48	B
B49	49	B
B50	50	B
B51	51	B
B52	52	B
B53	53	B
B54	54	B
B55	55	B
B56	56	B
B57	57	B
B58	58	B
B59	59	B
B60	60	B
B61	61	B
B62	62	B
B63	63	B
B64	64	B
B65	65	B
B66	66	B
B67	67	B
B68	68	B
B69	69	B
B70	70	B
B71	71	B
B72	72	B
B73	73	B
B74	74	B
B75	75	B
B76	76	B
B77	77	B
B78	78	B
B79	79	B
B80	80	B
B81	81	B
B82	82	B
B83	83	B
B84	84	B
B85	85	B
B86	86	B
B87	87	B
B88	88	B
B89	89	B
B90	90	B
B91	91	B
B92	92	B
B93	93	B
B94	94	B
B95	95	B
B96	96	B
B97	97	B
B98	98	B
B99	99	B
B100	100	B
B101	101	B
B102	102	B
B103	103	B
B104	104	B
B105	105	B
B106	106	B
B107	107	B
B108	108	B
B109	109	B
B110	110	B
B111	111	B
B112	112	B
B113	113	B
B114	114	B
B115	115	B
B116	116	B
B117	117	B
B118	118	B
B119	119	B
B120	120	B
B121	121	B
B122	122	B
B123	123	B
B124	124	B

B125	125	B
B126	126	B
B127	127	B
B128	128	B
B129	129	B
B130	130	B
B131	131	B
B132	132	B
B133	133	B
B134	134	B
B135	135	B
B136	136	B
B137	137	B
B138	138	B
B139	139	B
B140	140	B
B141	141	B
B142	142	B
B143	143	B
B144	144	B
B145	145	B
B146	146	B
B147	147	B
B148	148	B
B149	149	B
B150	150	B
C1	1	C
C2	2	C
C3	3	C
C4	4	C
C5	5	C
C6	6	C
C7	7	C
C8	8	C
C9	9	C
C10	10	C
C11	11	C
C12	12	C
C13	13	C
C14	14	C
C15	15	C
C16	16	C
C17	17	C
C18	18	C
C19	19	C
C20	20	C
C21	21	C
C22	22	C
C23	23	C
C24	24	C
C25	25	C
C26	26	C
C27	27	C
C28	28	C
C29	29	C
C30	30	C
C31	31	C
C32	32	C
C33	33	C
C34	34	C
C35	35	C
C36	36	C
C37	37	C
C38	38	C
C39	39	C
C40	40	C
C41	41	C
C42	42	C
C43	43	C
C44	44	C
C45	45	C
C46	46	C
C47	47	C
C48	48	C
C49	49	C
C50	50	C
C51	51	C
C52	52	C
C53	53	C
C54	54	C
C55	55	C
C56	56	C
C57	57	C
C58	58	C
C59	59	C
C60	60	C
C61	61	C
C62	62	C
C63	63	C
C64	64	C
C65	65	C
C66	66	C
C67	67	C
C68	68	C
C69	69	C
C70	70	C
C71	71	C
C72	72	C
C73	73	C
C74	74	C
C75	75	C
C76	76	C
C77	77	C
C78	78	C
C79	79	C
C80	80	C
C81	81	C
C82	82	C
C83	83	C
C84	84	C
C85	85	C

C86	86	C
C87	87	C
C88	88	C
C89	89	C
C90	90	C
C91	91	C
C92	92	C
C93	93	C
C94	94	C
C95	95	C
C96	96	C
C97	97	C
C98	98	C
C99	99	C
C100	100	C
C101	101	C
C102	102	C
C103	103	C
C104	104	C
C105	105	C
C106	106	C
C107	107	C
C108	108	C
C109	109	C
C110	110	C
C111	111	C
C112	112	C
C113	113	C
C114	114	C
C115	115	C
C116	116	C
C117	117	C
C118	118	C
C119	119	C
C120	120	C
C121	121	C
C122	122	C
C123	123	C
C124	124	C
C125	125	C
C126	126	C
C127	127	C
C128	128	C
C129	129	C
C130	130	C
C131	131	C
C132	132	C
C133	133	C
C134	134	C
C135	135	C
C136	136	C
C137	137	C
C138	138	C
C139	139	C
C140	140	C
C141	141	C
C142	142	C
C143	143	C
C144	144	C
C145	145	C
C146	146	C
C147	147	C
C148	148	C
C149	149	C
C150	150	C
D1	1	D
D2	2	D
D3	3	D
D4	4	D
D5	5	D
D6	6	D
D7	7	D
D8	8	D
D9	9	D
D10	10	D
D11	11	D
D12	12	D
D13	13	D
D14	14	D
D15	15	D
D16	16	D
D17	17	D
D18	18	D
D19	19	D
D20	20	D
D21	21	D
D22	22	D
D23	23	D
D24	24	D
D25	25	D
D26	26	D
D27	27	D
D28	28	D
D29	29	D
D30	30	D
D31	31	D
D32	32	D
D33	33	D
D34	34	D
D35	35	D
D36	36	D
D37	37	D
D38	38	D
D39	39	D
D40	40	D
D41	41	D
D42	42	D
D43	43	D
D44	44	D
D45	45	D
D46	46	D

D47	47	D
D48	48	D
D49	49	D
D50	50	D
D51	51	D
D52	52	D
D53	53	D
D54	54	D
D55	55	D
D56	56	D
D57	57	D
D58	58	D
D59	59	D
D60	60	D
D61	61	D
D62	62	D
D63	63	D
D64	64	D
D65	65	D
D66	66	D
D67	67	D
D68	68	D
D69	69	D
D70	70	D
D71	71	D
D72	72	D
D73	73	D
D74	74	D
D75	75	D
D76	76	D
D77	77	D
D78	78	D
D79	79	D
D80	80	D
D81	81	D
D82	82	D
D83	83	D
D84	84	D
D85	85	D
D86	86	D
D87	87	D
D88	88	D
D89	89	D
D90	90	D
D91	91	D
D92	92	D
D93	93	D
D94	94	D
D95	95	D
D96	96	D
D97	97	D
D98	98	D
D99	99	D
D100	100	D
D101	101	D
D102	102	D
D103	103	D
D104	104	D
D105	105	D
D106	106	D
D107	107	D
D108	108	D
D109	109	D
D110	110	D
D111	111	D
D112	112	D
D113	113	D
D114	114	D
D115	115	D
D116	116	D
D117	117	D
D118	118	D
D119	119	D
D120	120	D
D121	121	D
D122	122	D
D123	123	D
D124	124	D
D125	125	D
D126	126	D
D127	127	D
D128	128	D
D129	129	D
D130	130	D
D131	131	D
D132	132	D
D133	133	D
D134	134	D
D135	135	D
D136	136	D
D137	137	D
D138	138	D
D139	139	D
D140	140	D
D141	141	D
D142	142	D
D143	143	D
D144	144	D
D145	145	D
D146	146	D
D147	147	D
D148	148	D
D149	149	D
D150	150	D
E1	1	E
E2	2	E
E3	3	E
E4	4	E
E5	5	E
E6	6	E
E7	7	E

E8	8	E
E9	9	E
E10	10	E
E11	11	E
E12	12	E
E13	13	E
E14	14	E
E15	15	E
E16	16	E
E17	17	E
E18	18	E
E19	19	E
E20	20	E
E21	21	E
E22	22	E
E23	23	E
E24	24	E
E25	25	E
E26	26	E
E27	27	E
E28	28	E
E29	29	E
E30	30	E
E31	31	E
E32	32	E
E33	33	E
E34	34	E
E35	35	E
E36	36	E
E37	37	E
E38	38	E
E39	39	E
E40	40	E
E41	41	E
E42	42	E
E43	43	E
E44	44	E
E45	45	E
E46	46	E
E47	47	E
E48	48	E
E49	49	E
E50	50	E
E51	51	E
E52	52	E
E53	53	E
E54	54	E
E55	55	E
E56	56	E
E57	57	E
E58	58	E
E59	59	E
E60	60	E
E61	61	E
E62	62	E
E63	63	E
E64	64	E
E65	65	E
E66	66	E
E67	67	E
E68	68	E
E69	69	E
E70	70	E
E71	71	E
E72	72	E
E73	73	E
E74	74	E
E75	75	E
E76	76	E
E77	77	E
E78	78	E
E79	79	E
E80	80	E
E81	81	E
E82	82	E
E83	83	E
E84	84	E
E85	85	E
E86	86	E
E87	87	E
E88	88	E
E89	89	E
E90	90	E
E91	91	E
E92	92	E
E93	93	E
E94	94	E
E95	95	E
E96	96	E
E97	97	E
E98	98	E
E99	99	E
E100	100	E
E101	101	E
E102	102	E
E103	103	E
E104	104	E
E105	105	E
E106	106	E
E107	107	E
E108	108	E
E109	109	E
E110	110	E
E111	111	E
E112	112	E
E113	113	E
E114	114	E
E115	115	E
E116	116	E
E117	117	E
E118	118	E

E119	119	E
E120	120	E
E121	121	E
E122	122	E
E123	123	E
E124	124	E
E125	125	E
E126	126	E
E127	127	E
E128	128	E
E129	129	E
E130	130	E
E131	131	E
E132	132	E
E133	133	E
E134	134	E
E135	135	E
E136	136	E
E137	137	E
E138	138	E
E139	139	E
E140	140	E
E141	141	E
E142	142	E
E143	143	E
E144	144	E
E145	145	E
E146	146	E
E147	147	E
E148	148	E
E149	149	E
E150	150	E

Results Library

Model Period Ending	31 Dec 40	31 Dec 41	31 Dec 42	31 Dec 43	31 Dec 44	31 Dec 45	31 Dec 46	31 Dec 47	31 Dec 48	31 Dec 49	31 Dec 50	31 Dec 51	31 Dec 52	31 Dec 53	31 Dec 54	31 Dec 55	31 Dec 56	31 Dec 57	31 Dec 58	31 Dec 59	31 Dec 60	31 Dec 61	31 Dec 62	31 Dec 63	31 Dec 64	31 Dec 65	31 Dec 66	31 Dec 67
Pre-forecast vs Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067
Model Column counter	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

Scenario list

1 A Mgmt.
2 B Base Case
3 C Upside
4 D Downside
5 E Scenario 5

Save as scenario
Position in library

Live Links

94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150

Library		
A1	1	A
A2	2	A
A3	3	A
A4	4	A
A5	5	A
A6	6	A
A7	7	A
A8	8	A
A9	9	A
A10	10	A
A11	11	A
A12	12	A
A13	13	A
A14	14	A
A15	15	A
A16	16	A
A17	17	A
A18	18	A
A19	19	A
A20	20	A
A21	21	A
A22	22	A
A23	23	A
A24	24	A
A25	25	A
A26	26	A
A27	27	A
A28	28	A
A29	29	A
A30	30	A
A31	31	A
A32	32	A
A33	33	A
A34	34	A
A35	35	A
A36	36	A
A37	37	A
A38	38	A
A39	39	A
A40	40	A
A41	41	A
A42	42	A
A43	43	A
A44	44	A
A45	45	A
A46	46	A
A47	47	A
A48	48	A
A49	49	A
A50	50	A
A51	51	A
A52	52	A

A53	53	A
A54	54	A
A55	55	A
A56	56	A
A57	57	A
A58	58	A
A59	59	A
A60	60	A
A61	61	A
A62	62	A
A63	63	A
A64	64	A
A65	65	A
A66	66	A
A67	67	A
A68	68	A
A69	69	A
A70	70	A
A71	71	A
A72	72	A
A73	73	A
A74	74	A
A75	75	A
A76	76	A
A77	77	A
A78	78	A
A79	79	A
A80	80	A
A81	81	A
A82	82	A
A83	83	A
A84	84	A
A85	85	A
A86	86	A
A87	87	A
A88	88	A
A89	89	A
A90	90	A
A91	91	A
A92	92	A
A93	93	A
A94	94	A
A95	95	A
A96	96	A
A97	97	A
A98	98	A
A99	99	A
A100	100	A
A101	101	A
A102	102	A
A103	103	A
A104	104	A
A105	105	A
A106	106	A
A107	107	A
A108	108	A
A109	109	A
A110	110	A
A111	111	A
A112	112	A
A113	113	A
A114	114	A
A115	115	A
A116	116	A
A117	117	A
A118	118	A
A119	119	A
A120	120	A
A121	121	A
A122	122	A
A123	123	A
A124	124	A
A125	125	A
A126	126	A
A127	127	A
A128	128	A
A129	129	A
A130	130	A
A131	131	A
A132	132	A
A133	133	A
A134	134	A
A135	135	A
A136	136	A
A137	137	A
A138	138	A
A139	139	A
A140	140	A
A141	141	A
A142	142	A
A143	143	A
A144	144	A
A145	145	A
A146	146	A
A147	147	A
A148	148	A
A149	149	A
A150	150	A
B1	1	B
B2	2	B
B3	3	B
B4	4	B
B5	5	B
B6	6	B
B7	7	B
B8	8	B
B9	9	B
B10	10	B
B11	11	B
B12	12	B
B13	13	B

B14	14	B
B15	15	B
B16	16	B
B17	17	B
B18	18	B
B19	19	B
B20	20	B
B21	21	B
B22	22	B
B23	23	B
B24	24	B
B25	25	B
B26	26	B
B27	27	B
B28	28	B
B29	29	B
B30	30	B
B31	31	B
B32	32	B
B33	33	B
B34	34	B
B35	35	B
B36	36	B
B37	37	B
B38	38	B
B39	39	B
B40	40	B
B41	41	B
B42	42	B
B43	43	B
B44	44	B
B45	45	B
B46	46	B
B47	47	B
B48	48	B
B49	49	B
B50	50	B
B51	51	B
B52	52	B
B53	53	B
B54	54	B
B55	55	B
B56	56	B
B57	57	B
B58	58	B
B59	59	B
B60	60	B
B61	61	B
B62	62	B
B63	63	B
B64	64	B
B65	65	B
B66	66	B
B67	67	B
B68	68	B
B69	69	B
B70	70	B
B71	71	B
B72	72	B
B73	73	B
B74	74	B
B75	75	B
B76	76	B
B77	77	B
B78	78	B
B79	79	B
B80	80	B
B81	81	B
B82	82	B
B83	83	B
B84	84	B
B85	85	B
B86	86	B
B87	87	B
B88	88	B
B89	89	B
B90	90	B
B91	91	B
B92	92	B
B93	93	B
B94	94	B
B95	95	B
B96	96	B
B97	97	B
B98	98	B
B99	99	B
B100	100	B
B101	101	B
B102	102	B
B103	103	B
B104	104	B
B105	105	B
B106	106	B
B107	107	B
B108	108	B
B109	109	B
B110	110	B
B111	111	B
B112	112	B
B113	113	B
B114	114	B
B115	115	B
B116	116	B
B117	117	B
B118	118	B
B119	119	B
B120	120	B
B121	121	B
B122	122	B
B123	123	B
B124	124	B

B125	125	B
B126	126	B
B127	127	B
B128	128	B
B129	129	B
B130	130	B
B131	131	B
B132	132	B
B133	133	B
B134	134	B
B135	135	B
B136	136	B
B137	137	B
B138	138	B
B139	139	B
B140	140	B
B141	141	B
B142	142	B
B143	143	B
B144	144	B
B145	145	B
B146	146	B
B147	147	B
B148	148	B
B149	149	B
B150	150	B
C1	1	C
C2	2	C
C3	3	C
C4	4	C
C5	5	C
C6	6	C
C7	7	C
C8	8	C
C9	9	C
C10	10	C
C11	11	C
C12	12	C
C13	13	C
C14	14	C
C15	15	C
C16	16	C
C17	17	C
C18	18	C
C19	19	C
C20	20	C
C21	21	C
C22	22	C
C23	23	C
C24	24	C
C25	25	C
C26	26	C
C27	27	C
C28	28	C
C29	29	C
C30	30	C
C31	31	C
C32	32	C
C33	33	C
C34	34	C
C35	35	C
C36	36	C
C37	37	C
C38	38	C
C39	39	C
C40	40	C
C41	41	C
C42	42	C
C43	43	C
C44	44	C
C45	45	C
C46	46	C
C47	47	C
C48	48	C
C49	49	C
C50	50	C
C51	51	C
C52	52	C
C53	53	C
C54	54	C
C55	55	C
C56	56	C
C57	57	C
C58	58	C
C59	59	C
C60	60	C
C61	61	C
C62	62	C
C63	63	C
C64	64	C
C65	65	C
C66	66	C
C67	67	C
C68	68	C
C69	69	C
C70	70	C
C71	71	C
C72	72	C
C73	73	C
C74	74	C
C75	75	C
C76	76	C
C77	77	C
C78	78	C
C79	79	C
C80	80	C
C81	81	C
C82	82	C
C83	83	C
C84	84	C
C85	85	C

C86	86	C
C87	87	C
C88	88	C
C89	89	C
C90	90	C
C91	91	C
C92	92	C
C93	93	C
C94	94	C
C95	95	C
C96	96	C
C97	97	C
C98	98	C
C99	99	C
C100	100	C
C101	101	C
C102	102	C
C103	103	C
C104	104	C
C105	105	C
C106	106	C
C107	107	C
C108	108	C
C109	109	C
C110	110	C
C111	111	C
C112	112	C
C113	113	C
C114	114	C
C115	115	C
C116	116	C
C117	117	C
C118	118	C
C119	119	C
C120	120	C
C121	121	C
C122	122	C
C123	123	C
C124	124	C
C125	125	C
C126	126	C
C127	127	C
C128	128	C
C129	129	C
C130	130	C
C131	131	C
C132	132	C
C133	133	C
C134	134	C
C135	135	C
C136	136	C
C137	137	C
C138	138	C
C139	139	C
C140	140	C
C141	141	C
C142	142	C
C143	143	C
C144	144	C
C145	145	C
C146	146	C
C147	147	C
C148	148	C
C149	149	C
C150	150	C
D1	1	D
D2	2	D
D3	3	D
D4	4	D
D5	5	D
D6	6	D
D7	7	D
D8	8	D
D9	9	D
D10	10	D
D11	11	D
D12	12	D
D13	13	D
D14	14	D
D15	15	D
D16	16	D
D17	17	D
D18	18	D
D19	19	D
D20	20	D
D21	21	D
D22	22	D
D23	23	D
D24	24	D
D25	25	D
D26	26	D
D27	27	D
D28	28	D
D29	29	D
D30	30	D
D31	31	D
D32	32	D
D33	33	D
D34	34	D
D35	35	D
D36	36	D
D37	37	D
D38	38	D
D39	39	D
D40	40	D
D41	41	D
D42	42	D
D43	43	D
D44	44	D
D45	45	D
D46	46	D

D47	47	D
D48	48	D
D49	49	D
D50	50	D
D51	51	D
D52	52	D
D53	53	D
D54	54	D
D55	55	D
D56	56	D
D57	57	D
D58	58	D
D59	59	D
D60	60	D
D61	61	D
D62	62	D
D63	63	D
D64	64	D
D65	65	D
D66	66	D
D67	67	D
D68	68	D
D69	69	D
D70	70	D
D71	71	D
D72	72	D
D73	73	D
D74	74	D
D75	75	D
D76	76	D
D77	77	D
D78	78	D
D79	79	D
D80	80	D
D81	81	D
D82	82	D
D83	83	D
D84	84	D
D85	85	D
D86	86	D
D87	87	D
D88	88	D
D89	89	D
D90	90	D
D91	91	D
D92	92	D
D93	93	D
D94	94	D
D95	95	D
D96	96	D
D97	97	D
D98	98	D
D99	99	D
D100	100	D
D101	101	D
D102	102	D
D103	103	D
D104	104	D
D105	105	D
D106	106	D
D107	107	D
D108	108	D
D109	109	D
D110	110	D
D111	111	D
D112	112	D
D113	113	D
D114	114	D
D115	115	D
D116	116	D
D117	117	D
D118	118	D
D119	119	D
D120	120	D
D121	121	D
D122	122	D
D123	123	D
D124	124	D
D125	125	D
D126	126	D
D127	127	D
D128	128	D
D129	129	D
D130	130	D
D131	131	D
D132	132	D
D133	133	D
D134	134	D
D135	135	D
D136	136	D
D137	137	D
D138	138	D
D139	139	D
D140	140	D
D141	141	D
D142	142	D
D143	143	D
D144	144	D
D145	145	D
D146	146	D
D147	147	D
D148	148	D
D149	149	D
D150	150	D
E1	1	E
E2	2	E
E3	3	E
E4	4	E
E5	5	E
E6	6	E
E7	7	E

E8	8	E
E9	9	E
E10	10	E
E11	11	E
E12	12	E
E13	13	E
E14	14	E
E15	15	E
E16	16	E
E17	17	E
E18	18	E
E19	19	E
E20	20	E
E21	21	E
E22	22	E
E23	23	E
E24	24	E
E25	25	E
E26	26	E
E27	27	E
E28	28	E
E29	29	E
E30	30	E
E31	31	E
E32	32	E
E33	33	E
E34	34	E
E35	35	E
E36	36	E
E37	37	E
E38	38	E
E39	39	E
E40	40	E
E41	41	E
E42	42	E
E43	43	E
E44	44	E
E45	45	E
E46	46	E
E47	47	E
E48	48	E
E49	49	E
E50	50	E
E51	51	E
E52	52	E
E53	53	E
E54	54	E
E55	55	E
E56	56	E
E57	57	E
E58	58	E
E59	59	E
E60	60	E
E61	61	E
E62	62	E
E63	63	E
E64	64	E
E65	65	E
E66	66	E
E67	67	E
E68	68	E
E69	69	E
E70	70	E
E71	71	E
E72	72	E
E73	73	E
E74	74	E
E75	75	E
E76	76	E
E77	77	E
E78	78	E
E79	79	E
E80	80	E
E81	81	E
E82	82	E
E83	83	E
E84	84	E
E85	85	E
E86	86	E
E87	87	E
E88	88	E
E89	89	E
E90	90	E
E91	91	E
E92	92	E
E93	93	E
E94	94	E
E95	95	E
E96	96	E
E97	97	E
E98	98	E
E99	99	E
E100	100	E
E101	101	E
E102	102	E
E103	103	E
E104	104	E
E105	105	E
E106	106	E
E107	107	E
E108	108	E
E109	109	E
E110	110	E
E111	111	E
E112	112	E
E113	113	E
E114	114	E
E115	115	E
E116	116	E
E117	117	E
E118	118	E

E119	119	E
E120	120	E
E121	121	E
E122	122	E
E123	123	E
E124	124	E
E125	125	E
E126	126	E
E127	127	E
E128	128	E
E129	129	E
E130	130	E
E131	131	E
E132	132	E
E133	133	E
E134	134	E
E135	135	E
E136	136	E
E137	137	E
E138	138	E
E139	139	E
E140	140	E
E141	141	E
E142	142	E
E143	143	E
E144	144	E
E145	145	E
E146	146	E
E147	147	E
E148	148	E
E149	149	E
E150	150	E

Results Library

Model Period Ending	31 Dec 68	31 Dec 69	31 Dec 70	31 Dec 71	31 Dec 72	31 Dec 73	31 Dec 74	31 Dec 75	31 Dec 76	31 Dec 77	31 Dec 78	31 Dec 79	31 Dec 80	31 Dec 81	31 Dec 82	31 Dec 83	31 Dec 84	31 Dec 85	31 Dec 86	31 Dec 87	31 Dec 88	31 Dec 89	31 Dec 90	31 Dec 91	31 Dec 92	31 Dec 93	31 Dec 94	31 Dec 95
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095
Model Column counter	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81

Scenario list

1 A Mgmt.
2 B Base Case
3 C Upside
4 D Downside
5 E Scenario 5

Save as scenario
Position in library

Live Links

94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150

Library		
A1	1	A
A2	2	A
A3	3	A
A4	4	A
A5	5	A
A6	6	A
A7	7	A
A8	8	A
A9	9	A
A10	10	A
A11	11	A
A12	12	A
A13	13	A
A14	14	A
A15	15	A
A16	16	A
A17	17	A
A18	18	A
A19	19	A
A20	20	A
A21	21	A
A22	22	A
A23	23	A
A24	24	A
A25	25	A
A26	26	A
A27	27	A
A28	28	A
A29	29	A
A30	30	A
A31	31	A
A32	32	A
A33	33	A
A34	34	A
A35	35	A
A36	36	A
A37	37	A
A38	38	A
A39	39	A
A40	40	A
A41	41	A
A42	42	A
A43	43	A
A44	44	A
A45	45	A
A46	46	A
A47	47	A
A48	48	A
A49	49	A
A50	50	A
A51	51	A
A52	52	A

A53	53	A
A54	54	A
A55	55	A
A56	56	A
A57	57	A
A58	58	A
A59	59	A
A60	60	A
A61	61	A
A62	62	A
A63	63	A
A64	64	A
A65	65	A
A66	66	A
A67	67	A
A68	68	A
A69	69	A
A70	70	A
A71	71	A
A72	72	A
A73	73	A
A74	74	A
A75	75	A
A76	76	A
A77	77	A
A78	78	A
A79	79	A
A80	80	A
A81	81	A
A82	82	A
A83	83	A
A84	84	A
A85	85	A
A86	86	A
A87	87	A
A88	88	A
A89	89	A
A90	90	A
A91	91	A
A92	92	A
A93	93	A
A94	94	A
A95	95	A
A96	96	A
A97	97	A
A98	98	A
A99	99	A
A100	100	A
A101	101	A
A102	102	A
A103	103	A
A104	104	A
A105	105	A
A106	106	A
A107	107	A
A108	108	A
A109	109	A
A110	110	A
A111	111	A
A112	112	A
A113	113	A
A114	114	A
A115	115	A
A116	116	A
A117	117	A
A118	118	A
A119	119	A
A120	120	A
A121	121	A
A122	122	A
A123	123	A
A124	124	A
A125	125	A
A126	126	A
A127	127	A
A128	128	A
A129	129	A
A130	130	A
A131	131	A
A132	132	A
A133	133	A
A134	134	A
A135	135	A
A136	136	A
A137	137	A
A138	138	A
A139	139	A
A140	140	A
A141	141	A
A142	142	A
A143	143	A
A144	144	A
A145	145	A
A146	146	A
A147	147	A
A148	148	A
A149	149	A
A150	150	A
B1	1	B
B2	2	B
B3	3	B
B4	4	B
B5	5	B
B6	6	B
B7	7	B
B8	8	B
B9	9	B
B10	10	B
B11	11	B
B12	12	B
B13	13	B

B14	14	B
B15	15	B
B16	16	B
B17	17	B
B18	18	B
B19	19	B
B20	20	B
B21	21	B
B22	22	B
B23	23	B
B24	24	B
B25	25	B
B26	26	B
B27	27	B
B28	28	B
B29	29	B
B30	30	B
B31	31	B
B32	32	B
B33	33	B
B34	34	B
B35	35	B
B36	36	B
B37	37	B
B38	38	B
B39	39	B
B40	40	B
B41	41	B
B42	42	B
B43	43	B
B44	44	B
B45	45	B
B46	46	B
B47	47	B
B48	48	B
B49	49	B
B50	50	B
B51	51	B
B52	52	B
B53	53	B
B54	54	B
B55	55	B
B56	56	B
B57	57	B
B58	58	B
B59	59	B
B60	60	B
B61	61	B
B62	62	B
B63	63	B
B64	64	B
B65	65	B
B66	66	B
B67	67	B
B68	68	B
B69	69	B
B70	70	B
B71	71	B
B72	72	B
B73	73	B
B74	74	B
B75	75	B
B76	76	B
B77	77	B
B78	78	B
B79	79	B
B80	80	B
B81	81	B
B82	82	B
B83	83	B
B84	84	B
B85	85	B
B86	86	B
B87	87	B
B88	88	B
B89	89	B
B90	90	B
B91	91	B
B92	92	B
B93	93	B
B94	94	B
B95	95	B
B96	96	B
B97	97	B
B98	98	B
B99	99	B
B100	100	B
B101	101	B
B102	102	B
B103	103	B
B104	104	B
B105	105	B
B106	106	B
B107	107	B
B108	108	B
B109	109	B
B110	110	B
B111	111	B
B112	112	B
B113	113	B
B114	114	B
B115	115	B
B116	116	B
B117	117	B
B118	118	B
B119	119	B
B120	120	B
B121	121	B
B122	122	B
B123	123	B
B124	124	B

B125	125	B
B126	126	B
B127	127	B
B128	128	B
B129	129	B
B130	130	B
B131	131	B
B132	132	B
B133	133	B
B134	134	B
B135	135	B
B136	136	B
B137	137	B
B138	138	B
B139	139	B
B140	140	B
B141	141	B
B142	142	B
B143	143	B
B144	144	B
B145	145	B
B146	146	B
B147	147	B
B148	148	B
B149	149	B
B150	150	B
C1	1	C
C2	2	C
C3	3	C
C4	4	C
C5	5	C
C6	6	C
C7	7	C
C8	8	C
C9	9	C
C10	10	C
C11	11	C
C12	12	C
C13	13	C
C14	14	C
C15	15	C
C16	16	C
C17	17	C
C18	18	C
C19	19	C
C20	20	C
C21	21	C
C22	22	C
C23	23	C
C24	24	C
C25	25	C
C26	26	C
C27	27	C
C28	28	C
C29	29	C
C30	30	C
C31	31	C
C32	32	C
C33	33	C
C34	34	C
C35	35	C
C36	36	C
C37	37	C
C38	38	C
C39	39	C
C40	40	C
C41	41	C
C42	42	C
C43	43	C
C44	44	C
C45	45	C
C46	46	C
C47	47	C
C48	48	C
C49	49	C
C50	50	C
C51	51	C
C52	52	C
C53	53	C
C54	54	C
C55	55	C
C56	56	C
C57	57	C
C58	58	C
C59	59	C
C60	60	C
C61	61	C
C62	62	C
C63	63	C
C64	64	C
C65	65	C
C66	66	C
C67	67	C
C68	68	C
C69	69	C
C70	70	C
C71	71	C
C72	72	C
C73	73	C
C74	74	C
C75	75	C
C76	76	C
C77	77	C
C78	78	C
C79	79	C
C80	80	C
C81	81	C
C82	82	C
C83	83	C
C84	84	C
C85	85	C

C86	86	C
C87	87	C
C88	88	C
C89	89	C
C90	90	C
C91	91	C
C92	92	C
C93	93	C
C94	94	C
C95	95	C
C96	96	C
C97	97	C
C98	98	C
C99	99	C
C100	100	C
C101	101	C
C102	102	C
C103	103	C
C104	104	C
C105	105	C
C106	106	C
C107	107	C
C108	108	C
C109	109	C
C110	110	C
C111	111	C
C112	112	C
C113	113	C
C114	114	C
C115	115	C
C116	116	C
C117	117	C
C118	118	C
C119	119	C
C120	120	C
C121	121	C
C122	122	C
C123	123	C
C124	124	C
C125	125	C
C126	126	C
C127	127	C
C128	128	C
C129	129	C
C130	130	C
C131	131	C
C132	132	C
C133	133	C
C134	134	C
C135	135	C
C136	136	C
C137	137	C
C138	138	C
C139	139	C
C140	140	C
C141	141	C
C142	142	C
C143	143	C
C144	144	C
C145	145	C
C146	146	C
C147	147	C
C148	148	C
C149	149	C
C150	150	C
D1	1	D
D2	2	D
D3	3	D
D4	4	D
D5	5	D
D6	6	D
D7	7	D
D8	8	D
D9	9	D
D10	10	D
D11	11	D
D12	12	D
D13	13	D
D14	14	D
D15	15	D
D16	16	D
D17	17	D
D18	18	D
D19	19	D
D20	20	D
D21	21	D
D22	22	D
D23	23	D
D24	24	D
D25	25	D
D26	26	D
D27	27	D
D28	28	D
D29	29	D
D30	30	D
D31	31	D
D32	32	D
D33	33	D
D34	34	D
D35	35	D
D36	36	D
D37	37	D
D38	38	D
D39	39	D
D40	40	D
D41	41	D
D42	42	D
D43	43	D
D44	44	D
D45	45	D
D46	46	D

D47	47	D
D48	48	D
D49	49	D
D50	50	D
D51	51	D
D52	52	D
D53	53	D
D54	54	D
D55	55	D
D56	56	D
D57	57	D
D58	58	D
D59	59	D
D60	60	D
D61	61	D
D62	62	D
D63	63	D
D64	64	D
D65	65	D
D66	66	D
D67	67	D
D68	68	D
D69	69	D
D70	70	D
D71	71	D
D72	72	D
D73	73	D
D74	74	D
D75	75	D
D76	76	D
D77	77	D
D78	78	D
D79	79	D
D80	80	D
D81	81	D
D82	82	D
D83	83	D
D84	84	D
D85	85	D
D86	86	D
D87	87	D
D88	88	D
D89	89	D
D90	90	D
D91	91	D
D92	92	D
D93	93	D
D94	94	D
D95	95	D
D96	96	D
D97	97	D
D98	98	D
D99	99	D
D100	100	D
D101	101	D
D102	102	D
D103	103	D
D104	104	D
D105	105	D
D106	106	D
D107	107	D
D108	108	D
D109	109	D
D110	110	D
D111	111	D
D112	112	D
D113	113	D
D114	114	D
D115	115	D
D116	116	D
D117	117	D
D118	118	D
D119	119	D
D120	120	D
D121	121	D
D122	122	D
D123	123	D
D124	124	D
D125	125	D
D126	126	D
D127	127	D
D128	128	D
D129	129	D
D130	130	D
D131	131	D
D132	132	D
D133	133	D
D134	134	D
D135	135	D
D136	136	D
D137	137	D
D138	138	D
D139	139	D
D140	140	D
D141	141	D
D142	142	D
D143	143	D
D144	144	D
D145	145	D
D146	146	D
D147	147	D
D148	148	D
D149	149	D
D150	150	D
E1	1	E
E2	2	E
E3	3	E
E4	4	E
E5	5	E
E6	6	E
E7	7	E

E8	8	E
E9	9	E
E10	10	E
E11	11	E
E12	12	E
E13	13	E
E14	14	E
E15	15	E
E16	16	E
E17	17	E
E18	18	E
E19	19	E
E20	20	E
E21	21	E
E22	22	E
E23	23	E
E24	24	E
E25	25	E
E26	26	E
E27	27	E
E28	28	E
E29	29	E
E30	30	E
E31	31	E
E32	32	E
E33	33	E
E34	34	E
E35	35	E
E36	36	E
E37	37	E
E38	38	E
E39	39	E
E40	40	E
E41	41	E
E42	42	E
E43	43	E
E44	44	E
E45	45	E
E46	46	E
E47	47	E
E48	48	E
E49	49	E
E50	50	E
E51	51	E
E52	52	E
E53	53	E
E54	54	E
E55	55	E
E56	56	E
E57	57	E
E58	58	E
E59	59	E
E60	60	E
E61	61	E
E62	62	E
E63	63	E
E64	64	E
E65	65	E
E66	66	E
E67	67	E
E68	68	E
E69	69	E
E70	70	E
E71	71	E
E72	72	E
E73	73	E
E74	74	E
E75	75	E
E76	76	E
E77	77	E
E78	78	E
E79	79	E
E80	80	E
E81	81	E
E82	82	E
E83	83	E
E84	84	E
E85	85	E
E86	86	E
E87	87	E
E88	88	E
E89	89	E
E90	90	E
E91	91	E
E92	92	E
E93	93	E
E94	94	E
E95	95	E
E96	96	E
E97	97	E
E98	98	E
E99	99	E
E100	100	E
E101	101	E
E102	102	E
E103	103	E
E104	104	E
E105	105	E
E106	106	E
E107	107	E
E108	108	E
E109	109	E
E110	110	E
E111	111	E
E112	112	E
E113	113	E
E114	114	E
E115	115	E
E116	116	E
E117	117	E
E118	118	E

E119	119	E
E120	120	E
E121	121	E
E122	122	E
E123	123	E
E124	124	E
E125	125	E
E126	126	E
E127	127	E
E128	128	E
E129	129	E
E130	130	E
E131	131	E
E132	132	E
E133	133	E
E134	134	E
E135	135	E
E136	136	E
E137	137	E
E138	138	E
E139	139	E
E140	140	E
E141	141	E
E142	142	E
E143	143	E
E144	144	E
E145	145	E
E146	146	E
E147	147	E
E148	148	E
E149	149	E
E150	150	E

Results Library

Model Period Ending	31 Dec 96	31 Dec 97	31 Dec 98	31 Dec 99	31 Dec 00	31 Dec 01	31 Dec 02	31 Dec 03	31 Dec 04	31 Dec 05	31 Dec 06	31 Dec 07	31 Dec 08	31 Dec 09	31 Dec 10	31 Dec 11	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20
Pre-forecast vs Forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast	Post-forecast
Financial Year Ending	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120
Model Column counter	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106

Scenario list

1 A Mgmt.
2 B Base Case
3 C Upside
4 D Downside
5 E Scenario 5

Save as scenario
Position in library

Live Links

94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150

Library		
A1	1	A
A2	2	A
A3	3	A
A4	4	A
A5	5	A
A6	6	A
A7	7	A
A8	8	A
A9	9	A
A10	10	A
A11	11	A
A12	12	A
A13	13	A
A14	14	A
A15	15	A
A16	16	A
A17	17	A
A18	18	A
A19	19	A
A20	20	A
A21	21	A
A22	22	A
A23	23	A
A24	24	A
A25	25	A
A26	26	A
A27	27	A
A28	28	A
A29	29	A
A30	30	A
A31	31	A
A32	32	A
A33	33	A
A34	34	A
A35	35	A
A36	36	A
A37	37	A
A38	38	A
A39	39	A
A40	40	A
A41	41	A
A42	42	A
A43	43	A
A44	44	A
A45	45	A
A46	46	A
A47	47	A
A48	48	A
A49	49	A
A50	50	A
A51	51	A
A52	52	A

A53	53	A
A54	54	A
A55	55	A
A56	56	A
A57	57	A
A58	58	A
A59	59	A
A60	60	A
A61	61	A
A62	62	A
A63	63	A
A64	64	A
A65	65	A
A66	66	A
A67	67	A
A68	68	A
A69	69	A
A70	70	A
A71	71	A
A72	72	A
A73	73	A
A74	74	A
A75	75	A
A76	76	A
A77	77	A
A78	78	A
A79	79	A
A80	80	A
A81	81	A
A82	82	A
A83	83	A
A84	84	A
A85	85	A
A86	86	A
A87	87	A
A88	88	A
A89	89	A
A90	90	A
A91	91	A
A92	92	A
A93	93	A
A94	94	A
A95	95	A
A96	96	A
A97	97	A
A98	98	A
A99	99	A
A100	100	A
A101	101	A
A102	102	A
A103	103	A
A104	104	A
A105	105	A
A106	106	A
A107	107	A
A108	108	A
A109	109	A
A110	110	A
A111	111	A
A112	112	A
A113	113	A
A114	114	A
A115	115	A
A116	116	A
A117	117	A
A118	118	A
A119	119	A
A120	120	A
A121	121	A
A122	122	A
A123	123	A
A124	124	A
A125	125	A
A126	126	A
A127	127	A
A128	128	A
A129	129	A
A130	130	A
A131	131	A
A132	132	A
A133	133	A
A134	134	A
A135	135	A
A136	136	A
A137	137	A
A138	138	A
A139	139	A
A140	140	A
A141	141	A
A142	142	A
A143	143	A
A144	144	A
A145	145	A
A146	146	A
A147	147	A
A148	148	A
A149	149	A
A150	150	A
B1	1	B
B2	2	B
B3	3	B
B4	4	B
B5	5	B
B6	6	B
B7	7	B
B8	8	B
B9	9	B
B10	10	B
B11	11	B
B12	12	B
B13	13	B

B14	14	B
B15	15	B
B16	16	B
B17	17	B
B18	18	B
B19	19	B
B20	20	B
B21	21	B
B22	22	B
B23	23	B
B24	24	B
B25	25	B
B26	26	B
B27	27	B
B28	28	B
B29	29	B
B30	30	B
B31	31	B
B32	32	B
B33	33	B
B34	34	B
B35	35	B
B36	36	B
B37	37	B
B38	38	B
B39	39	B
B40	40	B
B41	41	B
B42	42	B
B43	43	B
B44	44	B
B45	45	B
B46	46	B
B47	47	B
B48	48	B
B49	49	B
B50	50	B
B51	51	B
B52	52	B
B53	53	B
B54	54	B
B55	55	B
B56	56	B
B57	57	B
B58	58	B
B59	59	B
B60	60	B
B61	61	B
B62	62	B
B63	63	B
B64	64	B
B65	65	B
B66	66	B
B67	67	B
B68	68	B
B69	69	B
B70	70	B
B71	71	B
B72	72	B
B73	73	B
B74	74	B
B75	75	B
B76	76	B
B77	77	B
B78	78	B
B79	79	B
B80	80	B
B81	81	B
B82	82	B
B83	83	B
B84	84	B
B85	85	B
B86	86	B
B87	87	B
B88	88	B
B89	89	B
B90	90	B
B91	91	B
B92	92	B
B93	93	B
B94	94	B
B95	95	B
B96	96	B
B97	97	B
B98	98	B
B99	99	B
B100	100	B
B101	101	B
B102	102	B
B103	103	B
B104	104	B
B105	105	B
B106	106	B
B107	107	B
B108	108	B
B109	109	B
B110	110	B
B111	111	B
B112	112	B
B113	113	B
B114	114	B
B115	115	B
B116	116	B
B117	117	B
B118	118	B
B119	119	B
B120	120	B
B121	121	B
B122	122	B
B123	123	B
B124	124	B

B125	125	B
B126	126	B
B127	127	B
B128	128	B
B129	129	B
B130	130	B
B131	131	B
B132	132	B
B133	133	B
B134	134	B
B135	135	B
B136	136	B
B137	137	B
B138	138	B
B139	139	B
B140	140	B
B141	141	B
B142	142	B
B143	143	B
B144	144	B
B145	145	B
B146	146	B
B147	147	B
B148	148	B
B149	149	B
B150	150	B
C1	1	C
C2	2	C
C3	3	C
C4	4	C
C5	5	C
C6	6	C
C7	7	C
C8	8	C
C9	9	C
C10	10	C
C11	11	C
C12	12	C
C13	13	C
C14	14	C
C15	15	C
C16	16	C
C17	17	C
C18	18	C
C19	19	C
C20	20	C
C21	21	C
C22	22	C
C23	23	C
C24	24	C
C25	25	C
C26	26	C
C27	27	C
C28	28	C
C29	29	C
C30	30	C
C31	31	C
C32	32	C
C33	33	C
C34	34	C
C35	35	C
C36	36	C
C37	37	C
C38	38	C
C39	39	C
C40	40	C
C41	41	C
C42	42	C
C43	43	C
C44	44	C
C45	45	C
C46	46	C
C47	47	C
C48	48	C
C49	49	C
C50	50	C
C51	51	C
C52	52	C
C53	53	C
C54	54	C
C55	55	C
C56	56	C
C57	57	C
C58	58	C
C59	59	C
C60	60	C
C61	61	C
C62	62	C
C63	63	C
C64	64	C
C65	65	C
C66	66	C
C67	67	C
C68	68	C
C69	69	C
C70	70	C
C71	71	C
C72	72	C
C73	73	C
C74	74	C
C75	75	C
C76	76	C
C77	77	C
C78	78	C
C79	79	C
C80	80	C
C81	81	C
C82	82	C
C83	83	C
C84	84	C
C85	85	C

C86	86	C
C87	87	C
C88	88	C
C89	89	C
C90	90	C
C91	91	C
C92	92	C
C93	93	C
C94	94	C
C95	95	C
C96	96	C
C97	97	C
C98	98	C
C99	99	C
C100	100	C
C101	101	C
C102	102	C
C103	103	C
C104	104	C
C105	105	C
C106	106	C
C107	107	C
C108	108	C
C109	109	C
C110	110	C
C111	111	C
C112	112	C
C113	113	C
C114	114	C
C115	115	C
C116	116	C
C117	117	C
C118	118	C
C119	119	C
C120	120	C
C121	121	C
C122	122	C
C123	123	C
C124	124	C
C125	125	C
C126	126	C
C127	127	C
C128	128	C
C129	129	C
C130	130	C
C131	131	C
C132	132	C
C133	133	C
C134	134	C
C135	135	C
C136	136	C
C137	137	C
C138	138	C
C139	139	C
C140	140	C
C141	141	C
C142	142	C
C143	143	C
C144	144	C
C145	145	C
C146	146	C
C147	147	C
C148	148	C
C149	149	C
C150	150	C
D1	1	D
D2	2	D
D3	3	D
D4	4	D
D5	5	D
D6	6	D
D7	7	D
D8	8	D
D9	9	D
D10	10	D
D11	11	D
D12	12	D
D13	13	D
D14	14	D
D15	15	D
D16	16	D
D17	17	D
D18	18	D
D19	19	D
D20	20	D
D21	21	D
D22	22	D
D23	23	D
D24	24	D
D25	25	D
D26	26	D
D27	27	D
D28	28	D
D29	29	D
D30	30	D
D31	31	D
D32	32	D
D33	33	D
D34	34	D
D35	35	D
D36	36	D
D37	37	D
D38	38	D
D39	39	D
D40	40	D
D41	41	D
D42	42	D
D43	43	D
D44	44	D
D45	45	D
D46	46	D

D47	47	D
D48	48	D
D49	49	D
D50	50	D
D51	51	D
D52	52	D
D53	53	D
D54	54	D
D55	55	D
D56	56	D
D57	57	D
D58	58	D
D59	59	D
D60	60	D
D61	61	D
D62	62	D
D63	63	D
D64	64	D
D65	65	D
D66	66	D
D67	67	D
D68	68	D
D69	69	D
D70	70	D
D71	71	D
D72	72	D
D73	73	D
D74	74	D
D75	75	D
D76	76	D
D77	77	D
D78	78	D
D79	79	D
D80	80	D
D81	81	D
D82	82	D
D83	83	D
D84	84	D
D85	85	D
D86	86	D
D87	87	D
D88	88	D
D89	89	D
D90	90	D
D91	91	D
D92	92	D
D93	93	D
D94	94	D
D95	95	D
D96	96	D
D97	97	D
D98	98	D
D99	99	D
D100	100	D
D101	101	D
D102	102	D
D103	103	D
D104	104	D
D105	105	D
D106	106	D
D107	107	D
D108	108	D
D109	109	D
D110	110	D
D111	111	D
D112	112	D
D113	113	D
D114	114	D
D115	115	D
D116	116	D
D117	117	D
D118	118	D
D119	119	D
D120	120	D
D121	121	D
D122	122	D
D123	123	D
D124	124	D
D125	125	D
D126	126	D
D127	127	D
D128	128	D
D129	129	D
D130	130	D
D131	131	D
D132	132	D
D133	133	D
D134	134	D
D135	135	D
D136	136	D
D137	137	D
D138	138	D
D139	139	D
D140	140	D
D141	141	D
D142	142	D
D143	143	D
D144	144	D
D145	145	D
D146	146	D
D147	147	D
D148	148	D
D149	149	D
D150	150	D
E1	1	E
E2	2	E
E3	3	E
E4	4	E
E5	5	E
E6	6	E
E7	7	E

E8	8	E
E9	9	E
E10	10	E
E11	11	E
E12	12	E
E13	13	E
E14	14	E
E15	15	E
E16	16	E
E17	17	E
E18	18	E
E19	19	E
E20	20	E
E21	21	E
E22	22	E
E23	23	E
E24	24	E
E25	25	E
E26	26	E
E27	27	E
E28	28	E
E29	29	E
E30	30	E
E31	31	E
E32	32	E
E33	33	E
E34	34	E
E35	35	E
E36	36	E
E37	37	E
E38	38	E
E39	39	E
E40	40	E
E41	41	E
E42	42	E
E43	43	E
E44	44	E
E45	45	E
E46	46	E
E47	47	E
E48	48	E
E49	49	E
E50	50	E
E51	51	E
E52	52	E
E53	53	E
E54	54	E
E55	55	E
E56	56	E
E57	57	E
E58	58	E
E59	59	E
E60	60	E
E61	61	E
E62	62	E
E63	63	E
E64	64	E
E65	65	E
E66	66	E
E67	67	E
E68	68	E
E69	69	E
E70	70	E
E71	71	E
E72	72	E
E73	73	E
E74	74	E
E75	75	E
E76	76	E
E77	77	E
E78	78	E
E79	79	E
E80	80	E
E81	81	E
E82	82	E
E83	83	E
E84	84	E
E85	85	E
E86	86	E
E87	87	E
E88	88	E
E89	89	E
E90	90	E
E91	91	E
E92	92	E
E93	93	E
E94	94	E
E95	95	E
E96	96	E
E97	97	E
E98	98	E
E99	99	E
E100	100	E
E101	101	E
E102	102	E
E103	103	E
E104	104	E
E105	105	E
E106	106	E
E107	107	E
E108	108	E
E109	109	E
E110	110	E
E111	111	E
E112	112	E
E113	113	E
E114	114	E
E115	115	E
E116	116	E
E117	117	E
E118	118	E

E119	119	E
E120	120	E
E121	121	E
E122	122	E
E123	123	E
E124	124	E
E125	125	E
E126	126	E
E127	127	E
E128	128	E
E129	129	E
E130	130	E
E131	131	E
E132	132	E
E133	133	E
E134	134	E
E135	135	E
E136	136	E
E137	137	E
E138	138	E
E139	139	E
E140	140	E
E141	141	E
E142	142	E
E143	143	E
E144	144	E
E145	145	E
E146	146	E
E147	147	E
E148	148	E
E149	149	E
E150	150	E

Checks and Alert

Base Case	
-	*Error Checks*
-	*Alerts*

	Constant	Unit	Total
CHECK SUMMARY			
Total checks	-	check	
[do not delete row]			
Check #1	-	check	
Check #2	-	check	
[do not delete row]			
ALERT SUMMARY			
Total alerts	-	alert	
[do not delete row]			
Alert #1	-	alert	
Alert #2	-	alert	
[do not delete row]			

kpff Consulting Engineers

1601 5th Avenue, Suite 1300
Seattle, Washington 98101
p (206) 382-0600

SSA Marine
A Carrix Enterprise

TERMINAL 5 GATE COMPLEX
DRAFT 60% ESTIMATE OF PROBABLE CAPITAL CONSTRUCTION COST

Project: Terminal 5 Gate Complex
Subject: DRAFT 60% Estimate of Probable Capital Construction Cost
Client: SSA Terminals LLC.
By: E. Nielsen, P.E., N. Watson, P.E.
Job # 2100019
Date: 18-Mar-22

DRAFT

			T5 Gate Complex		
ITEM NO.	DESCRIPTION OF SITE WORK	UNITS	QUANT	UNIT PRICE	TOTAL
1	Mobilization and Demobilization	LS	1	$ 849,000	$ 849,000
2	Survey	LS	1	$ 171,000	$ 171,000
3	Material Testing	LS	1	$ 120,000	$ 120,000
4	Temporary Erosion and Sediment Control	LS	1	$ 196,000	$ 196,000
5	Temporary Water Treatment and Disposal	LS	1	$ 353,000	$ 353,000
6	Temporary Stormwater Reroute	LS	1	$ 85,000	$ 85,000
7	Construction Dewatering	LS	1	$ 212,000	$ 212,000
8	Site Demolition	LS	1	$ 654,000	$ 654,000
9	Existing Gate Canopy Demolition	LS	1	$ 208,000	$ 208,000
10	Shoring and Trench Safety Systems	LS	1	$ 808,000	$ 808,000
11	Earthwork	LS	1	$ 744,589	$ 745,000
12	Soil Transportation and Disposal	TONS	16,454	$ 88	$ 1,448,000
13	Quarry Spalls	TONS	165	$ 77	$ 14,000
14	Crushed Surfacing Base Course	TONS	5,363	$ 79	$ 425,000
15	Bituminous Concrete Pavement	TONS	3,514	$ 203	$ 715,000
16	PCC Paving	CY	125	$ 750	$ 94,000
17	Storm Drainage Utilities	LS	1	$ 416,000	$ 416,000
18	Waterline Reroute	LS	1	$ 20,000	$ 20,000
19	Restroom Waterline	LS	1	$ 5,000	$ 5,000
20	Restroom Sanitary Sewer	LS	1	$ 59,000	$ 59,000
21	Bollards - 12-inch diam with rub rail	EA	51	$ 2,500	$ 128,000
22	Bollards - 6-inch diam with rub rail	EA	20	$ 1,900	$ 38,000
23	K-Rail	EA	302	$ 1,690	$ 511,000
24	Concrete Scale Pits, Curbs, and Pedestals	LS	1	$ 773,607	$ 773,700
25	Trouble Parking Restroom Foundation	LS	1	$ 18,000	$ 18,000
26	Pavement Markings	LS	1	$ 57,000	$ 57,000
27	Electrical	LS	1	$ 623,000	$ 623,000
28	Phasing and Temporary Striping	LS	1	$ 27,000	$ 27,000
29	Unknown Obstructions	FA	1	$ 30,000	$ 30,000
30	Covid-19 Safety Allowance	ALLOW	1	$ 30,000	$ 30,000
	Contractor Subtotal (Base):				**$ 9,832,700**
31	Contingency		15.00%		$ 1,475,000
32	Washigton Sales Tax (10.25%)		10.25%		$ 1,008,000
33	**Contractor Subtotal (Base+WSST):**				**$ 12,316,000**
	Owner Furnished Items:				
34	Tideworks Equipment				$ 20,000
35	Truck Scales and Equipment relocation				$ 80,000
36	Trouble Parking Restroom Facility (Romtec)				$ 125,000
37	Trouble Parking Restroom Facility Installation (Romtec)				$ 175,000
38	**Owner Furnished Items Subtotal:**				**$ 400,000**
39	**Base Scope Subtotal :**				**$ 12,716,000**
	SSA Additional Items for 4 future scales				
11'	*Additional Excavation Required for Future Scales*	CY	607	$ 60	$ 36,411
12'	*Additional Soil Transportation and Disposal for Future Scales*	TONS	1,153	$ 88	$ 101,466
24'	*Additional Concrete Scale Pits, Curbs, and Pedestals*	LS	1	$ 101,393	$ 101,393
40	**SSA Added Items Construction Subtotal**				**$ 239,270**
41	Contingency		15.00%		$ 36,000
42	Washigton Sales Tax (10.25%)		10.25%		$ 25,000
43	**SSA Added Items Subtotal (Base+WSST):**				**$ 300,270**
44	**T5 Gate Complex Total (Base Scope + SSA Additional):**				**$ 13,017,000**
45				-5.00%	$ 12,367,000
46	**Total Construction**			5.00%	**$ 13,668,000**
47	**Design, Permitting, and Construction Management and Inspection**				$ 1,922,500
	TOTAL PROJECT			**5.00%**	**$ 15,590,500**

$ 1,658,139.51

Construction	$ 10,071,970
Contingency (15%) + Sales tax (10.25%)	$ 2,544,000
Owner furnished items	$ 400,000

NOTES:

General	All unit rates and lump sum values are fully loaded inclusive of all contractor overhead and profit.
General	Totals are rounded up to the nearest one thousand.
General	All unit prices have been escalated approximately 6% to an assumed construction year 2023.
General	Owner furnished items include sales tax and contingency
1	Mobilization is assumed to be 9.5% based on previous T5 Bid Tabs and WSDOT mobilization criteria.
12	Assume all excavated material will be Subtitle D disposal and no on site material will be reused as backfill unless otherwise noted.
31	Tideworks Equipment cost is a placeholder for additional Fiber Switches required to utilize existing fiber from M&R Shop to Admin Bldg
43	SSA Added Items will be part of the contractors bid, but separated here for reimbursement negotiation.
44	T5 Gate Complex Total is a summation of line items 39 and 43
45-46	Cost estimate is consistent with a Class 1/2 estimate per the AACE Cost Classification System. A +5% to -5% range has been applied to the project site work.

PORT OF TACOMA | **Engineering Estimate** | **Date: 11/29/2022**

PROJECT: T5 CY Expansion

Estimate By : Thais Howard | **5/6/2022** | **5**

No.	Description	Qty	Unit	Unit Price	Ext. Price	Component Costs	COMMENTS
	WORK COMPONENT ONE - Demo, Pave, Storm						
1	Mobilization	1	EA	100,000.00	100,000		
2	CFS Demo	1	LS	2,300,000.00	2,300,000		
3	CFS Area Pavement Restoration	1	LS	1,700,000.00	1,700,000		
4	Stormwater Infrastructure	6	Acre	175,000.00	1,050,000		
5	Demo fuel stations	2	EA	250,000.00	500,000		Allowance only
	SUBTOTAL				**5,150,000**		
	CONTINGENCY	40%		5,150,000.00	2,060,000		
	SUBTOTAL-CONSTRUCTION				**7,210,000**		
	WSST @ 10.3%	10.3%		7,210,000.00	742,630		
	Port Staff (PM)	8%		7,210,000.00	576,800		
	Design, Permitting, Construction Management	20%		7,210,000.00	1,442,000		
	Material Testing & Inspection Services	2%		7,210,000.00	144,200		1,587,000 $ 1,368,773.68
	WORK COMPONENT ONE - Demo, Pave, Storm : Total Estimated Costs					**$10,115,630**	**9,082,000** $ 7,833,145.92
	WORK COMPONENT TWO - Grant Administration Costs						
1	Additional Permitting (i.e. NEPA)	1	LS	300,000.00	300,000		
2	Grant Administration	2%		10,115,630.00	202,313		
	SUBTOTAL				**502,313**		
	Contingency	10.0%		502,312.60	50,231		
	WORK COMPONENT TWO - Grant Administration Costs : Total Estimated Costs					**$552,544**	
	TOTAL COSTS					**$10,669,000**	

Project Component	Cost (2023 US$)	Cost (2020 US$)		
Design, Permitting, Construction Mgmt.	1,922,500	1,658,140	1.0000	1.0000
Construction	13,668,000	11,788,531		
Truck Gate Complex Total	**15,590,500**	**13,446,670**		
Design, Permitting, Construction Mgmt.	1,587,000	1,368,774		
Construction	9,082,000	7,833,146		
Yard Expansion Total	**10,669,000**	**9,201,920**		
TOTAL	**26,259,500**	**22,648,590**	26,259,500	-

[1] National Highway Freight Investment Program, grants administered by Washington State Department of Transportation (WSDOT).
[2] National Surface Transportation Program, grants administered by Puget Sound Regional Council (PSRC).
[3] National Port Infrastructure Development Program, grants administered by the US Department of Transportation's Maritime Administration (MARAD).

	2020	2021	2022	2023
CPI	1.25%	4.68%	7.68%	2.86%
Factor	1.0000	1.0468	1.1272	1.1594

Source: https://knoema.com/kyaewad/us-inflation-forecast-2022-2023-and-long-term-to-2030-data-and-charts

Project Component		Project Cost	PIDP Ask	Match (NWSA)	
1	Truck Gate Complex	$15,590,500	$10,114,366	$5,476,134	
2	Yard Expansion	$10,669,000	$6,921,534	$3,747,466	
	Total	**$26,259,500**	$17,035,900	**$9,223,600**	35.12%
	Percent Ask / Match		65%	35%	

Eligible	13,668,000	
	10,669,000	
	24,337,000	30.00%
		9,223,600

Terminal 5 (T5) TEU Forecast		1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase	1.8% increase
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Total	364,000	664,000	675,952	688,119	700,505	713,114	725,950	739,018	752,320	765,862	779,647	793,681	807,967	822,510	837,316	852,387	867,730	883,349	899,250	915,436	931,914	948,689	965,765	983,149	1,000,845	1,018,861	1,037,200	1,055,870	1,074,875
Import	192,179	350,568	356,878	363,302	369,842	376,499	383,276	390,175	397,198	404,347	411,626	419,035	426,578	434,256	442,073	450,030	458,130	466,377	474,771	483,317	492,017	500,873	509,889	519,067	528,410	537,922	547,604	557,461	567,495
Export	171,821	313,432	319,074	324,817	330,664	336,616	342,675	348,843	355,122	361,514	368,021	374,646	381,390	388,255	395,243	402,357	409,600	416,973	424,478	432,119	439,897	447,815	455,876	464,082	472,435	480,939	489,596	498,408	507,380

Caveats
SSA has not given an indication as to which carrier(s) will move to T5 once Phase Two is complete
But the assumption is a that second unknown (international) steamship line will move to T5
Phase Two set to open the beginning of 2023
Import/Export Ratio based on average (see Import/Export Ratio worksheet)
Average Annual Growth Rate of 1.8%

International TEUs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Import	1,382,258	1,686,658	1,632,808	1,608,878	1,463,421	1,307,620	1,526,753	1,495,392	1,556,592	1,437,494	1,378,752	1,441,586	1,512,998	1,512,920	1,605,630	1,527,025	1,359,154	1,554,671	383,117
Export	1,367,149	1,599,598	1,539,027	1,410,787	1,242,408	1,038,513	1,271,373	1,222,551	1,221,622	1,197,641	1,178,514	1,319,045	1,345,624	1,482,204	1,505,602	1,531,321	1,276,480	1,437,449	351,482
Total	**2,749,407**	**3,286,256**	**3,171,835**	**3,019,665**	**2,705,829**	**2,346,133**	**2,798,126**	**2,717,943**	**2,778,215**	**2,635,135**	**2,557,265**	**2,760,630**	**2,858,622**	**2,995,123**	**3,111,232**	**3,058,346**	**2,635,635**	**2,992,120**	**734,598**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Average
Import	50%	51%	51%	53%	54%	56%	55%	55%	56%	55%	54%	52%	53%	51%	52%	50%	52%	52%	52%	53%
Export	50%	49%	49%	47%	46%	44%	45%	45%	44%	45%	46%	48%	47%	49%	48%	50%	48%	48%	48%	47%

Table 13. 2000 Pavement, Congestion, Crash, Air Pollution, and Noise Costs for Illustrative Vehicles Under Specific Conditions						
Vehicle Class/Highway Class	**Cents per Mile**					
	Pavement	**Congestion**	**Crash**	**Air Pollution**	**Noise**	**Total**
Autos/Rural Interstate	-	0.78	0.98	1.14	0.01	2.91
Autos/Urban Interstate	0.10	7.70	1.19	1.33	0.09	10.41
40 kip 4-axle S.U. Truck/Rural Interstate	1.00	2.45	0.47	3.85	0.09	7.86
40 kip 4-axle S.U. Truck/Urban Interstate	3.10	24.48	0.86	4.49	1.50	34.43
60 kip 4-axle S.U. Truck/Rural Interstate	5.60	3.27	0.47	3.85	0.11	13.30
60 kip 4-axle S.U. Truck/Urban Interstate	18.10	32.64	0.86	4.49	1.68	57.77
60 kip 5-axle Comb/Rural Interstate	3.30	1.88	0.88	3.85	0.17	10.08
60 kip 5-axle Comb/Urban Interstate	10.50	18.39	1.15	4.49	2.75	37.28
80 kip 5-axle Comb/Rural Interstate	12.70	2.23	0.88	3.85	0.19	19.85
80 kip 5-axle Comb/Urban Interstate	40.90	20.06	1.15	4.49	3.04	69.64
NOTE: S.U. = Single Unit, Comb. = Combination; Air pollution costs are averages of costs of travel on all rural and urban highway classes, not just Interstate. Available data do not allow differences in air pollution costs for heavy truck classes to be distinguished.						

	Miles	Share	Pavement	Congestion
Rural	-	-	-	-
Urban	100.00%	1.00	25.70	19.23
		Weighted average	25.70	19.23
		GDP Inflator	*1.62*	*1.62*
		cents per mile (2020 USD)	41.52	31.06
Source: http://www.dot.state.oh.us/Divisions/Planning/TechServ/TIM/Documents/RI339/RI339.pdf (pg. 89)				

Table 1.1.9. Implicit Price Deflators for Gross Domestic Product
[Index numbers, 2012=100]
Bureau of Economic Analysis
Last Revised on: February 24, 2022 - Next Release Date March 30, 2022

Line		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Line																													
1	**Gross domestic product**	70	72	73	74	75	76	78	80	81	83	85	88	90	93	94	95	96	98	100	102	104	105	106	108	110	112	114	118
2	**Personal consumption expenditures**	70	72	73	74	75	76	78	80	81	82	84	87	89	92	94	94	96	98	100	101	103	103	104	106	108	110	111	116
3	Goods	87	87	88	88	87	87	89	89	88	88	89	91	92	93	96	94	95	99	100	99	99	96	94	95	95	95	94	99
4	Durable goods	139	140	138	135	132	128	126	123	120	116	113	112	110	108	106	104	102	101	100	98	95	93	91	89	88	86	86	91
5	Nondurable goods	67	67	69	70	69	71	74	75	75	76	79	82	85	87	92	89	92	98	100	100	101	97	96	97	99	99	99	103
6	Services	63	64	66	68	69	71	73	75	77	80	82	85	88	91	93	94	96	98	100	102	105	107	109	112	115	118	120	124
7	**Gross private domestic investment**	85	86	86	86	86	86	87	87	88	89	91	95	98	100	101	99	98	99	100	101	103	104	104	105	107	109	110	113
8	Fixed investment	84	85	85	86	85	85	86	87	88	88	91	95	98	99	100	99	98	99	100	101	103	104	104	106	108	110	111	115
9	Nonresidential	95	96	95	95	93	92	93	92	92	91	92	94	97	98	100	99	97	99	100	100	101	102	101	102	103	104	105	106
10	Structures	44	46	48	49	52	53	55	58	61	63	67	76	85	90	94	93	92	95	100	101	107	109	110	113	114	119	121	128
11	Equipment	135	134	131	127	121	117	114	111	109	106	105	105	104	103	103	103	99	99	100	100	99	99	98	98	98	98	97	98
12	Intellectual property products	90	93	94	94	94	95	98	98	96	96	95	96	97	98	100	99	98	100	100	100	101	101	100	101	102	103	105	106
13	Residential	62	64	66	67	69	72	75	79	81	84	90	97	102	104	102	99	98	99	100	105	111	114	118	123	130	134	139	153
14	Change in private inventories	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15	**Net exports of goods and services**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16	Exports	81	83	82	81	79	78	80	79	78	80	82	85	88	91	95	90	93	99	100	100	100	95	93	96	99	99	96	107
17	Goods	85	87	85	82	80	79	80	80	79	79	82	85	88	91	96	89	93	100	100	99	98	91	88	90	93	92	88	101
18	Services	73	74	75	76	76	77	79	77	77	80	83	86	89	92	95	92	94	98	100	102	104	104	106	109	112	114	115	121
19	Imports	79	81	79	77	72	73	76	74	73	75	79	84	87	90	99	88	93	100	100	99	98	90	87	89	92	90	88	95
20	Goods	80	83	80	77	72	73	76	74	73	74	78	83	86	89	99	87	92	100	100	98	97	88	84	86	88	86	84	90
21	Services	70	72	74	74	72	75	74	73	75	80	84	87	90	93	98	94	96	99	100	102	104	103	103	105	108	109	110	116
22	**Government consumption expenditures and gross investment**	58	60	61	63	64	66	69	71	72	75	78	82	86	90	93	93	95	98	100	102	104	105	105	107	111	113	115	120
23	Federal	64	66	67	68	69	71	73	74	77	80	83	86	89	92	94	94	96	99	100	101	103	103	104	106	109	111	112	116
24	National defense	63	65	66	67	68	70	72	73	76	80	82	86	89	92	95	94	96	99	100	101	102	102	103	104	107	109	110	114
25	Nondefense	65	67	68	70	71	72	75	76	78	81	84	87	89	91	94	94	97	99	100	101	104	104	105	108	111	114	115	119
26	State and local	55	57	58	59	61	63	66	68	70	72	75	80	84	88	93	92	95	98	100	103	106	106	106	109	113	115	117	123
	Addendum:																												
27	Gross national product	70	72	73	74	75	76	78	80	81	83	85	87	90	93	94	95	96	98	100	102	104	105	106	108	110	112	114	---
		1.6155	1.5823	1.5539	1.5275	1.5106	1.4896	1.4566	1.4245	1.4026	1.3755	1.3395	1.2988	1.2599	1.2267	1.2037	1.1960	1.1818	1.1577	1.1365	1.1169	1.0964	1.0856	1.0748	1.0548	1.0302	1.0121	1.0000	
			2.10%	1.83%	1.72%	1.13%	1.41%	2.27%	2.25%	1.56%	1.97%	2.68%	3.14%	3.09%	2.70%	1.92%	0.64%	1.20%	2.08%	1.87%	1.75%	1.87%	1.00%	1.00%	1.90%	2.39%	1.79%	1.21%	4.16%
		1.0000	1.0210	1.0397	1.0576	1.0695	1.0846	1.1091	1.1341	1.1518	1.1745	1.2061	1.2439	1.2823	1.3169	1.3422	1.3508	1.3670	1.3954	1.4215	1.4464	1.4735	1.4882	1.5031	1.5317	1.5682	1.5963	1.6155	1.6827

Source: EMFAC2021 (v1.0.0) Emission Rates
Region Type: Statewide
Region: California
Calendar Year: 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Total VMT	CVMT	EVMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX	NH3_RUNEX	PM10_PMBW	PM2.5_PMBW
Statewide	2,019.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	213,179.86	213,179.86	-	3.06	0.06	0.06	1,474.76	0.00	0.23	0.08	0.09	0.32	0.01	0.19	0.07	0.03
Statewide	2,020.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	216,980.25	216,980.25	-	2.15	0.04	0.04	1,472.04	0.00	0.23	0.04	0.05	0.18	0.01	0.20	0.07	0.02
Statewide	2,021.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	221,288.84	221,288.84	-	1.63	0.03	0.03	1,461.81	0.00	0.23	0.03	0.03	0.11	0.01	0.21	0.07	0.02
Statewide	2,022.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	225,691.94	225,691.94	-	1.34	0.03	0.03	1,451.09	0.00	0.23	0.02	0.02	0.07	0.01	0.21	0.07	0.02
Statewide	2,023.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	228,442.33	228,442.33	-	0.99	0.02	0.03	1,433.40	0.00	0.23	0.01	0.01	0.05	0.01	0.22	0.07	0.02
Statewide	2,024.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	231,295.31	231,295.31	-	0.93	0.02	0.02	1,412.80	0.00	0.22	0.01	0.01	0.04	0.01	0.22	0.07	0.02
Statewide	2,025.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	235,931.71	235,931.71	-	0.89	0.02	0.02	1,390.35	0.00	0.22	0.01	0.01	0.04	0.01	0.22	0.07	0.02
Statewide	2,026.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	238,149.07	238,149.07	-	0.86	0.02	0.02	1,365.91	0.00	0.22	0.01	0.01	0.04	0.01	0.22	0.07	0.02
Statewide	2,027.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	234,670.90	234,670.90	-	0.84	0.02	0.02	1,336.78	0.00	0.21	0.01	0.01	0.04	0.01	0.22	0.07	0.02
Statewide	2,028.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	239,377.79	239,377.79	-	0.83	0.02	0.02	1,306.89	0.00	0.21	0.01	0.01	0.03	0.01	0.22	0.07	0.03
Statewide	2,029.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	244,189.03	244,189.03	-	0.82	0.02	0.02	1,278.34	0.00	0.20	0.01	0.01	0.03	0.01	0.22	0.07	0.03
Statewide	2,030.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	249,107.17	249,107.17	-	0.81	0.02	0.02	1,252.04	0.00	0.20	0.01	0.01	0.03	0.01	0.22	0.07	0.03
Statewide	2,031.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	256,631.79	256,631.79	-	0.80	0.02	0.02	1,228.59	0.00	0.19	0.01	0.01	0.03	0.01	0.22	0.07	0.03
Statewide	2,032.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	264,452.51	264,452.51	-	0.79	0.02	0.02	1,208.40	0.00	0.19	0.01	0.01	0.03	0.01	0.22	0.07	0.03
Statewide	2,033.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	269,572.13	269,572.13	-	0.79	0.02	0.02	1,191.43	0.00	0.19	0.01	0.01	0.03	0.01	0.22	0.07	0.03
Statewide	2,034.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	277,747.48	277,747.48	-	0.79	0.02	0.02	1,177.44	0.00	0.19	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,035.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	286,183.88	286,183.88	-	0.79	0.02	0.02	1,166.37	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,036.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	332,264.97	332,264.97	-	0.78	0.02	0.02	1,157.84	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,037.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	342,395.80	342,395.80	-	0.78	0.02	0.02	1,151.48	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,038.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	319,830.72	319,830.72	-	0.78	0.02	0.02	1,146.86	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,039.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	329,602.49	329,602.49	-	0.78	0.02	0.02	1,143.42	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,040.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	339,687.29	339,687.29	-	0.78	0.02	0.02	1,140.91	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,041.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	350,095.48	350,095.48	-	0.78	0.02	0.02	1,139.09	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,042.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	360,837.79	360,837.79	-	0.77	0.02	0.02	1,137.76	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,043.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	371,925.31	371,925.31	-	0.77	0.02	0.02	1,136.80	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,044.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	383,369.50	383,369.50	-	0.77	0.02	0.02	1,136.11	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,045.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	395,182.22	395,182.22	-	0.77	0.02	0.02	1,135.61	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,046.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	407,375.75	407,375.75	-	0.77	0.02	0.02	1,135.25	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,047.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	419,962.76	419,962.76	-	0.77	0.02	0.02	1,134.99	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,048.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	432,956.38	432,956.38	-	0.77	0.02	0.02	1,134.80	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,049.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	446,370.18	446,370.18	-	0.77	0.02	0.02	1,134.67	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03
Statewide	2,050.00	T7 NOOS Class 8	Aggregate	55.00	Diesel	460,218.20	460,218.20	-	0.77	0.02	0.02	1,134.58	0.00	0.18	0.01	0.01	0.03	0.01	0.22	0.08	0.03

MSC Agricultural Exports via NWSA
Year of 2021
Volumes in TEUs
Data Source: PIERS

	TEU	Share	
Non-Ag	13,301	31.00%	
Ag	29,404	69.00%	of MSC exports that are ag
Total	**42,705**	**100.00%**	

Ship Line Name	Commodity Group	TEU	
MEDITERRANEAN SHIPPING COMPANY	HAY & FORAGE	4,283	
MEDITERRANEAN SHIPPING COMPANY	FROZEN POTATO PRODUCTS	3,424	
MEDITERRANEAN SHIPPING COMPANY	LEGUMES (PEAS, BEANS, LENTILS)	3,273	
MEDITERRANEAN SHIPPING COMPANY	SCRAP PAPER	2,183	
MEDITERRANEAN SHIPPING COMPANY	OTHER FOODSTUFFS	1,848	
MEDITERRANEAN SHIPPING COMPANY	PORK	1,736	
MEDITERRANEAN SHIPPING COMPANY	APPLES	1,648	
MEDITERRANEAN SHIPPING COMPANY	BEEF	1,567	
MEDITERRANEAN SHIPPING COMPANY	SOYBEANS	1,477	
MEDITERRANEAN SHIPPING COMPANY	DAIRY PRODUCTS	1,377	
MEDITERRANEAN SHIPPING COMPANY	PAPER & PAPERBOARD	1,262	
MEDITERRANEAN SHIPPING COMPANY	FISH	774	
MEDITERRANEAN SHIPPING COMPANY	OTHER VEGETABLES	625	
MEDITERRANEAN SHIPPING COMPANY	POULTRY	527	
MEDITERRANEAN SHIPPING COMPANY	GRASS SEED	440	
MEDITERRANEAN SHIPPING COMPANY	CEREALS (EXCLUDING CORN)	428	
MEDITERRANEAN SHIPPING COMPANY	ANIMAL FEED	382	
MEDITERRANEAN SHIPPING COMPANY	PLANTS & FLOWERS	276	
MEDITERRANEAN SHIPPING COMPANY	WOOD PULP	185	
MEDITERRANEAN SHIPPING COMPANY	LUMBER	185	
MEDITERRANEAN SHIPPING COMPANY	FLOUR, MEAL & OTHER MILLED PRODUCTS	171	
MEDITERRANEAN SHIPPING COMPANY	FRESH POTATOES	166	
MEDITERRANEAN SHIPPING COMPANY	OTHER SEEDS	158	
MEDITERRANEAN SHIPPING COMPANY	PEARS, QUINCES	122	
MEDITERRANEAN SHIPPING COMPANY	LOGS	114	
MEDITERRANEAN SHIPPING COMPANY	OTHER FRUITS	109	
MEDITERRANEAN SHIPPING COMPANY	NUTS	109	
MEDITERRANEAN SHIPPING COMPANY	HOPS & HOP EXTRACT	102	
MEDITERRANEAN SHIPPING COMPANY	OTHER MEAT	96	
MEDITERRANEAN SHIPPING COMPANY	DRIED DISTILLERS GRAIN (DDGS)	66	
MEDITERRANEAN SHIPPING COMPANY	WINE	52	
MEDITERRANEAN SHIPPING COMPANY	SHELLFISH (CRUSTACEANS, MOLLUSKS)	44	
MEDITERRANEAN SHIPPING COMPANY	OTHER WOOD PRODUCTS	39	
MEDITERRANEAN SHIPPING COMPANY	OCTOPUS, SQUID, CUTTLE FISH	32	
MEDITERRANEAN SHIPPING COMPANY	SPIRITS & LIQUEURS	25	
MEDITERRANEAN SHIPPING COMPANY	OTHER ANIMAL PRODUCTS	20	
MEDITERRANEAN SHIPPING COMPANY	CORN	14	
MEDITERRANEAN SHIPPING COMPANY	COFFEE BEANS	13	
MEDITERRANEAN SHIPPING COMPANY	BOTTLED WATER	12	
MEDITERRANEAN SHIPPING COMPANY	PLYWOOD	10	
MEDITERRANEAN SHIPPING COMPANY	EXTRACTS	8	
MEDITERRANEAN SHIPPING COMPANY	FLOORING	8	
MEDITERRANEAN SHIPPING COMPANY	BEER	7	
MEDITERRANEAN SHIPPING COMPANY	FINISHED PAPER PRODUCTS	3	
MEDITERRANEAN SHIPPING COMPANY	FOOD STUFFS	2	
MEDITERRANEAN SHIPPING COMPANY	BASKETWARE	2	
Total		**29,404**	16,336

THE NORTHWEST
SEAPORT ALLIANCE
Gateway to Solutions
nwseaportalliance.com

May 12, 2022

The Honorable Pete Buttigieg, Secretary
United States Department of Transportation
1200 New Jersey Avenue SE
Washington, D.C. 20590-7202

RE: Letter of Commitment, Terminal 5 Export, Expansion, and Emissions Reduction Project

Dear Secretary Buttigieg:

I am very pleased to submit this application from the Northwest Seaport Alliance (NWSA)—an operating partnership between the ports of Seattle and Tacoma—to the 2022 Port Infrastructure Development Program (PIDP). The project will improve air quality in the region while updating the truck gate complex and expanding space for cargo containers at Port of Seattle's Terminal 5 (T-5). The project will reduce greenhouse gas emissions and enable T-5 to serve exporters with greater safety and efficiency.

In Washington state, the benefits will be considerable. The project will reduce greenhouses gas emissions by reducing truck waits and queuing on Seattle's Southwest Spokane Street, resulting in less truck idling. Additionally, the greater operational efficiencies from more yard space and a new gate complex will mean more loaded export containers and fewer empty export containers. The project will directly support exports of agricultural products from rural Eastern Washington, with benefits stretching far beyond Washington State. U.S. exporters from states including Oregon, Idaho, Montana, Minnesota, the Dakotas, and Iowa regularly depend on NWSA facilities as their fastest and most cost-effective option for time-sensitive agricultural products such as hay, apples, and potatoes. Expanding capacity and increasing efficiency at the NWSA increases access to international markets for U.S. farmers, as well as manufacturers and consumers.

As a sign of our dedication to the success of the proposed $26,259,500 project, the NWSA commits to a cost share of $9,201,325—a figure representing 35% of total eligible project costs. This investment is in addition to prior NWSA investment of over $300 million for the modernization of this terminal under a separate project. The entirety of the cost share will be funded through non-PIDP sources. The NWSA is pursuing other external funding opportunities, but if we are unable to secure funds from other sources, we are committed to funding the remaining balance through our own resources. We are aware that the maximum federal contribution for PIDP projects is 80%. Cost share from the NWSA will come from the Port of Seattle's cash on hand generated by the Port of Seattle's tax levy authority and related general obligation bonds.

If this project is awarded funding from the PIDP, the NWSA guarantees the availability of the staff and resources necessary to complete the activities described in the application. The NWSA is exceptionally well qualified to lead the proposed activities. As the nation's fifth largest container port complex overall and the top-ranked U.S. seaport for refrigerated exports, the NWSA team is capable not only of

planning such an ambitious and important project, but also of executing it in a timely, cost-effective manner. For these reasons and more, I urge you to fund the T-5 Export, Expansion, and Emissions Reduction Project. If you have any questions at all, please do not hesitate to contact me.

Sincerely,



John Wolfe, Chief Executive Officer
Northwest Seaport Alliance
1 Sitcum Way
Tacoma, Washington 98421

PORT OF TACOMA | **Engineering Estimate** | **Date: 5/13/2022**

PROJECT: T5 CY Expansion

Estimate By : Thais Howard 5/6/2022 5

No.	Description	Qty	Unit	Unit Price	Ext. Price	Component Costs	COMMENTS
	WORK COMPONENT ONE - Demo, Pave, Storm						
1	Mobilization	1	EA	100,000.00	100,000		
2	CFS Demo	1	LS	2,300,000.00	2,300,000		
3	CFS Area Pavement Restoration	1	LS	1,700,000.00	1,700,000		
4	Stormwater Infrastructure	6	Acre	175,000.00	1,050,000		
5	Demo fuel stations	2	EA	250,000.00	500,000		Allowance only
	SUBTOTAL				**5,150,000**		
	CONTINGENCY	40%		5,150,000.00	2,060,000		
	SUBTOTAL-CONSTRUCTION				**7,210,000**		
	WSST @ 10.3%	10.3%		7,210,000.00	742,630		
	Port Staff (PM)	8%		7,210,000.00	576,800		
	Design, Permitting, Construction Management	20%		7,210,000.00	1,442,000		
	Material Testing & Inspection Services	2%		7,210,000.00	144,200		
	WORK COMPONENT ONE - Demo, Pave, Storm : Total Estimated Costs					**$10,115,630**	
	WORK COMPONENT TWO - Grant Administration Costs						
1	Additional Permitting (i.e. NEPA)	1	LS	300,000.00	300,000		
2	Grant Administration	2%		10,115,630.00	202,313		
	SUBTOTAL				**502,313**		
	Contingency	10.0%		502,312.60	50,231		
	WORK COMPONENT TWO - Grant Administration Cost: : Total Estimated Costs					**$552,544**	
	TOTAL COSTS					**$10,669,000**	

kpff Consulting Engineers
1601 5th Avenue, Suite 1300
Seattle, Washington 98101

SSA Marine
A Carrix Enterprise

TERMINAL 5 GATE COMPLEX
DRAFT 60% ESTIMATE OF PROBABLE CAPITAL CONSTRUCTION COST

Project: Terminal 5 Gate Complex
Subject: DRAFT 60% Estimate of Probable Capital Construction Cost
Client: SSA Terminals LLC.
By: E. Nielsen, P.E., N. Watson, P.E.
Job # 2100019
Date: 18-Mar-22

DRAFT

			T5 Gate Complex		
ITEM NO.	DESCRIPTION OF SITE WORK	UNITS	QUANT	UNIT PRICE	TOTAL
1	Mobilization and Demobilization	LS	1	$ 849,000	$ 849,000
2	Survey	LS	1	$ 171,000	$ 171,000
3	Material Testing	LS	1	$ 120,000	$ 120,000
4	Temporary Erosion and Sediment Control	LS	1	$ 196,000	$ 196,000
5	Temporary Water Treatment and Disposal	LS	1	$ 353,000	$ 353,000
6	Temporary Stormwater Reroute	LS	1	$ 85,000	$ 85,000
7	Construction Dewatering	LS	1	$ 212,000	$ 212,000
8	Site Demolition	LS	1	$ 654,000	$ 654,000
9	Existing Gate Canopy Demolition	LS	1	$ 208,000	$ 208,000
10	Shoring and Trench Safety Systems	LS	1	$ 808,000	$ 808,000
11	Earthwork	LS	1	$ 744,589	$ 745,000
12	Soil Transportation and Disposal	TONS	16,454	$ 88	$ 1,448,000
13	Quarry Spalls	TONS	165	$ 77	$ 14,000
14	Crushed Surfacing Base Course	TONS	5,363	$ 79	$ 425,000
15	Bituminous Concrete Pavement	TONS	3,514	$ 203	$ 715,000
16	PCC Paving	CY	125	$ 750	$ 94,000
17	Storm Drainage Utilities	LS	1	$ 416,000	$ 416,000
18	Waterline Reroute	LS	1	$ 20,000	$ 20,000
19	Restroom Waterline	LS	1	$ 5,000	$ 5,000
20	Restroom Sanitary Sewer	LS	1	$ 59,000	$ 59,000
21	Bollards - 12-inch diam with rub rail	EA	51	$ 2,500	$ 128,000
22	Bollards - 6-inch diam with rub rail	EA	20	$ 1,900	$ 38,000
23	K-Rail	EA	302	$ 1,690	$ 511,000
24	Concrete Scale Pits, Curbs, and Pedestals	LS	1	$ 773,607	$ 773,700
25	Trouble Parking Restroom Foundation	LS	1	$ 18,000	$ 18,000
26	Pavement Markings	LS	1	$ 57,000	$ 57,000
27	Electrical	LS	1	$ 623,000	$ 623,000
28	Phasing and Temporary Striping	LS	1	$ 27,000	$ 27,000
29	Unknown Obstructions	FA	1	$ 30,000	$ 30,000
30	Covid-19 Safety Allowance	ALLOW	1	$ 30,000	$ 30,000
	Contractor Subtotal (Base):				**$ 9,832,700**
31	Contingency		15%		$ 1,475,000
32	Washigton Sales Tax (10.25%)		10.25%		$ 1,008,000
33	**Contractor Subtotal (Base+WSST):**				**$ 12,316,000**
	Owner Furnished Items:				
34	Tideworks Equipment				$ 20,000
35	Truck Scales and Equipment relocation				$ 80,000
36	Trouble Parking Restroom Facility (Romtec)				$ 125,000
37	Trouble Parking Restroom Facility Installation (Romtec)				$ 175,000
38	**Owner Furnished Items Subtotal:**				**$ 400,000**
39	**Base Scope Subtotal :**				**$ 12,716,000**
	SSA Additional Items for 4 future scales				
11'	*Additional Excavation Required for Future Scales*	CY	607	$ 60	$ 36,411
12'	*Additional Soil Transportation and Disposal for Future Scales*	TONS	1,153	$ 88	$ 101,466
24'	*Additional Concrete Scale Pits, Curbs, and Pedestals*	LS	1	$ 101,393	$ 101,393
40	**SSA Added Items Construction Subtotal**				**$ 239,270**
41	Contingency		15%		$ 36,000
42	Washigton Sales Tax (10.25%)		10.25%		$ 25,000
43	**SSA Added Items Subtotal (Base+WSST):**				**$ 300,270**
44	**T5 Gate Complex Total (Base Scope + SSA Additional):**				**$ 13,017,000**
45				-5%	$ 12,367,000
46	**Total Construction**			5%	**$ 13,668,000**
47	**Design, Permitting, and Construction Management and Inspection**				$ 1,922,500
	TOTAL PROJECT			**5%**	**$ 15.590.500**

NOTES:

General	All unit rates and lump sum values are fully loaded inclusive of all contractor overhead and profit.
General	Totals are rounded up to the nearest one thousand.
General	All unit prices have been escalated approximately 6% to an assumed construction year 2023.
General	Owner furnished items include sales tax and contingency
1	Mobilization is assumed to be 9.5% based on previous T5 Bid Tabs and WSDOT mobilization criteria.
12	Assume all excavated material will be Subtitle D disposal and no on site material will be reused as backfill unless otherwise noted.
31	Tideworks Equipment cost is a placeholder for additional Fiber Switches required to utilize existing fiber from M&R Shop to Admin Bldg
43	SSA Added Items will be part of the contractors bid, but separated here for reimbursement negotiation.
44	T5 Gate Complex Total is a summation of line items 39 and 43
45-46	Cost estimate is consistent with a Class 1/2 estimate per the AACE Cost Classification System. A +5% to -5% range has been applied to the project site work.

Letters of Support
NWSA Terminal 5 Export, Expansion, and Emissions Reduction Project

1. (WTA) Washington Trucking Associations
2. Ace Hardware
3. Anderson Hay and Grain Company
4. CBIFFAWS (Customs & Brokers Freight Forwarders Association of Washington State)
5. Congress Member Adam Smith
6. Congress Member Derek Kilmer
7. Congress Member Marilyn Strickland
8. Congress Member Pramila Jayapal
9. Congress Member Suzan K DelBene
10. George F. Brocke & Sons, INC
11. Lamb Weston
12. Maviga
13. Nippon Dynawave Packaging Co.
14. PMSA (Pacific Merchant Shipping Association)
15. PNWA (Pacific Northwest Waterways Association)
16. Port of Seattle
17. Puget Sound Pilots
18. Puget Sound Regional Council
19. Ray-Mont Logistics America Inc
20. Rockline Industries
21. SB&B Foods LLC
22. SDOT (Seattle Department of Transportation)
23. Spokane Seed Company
24. State Representative Brad Klippert
25. The Home Depot
26. The TJX Companies, Inc.
27. Washington State Potato Commission
28. Washington State Representative Joe Fitzgibbon
29. Washington State Representative Tom Dent
30. Washington State Senator Bob Hasegawa
31. Washington State Senator Curtis King
32. Washington State Senator Joe Nguyen
33. Washington State Senator Judy Warnick
34. Washington Trucking Associations

35. WCIT (Washington Council on International Trade)
36. WSDOT (Washington State Department of Transportation)

Dale Lemmons
Chairman
Signature Transport, Inc
President

Matt Ewers
1st Vice Chair
IEDS Logistics
Sr. Vice President

Mark Miller
2nd Vice Chair
MacMillan-Piper
President/CEO

Mike Young
3rd Vice Chair
Cummins Sales & Service
Sales Director

Steve Holtgeerts
Secretary/Treasurer
Hogland Transfer Co., Inc
President

Brent Vander Pol
Immediate Past President
Peninsula Truck Lines, Inc
President

Tom Walrath, Jr
ATA State VP
T.E. Walrath Trucking, Inc
President

Jeff Bosma
Legislative Committee Chair
Fast Way Freight Systems, Inc
President

Sheri Call
Washington Trucking Associations
President/CEO

WASHINGTON TRUCKING ASSOCIATIONS
ESTABLISHED IN 1922

May 11, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

The Washington Trucking Associations (WTA) supports the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project. The reconfiguration of the truck gate complex and yard expansion will allow for a more efficient flow of trucks, better utilization of driver's limited time, and a reduction in emissions.

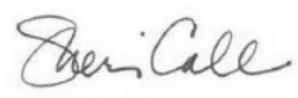
WTA is supported by member companies who range in size from small, single truck operators to Fortune 500 companies, as well as the businesses that provide them with products and services. Our members play a key role in deciding what issues we focus on, making WTA highly engaged with the needs and perspectives of the trucking community of Washington State. Trucking is in the vanguard of the supply chain, often seeing and feeling the impact of changes large and small far before others.

Our members frequently experience a lack of queuing space at T-5. This creates operational hardships and commonly leads to additional costs for the movement of goods. The construction of an expanded queuing area will permit drivers to use their time more effectively and help the terminal operator increase cargo velocity.

Drivers hauling export containers have struggled for many years with shifting ERDs (earliest receiving date) and, often, a lack of receiving space. Over the past several years, changes in the containerized cargo market have exacerbated the challenges. Six acres of additional container yard space specifically for exports will have significant positive impact for truck drivers and exporters. Exports historically have been a crucial component in balancing the gateway for fast and efficient cargo movement. Further, an additional six acres will provide a buffer against volatile vessel schedules.

The proposed improvements by Northwest Seaport Alliance are necessary with a positive significant impact on 3,600 plus active truck drivers and 662 companies servicing the gateway and Terminal 5. Given the need and the significate positive impact we strongly urge you to consider the 2022 U.S. Department of Transportation PIDP grant application submitted by NWSA for its Terminal 5 Export, Expansion and Emission Reduction Project. My team is available to answer any questions you may have.

Sincerely,



Sheri Call President/CEO
sheri@watrucking.org
o (253) 838-1650 c (253) 569-8310

DocuSign Envelope ID: 7290830C-0356-46EC-A748-A08078B0D7E0

Ace Hardware Corporation *2200 Kensington Court*
Oak Brook, IL 60523
630-990-6600

May 5, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

On behalf of Ace Hardware Corporation, I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

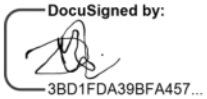
The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The

DocuSign Envelope ID: 7290830C-0356-46EC-A748-A08078B0D7E0

Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,



Duncan McGhie

VP International Merchandising, Import, and Proprietary

Ace Hardware Corporation

ANDERSON

PIONEERING DEPENDABLE OPPORTUNITIES FOR AGRICULTURE WORLDWIDE

P.O. BOX 99 910 S. ANDERSON ROAD ELLENSBURG, WA 98926 PHONE 509-925-9818 FAX 509-214-6235

May 12, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Anderson Hay and Grain Co., Inc is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Mark T. Anderson
CEO/President
Anderson Hay and Grain Co., Inc.

CBIFFAWS

May 9, 2022

The Honorable Pete Buttigieg

U.S. Secretary of Transportation

1200 New Jersey Ave, SE

Washington, DC 20590

United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

CBIFFAWS -Customs & Brokers Freight Forwarders Association of Washington State. is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Michele Taylor,

President CBIFFAWS

ADAM SMITH
9TH DISTRICT, WASHINGTON
2264 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-8901

COMMITTEE ON ARMED SERVICES
CHAIRMAN

Congress of the United States
House of Representatives
Washington, DC 20515–4709

DISTRICT OFFICE

15 SOUTH GRADY WAY, SUITE 101
RENTON, WA 98057
(425) 793-5180
TOLL FREE 1-888-SMITH09
http://adamsmith.house.gov
http://twitter.com/RepAdamSmith
https://www.facebook.com/RepAdamSmith

May 6, 2022

The Honorable Secretary Pete Buttigieg
U.S. Department of Transportation
1200 New Jersey Ave, S.E.
Washington, D.C. 20590

Dear Secretary Buttigieg,

I am writing to express my strong support for Northwest Seaport Alliance's (NWSA) application for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant. NWSA's Terminal 5 Export, Expansion, and Emission Reduction project would support NWSA in improving the efficiency and sustainability of vital Port operations. This project would allow NWSA to further their goal of improve the movement of goods through the Port in a safe, efficient, and reliable manner.

The NWSA is the fourth largest container gateway in the United States, uniting both the Port of Seattle and the Port of Tacoma. It plays a vital role in Washington State's economy, providing over 58,000 jobs and driving $12.4 billion in economic activity. Their proposed project will increase the alliance's strong role in Washington's economy by improving the location's truck gate complex and expanding its terminal container yard. By constructing 12 new inbound truck lanes and increasing their truck scale capacity, the NWSA's project will expedite their export process and improve their expedite capacity. Further, by expanding their terminal container yard by 5.4 acres, the NWSA plans to improve on previous logistical challenges they have faced, which will aid them in increasing the Port's output.

In addition to improving their contributions to Washington State's economy, the NWSA's project also aims to support the movement toward more sustainable Port infrastructure. By increasing the capacity of their truck gate complex, the NWSA aims to reduce traffic congestion caused by Port intake. This will decrease the overall amount of carbon emissions caused by congestion and work toward the NWSA's goal of running a more sustainable operation.

Thank you for your attention to this grant request. I urge you to give their application full and fair consideration, following all applicable rules and regulations. If you have any questions regarding this request, please contact Jena Yang, Grants Coordinator at (425) 793-5180.

Sincerely,



Adam Smith
Member of Congress

PRINTED ON RECYCLED PAPER

DEREK KILMER
6TH DISTRICT, WASHINGTON

COMMITTEE ON APPROPRIATIONS
DEFENSE SUBCOMMITTEE
INTERIOR, ENVIRONMENT, AND RELATED AGENCIES SUBCOMMITTEE
ENERGY AND WATER DEVELOPMENT SUBCOMMITTEE

Congress of the United States
House of Representatives
Washington, DC 20515-4706

OFFICES:
2059 RAYBURN OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5916

950 PACIFIC AVENUE
SUITE 1230
TACOMA, WA 98402
(253) 272-3515

345 6TH STREET
SUITE 500
BREMERTON, WA 98337
(360) 373-9725

www.kilmer.house.gov

May 11, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

I am pleased to write in support of the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This project will support the PIDP's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the project will increase the volume and efficiency of exports, principally agricultural exports, while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, it will also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

This proposal is a strong next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I am pleased to write in support of this proposal and urge your full and fair consideration. Should you have any questions, please contact Andrea Roper in my district office at andrea.roper@mail.house.gov.

Sincerely,

Derek Kilmer
Member of Congress

CONGRESSWOMAN MARILYN STRICKLAND
10TH DISTRICT, WASHINGTON

U.S. House of Representatives
Washington, DC 20515

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON MILITARY PERSONNEL
SUBCOMMITTEE ON READINESS
HOUSE COMMITTEE ON TRANSPORTATION & INFRASTRUCTURE
SUBCOMMITTEE ON HIGHWAYS AND TRANSIT
SUBCOMMITTEE ON RAILROADS, PIPELINES AND HAZARDOUS MATERIALS (VICE CHAIR)

May 10, 2022

The Honorable Pete Buttigieg
Secretary
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I am pleased to express my support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project (Project) at the Port of Seattle.

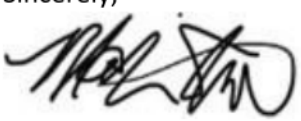
This project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port, thus helping our ports stay competitive. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing. As I understand it, reducing carbon emissions is a key priority at the Department of Transportation as well as helps the Port advance its zero carbon emissions by 2050.

To remain economically competitive and keep these family-wage jobs in the Pacific Northwest, increasing exports not only helps our nation's exporting industries, but also helps restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe. The Project allows NWSA to better compete against increasing international competition. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy. While this project is not in Washington's 10th Congressional District, NWSA supports working American families and small and large businesses across the South Puget Sound – underscoring its regional significance to our economy and to our working families.

This project is the next step in modernizing a key U.S. trade gateway by leveling the playing field between U.S. and Canadian seaports and supply chains. I am proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and to maintain internationally competitive Ports to support our hardworking American families.

Please give this project full and fair consideration.

Sincerely,



Congresswoman Marilyn Strickland (WA-10)

PRAMILA JAYAPAL
7TH DISTRICT, WASHINGTON

HOUSE COMMITTEE ON THE JUDICIARY
MEMBER, SUBCOMMITTEE ON IMMIGRATION AND CITIZENSHIP
VICE CHAIR, SUBCOMMITTEE ON ANTITRUST, COMMERCIAL, AND ADMINISTRATIVE LAW

HOUSE COMMITTEE ON THE BUDGET

HOUSE COMMITTEE ON EDUCATION AND LABOR
MEMBER, SUBCOMMITTEE ON HIGHER EDUCATION AND WORKFORCE INVESTMENT
MEMBER, SUBCOMMITTEE ON WORKFORCE PROTECTIONS

Congress of the United States
House of Representatives
Washington, DC 20515-4707

2346 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-3106

1904 3RD AVENUE
SUITE 510
SEATTLE, WA 98101
(206) 674-0040

May 2, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

Dear Secretary Buttigieg:

I am writing to express my strong support for the Northwest Seaport Alliance's (NWSA) application to the U.S. Department of Transportation's Port Infrastructure Development Program for the Terminal 5 Export, Expansion and Emission Reduction project.

NWSA is a marine cargo operating partnership of the Port of Seattle and the Port of Tacoma, representing the fourth-largest container gateway in the United States. It manages the container, breakbulk, auto and some bulk terminals in Seattle and Tacoma.

The Terminal 5 Export, Expansion and Emission Reduction project will improve the safety, efficiency, and reliability of the movement of goods through the port. The increased volume of exports resulting from the project will increase our country's competitiveness and benefit the supply chain. It will serve to increase the efficiency of exports (primarily agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing. The NWSA set a goal to achieve zero carbon emissions by 2050, demonstrating leadership in proactively addressing climate change and achieving environmental justice. The project will help NWSA accomplish their goal while supporting 58,400 jobs and more than $4 billion in labor income across the state.

This project is a significant port infrastructure investment that improves the competitiveness of a key U.S. trade gateway. That is why I strongly support the Northwest Seaport Alliance's application for the U.S. Department of Transportation's Port Infrastructure Development Program. Please do not hesitate to contact my office at (206) 674-0040 if you have any questions about my support for this grant application.

Sincerely,



PRAMILA JAYAPAL
Member of Congress

PRINTED ON RECYCLED PAPER

REP. SUZAN K. DELBENE
1ST DISTRICT, WASHINGTON
2330 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225–6311

450 CENTRAL WAY, SUITE 3100
KIRKLAND, WA 98033
(425) 485–0085

204 W. MONTGOMERY ST.
MOUNT VERNON, WA 98273
(360) 416–7879

WWW.DELBENE.HOUSE.GOV

WAYS AND MEANS COMMITTEE, VICE CHAIR
SUBCOMMITTEE ON SELECT REVENUE MEASURES
SUBCOMMITTEE ON TRADE

Congress of the United States
House of Representatives

May 11, 2022

The Honorable Pete Buttigieg
Secretary, U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 25090

Dear Secretary Buttigieg:

I write in support for the Northwest Seaport Alliance's (NWSA) application to the *U.S. Department of Transportation's (USDOT) Port Infrastructure Development Program (PIDP)* for the Terminal 5 Export, Expansion, and Emissions Reduction project. This funding would allow the NWSA to better compete internationally while also meeting its goal of zero carbon emissions by 2050. Currently the NWSA's marine cargo operations support 58,400 jobs and more than $4 billion in labor income across Washington state's economy.

The Terminal 5 project would support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods. It would increase the volume and efficiency of exports, most significantly agricultural exports, while reducing carbon emissions through both electrification and reduced truck queuing. Increasing exports will not only help our nation's exporting industries, but also aid in restoring balance to the supply chain and empty shipping container access for U.S. agricultural producers and other exporters that ship products globally. Key components of the project include construction of a new truck gate complex aimed at reducing traffic congestion and emissions, development of a new container yard, and a 5.4 acre terminal expansion.

The NWSA has been a national leader in proactively addressing climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. This project is a key next step in modernizing a critical U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. For these reasons, I request your full and fair consideration of the Northwest Seaport Alliance's application for funding through the *Port Infrastructure Development Program*.

Thank you for your attention to this matter.

Sincerely,



Suzan K. DelBene
Member of Congress, WA-01

GEORGE F. BROCKE & SONS, Inc.

Wholesale Distributors Since 1950

Phone: (208)289-4231
Fax: (208)289-4242
Email: bbrocke@gfbrocke.com
Website: www.gfbrocke.com
P.O. Box 159
Kendrick, ID 83537-0159

May 3, 2022

The Honorable Pete Buttigieg

U.S. Secretary of Transportation

1200 New Jersey Ave, SE

Washington, DC 20590

United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

George F. Brocke & Sons, Inc. is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Berton Brocke

President

LambWeston
SEEING POSSIBILITIES IN POTATOES

Lamb Weston
8701 W. Gage Blvd.
Kennewick, WA 99336

T 509 735 0393
lambweston.com

May 10, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

LambWeston is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Jonathan Sistrunk

Director Logistics Services LambWeston

MAVIGA

An ED&F Man Company

May 9, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Maviga N.A., Inc is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Michael R Quann
Director

Maviga NA Inc.
The Edge, 103 East Sprague,
Suite 101, Spokane,
Washington 99202, USA

Tel: +1 509 747 6000
Fax: +1 509 747 6789
Email: mquann@mavigana.com
Website: www.maviga.com

NIPPON DYNAWAVE PACKAGING CO.

3401 Industrial Way – PO Box 188 – Longview WA 98632

May 11, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Nippon Dynawave Packaging Co., LLC., is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

John Carpenter
President

PMSA
PACIFIC MERCHANT SHIPPING ASSOCIATION

May 13, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

On behalf of the members of the Pacific Merchant Shipping Association (PMSA), I am pleased to support the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project. PMSA represents shipping lines and marine terminal operators that serve the West Coast of the United States.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port of Seattle. The Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

The Terminal 5 Project will allow NWSA to better compete against international competition. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

Thank you for the opportunity to comment on this important project.

Sincerely,

Jordan Royer
Vice President for External Affairs

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

On behalf of the Pacific Northwest Waterways Association (PNWA), I write in support of the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

PNWA has over 150 members, including ports, barge companies, steamship operators, grain elevator operators, agricultural producers, electric utilities, irrigation districts, and union labor throughout Washington, Oregon, and Idaho. Our association supports projects to advance and protect the region's navigation infrastructure, freight mobility, economic health, and the environment.

Projects like The NWSA Terminal 5 expansion help support the region's multi-modal transportation system, and provide critical links to competitive domestic and world markets. This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port and as demonstrated in the application, will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Heather Stebbings
Executive Director

4224 NE Halsey Street, Suite 325
Portland, OR 97213

Telephone: 503-234-8550
Fax: 503-234-8555

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

On behalf of the Port of Seattle, I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

The Port of Seattle is a special purpose government representing the people of King County, Washington; among its properties is the marine harbor in Seattle, which is operated by the NWSA – a partnership of the Ports of Tacoma and Seattle, which together represent the fourth-largest container gateway in the United States. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing. We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains.

This project will also support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the NWSA. Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

We urge you to fully fund the NWSA's application to the PIDP grant program.

Sincerely,



Commissioner Ryan Calkins
Commission President
Port of Seattle

PUGET SOUND PILOTS
Protecting Puget Sound Since 1935

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Puget Sound Pilots is the organization that helps provide state-mandated pilotage services to certain U.S. and all foreign flagged vessels calling Puget Sound. We represent approximately 50 master mariners that protect the port and the environment from a threat of a marine casualty and to ensure the safe and orderly flow of maritime commerce into our waters. Puget Sound Pilots serve the entire diverse mix of ships entering and exiting Puget Sound -- container ships, bulk cargo carriers, large fishing/processor vessels, and cruise ships. Puget Sound Pilots is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety,

PUGET SOUND PILOTS
Protecting Puget Sound Since 1935

2003 Western Ave.
Suite 200
Seattle, WA 98121

PHONE (203) 980-3051
EMAIL ccostanzo@pspilots.org
WEBSITE www.pspilots.org

efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

Puget Sound Pilots strongly endorses this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,



Charles Costanzo
Executive Director

Puget Sound Regional Council
1011 WESTERN AVENUE, SUITE 500 \\\ SEATTLE, WA 98104•1035 \\\ psrc.org \\\ 206•464•7090

May 12, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

The Puget Sound Regional Council (PRSC), the central Puget Sound region's federally designated Metropolitan Planning Organization, is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

The Seattle metropolitan area is among the United States' top five goods exporters. As one of the world's global gateways and major entry points into North America, the freight system in the Pacific Northwest reaches far beyond the region's boundaries. The Terminal 5 project is within the regionally designated Duwamish Manufacturing/Industrial Center—one of the largest and most intensely developed manufacturing/industrial areas in the Pacific Northwest.

The Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods. Further, the project aligns with long-range regional planning goals included in PSRC's VISION 2050 plan for growth to maintain and support ports and freight, reduce GHG emissions and improve freight movement.
Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to

proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Josh Brown, Executive Director
Puget Sound Regional Council

Ray-Mont Logistics America Inc.
300 N Mullan Suite 101
Spokane Valley, WA 99206
Phone 1-888-933-4449-Ext 2906
FMC Lic. No. 024033NF

May 11, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Ray-Mont Logistics America Inc is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Teri Zimmerman Reynolds

TERI ZIMMERMAN-REYNOLDS
General Manager
Ray-Mont Logistics America Inc.
FMC Lic No.024033NF
300 N. Mullan Suite 101, Spokane Valley, WA, 99206
P +1-888-933-4449 x5000 C 1 509-280-6301 W www.ray-mont.com

rockline®
people who make it right

May 9th, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590 United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Rockline Industries, Inc. is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Chad Ellis

Chad Ellis
Global Transportation Manager
Rockline Industries, Inc.
813 S. Commerce St.
Sheboygan, WI 53081

May 5, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

SB&B Foods, LLC is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Robert B. Sinner, President
SB&B Foods, LLC

SB&B Foods • PO Box 549, Casselton, North Dakota 58012 • 701-347-4900 • Fax: 701-347-4462

Seattle
Department of
Transportation

May 13, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

The Seattle Department of Transportation is pleased to convey our support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

The Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through NWSA's Terminal 5 facility. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing truck queuing outside the terminal gates which often impacts both freight and commuter traffic on a key arterial between the West Seattle peninsula and rest of Seattle.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also helping NWSA meet its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

for Kristen Simpson
Seattle Department of Transportation
Interim Director

TELEPHONE - 509-535-3671

FAX - 509-535-0874

SPOKANE SEED COMPANY

Growers and Processors of Seed and Commercial Peas and Lentils

6015 East Alki Avenue P.O. Box 11007 Spokane, WA. U.S.A. 99211-1007

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Spokane Seed Company is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Andrew J.J. Fontaine

President Spokane Seed Company

STATE REPRESENTATIVE
8th LEGISLATIVE DISTRICT
BRAD KLIPPERT

State of
Washington
House of
Representatives

PUBLIC SAFETY
ASSISTANT RANKING MEMBER
CHILDREN, YOUTH & FAMILIES
CIVIL RIGHTS & JUDICIARY

May 11, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports).

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I fully support this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I support the full funding of the Port's application to the PIDP grant program.

Sincerely,

Bradley A. Klippert

Rep. Brad Klippert

State Representative, 8th Legislative District

LEGISLATIVE OFFICE: 122a LEGISLATIVE BUILDING, PO BOX 40600, OLYMPIA, WA 98504-0600 • 360-786-7882
E-MAIL: Brad.Klippert@leg.wa.gov
TOLL-FREE LEGISLATIVE HOTLINE: 1-800-562-6000 • TDD: 1-800-635-9993

PRINTED ON RECYCLED PAPER

1155 F Street, N.W. • Suite 400 • Washington, DC 20004

May 10, 2022

The Honorable Pete Buttigieg, Secretary of Transportation
US Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Secretary Buttigieg:

As the world's largest home improvement retailer and the country's third-largest importer, The Home Depot is pleased to express support for The Northwest Seaport Alliance (NWSA)'s 2022 grant application for the US Department of Transportation Port Infrastructure Development Program (PIDP) to support the NWSA's Terminal 5 Export, Expansion and Emission Reduction Project. This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port and will increase the volume and efficiency of exports while reducing carbon emissions through reduced truck queuing.

With six distribution centers in Washington, THD sees the value of increasing investments in NWSA marine cargo operations. As a partner to the Administration and White House on addressing supply chain disruption, we understand the importance of helping to restore balance in the supply chain. Updating and streamlining NWSA operations are critical to help achieve these goals and support the more than 58,400 jobs these operations employ.

We strongly endorse this project as a next step in modernizing a key US trade gateway and levelling the playing field between US and Canadian seaports and supply chains. The pandemic-era surge in consumer demand exposed weaknesses in our nation's supply chain. Expanding port capacity, safety, and reliability is essential to avoiding further disruption as well as growing US business. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Sarah Galica
Vice President – Transportation
The Home Depot

THE TJX COMPANIES, INC.

May 12, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

The TJX Companies, Inc. is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

We understand that the Project is anticipated to support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. The Project is also expected to increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

We believe that increasing exports will not only help our nation's exporting industries, but will also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA has stated that its marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

We endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Raina Avalon
Executive Vice President, Logistics

300 Value Way, Marlborough, MA 01752

WASHINGTON STATE POTATO COMMISSION
108 INTERLAKE ROAD, MOSES LAKE, WA 98837
PH: 509 765-8845 FAX: 509 765-4853 WWW.POTATOES.COM

5/12/2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Dear Secretary Buttigieg:

We support the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

This project is a necessary next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Matt Harris
Director of Governmental Affairs
Washington State Potato Commission

STATE REPRESENTATIVE
34th LEGISLATIVE DISTRICT
JOE FITZGIBBON

State of
Washington
House of
Representatives

ENVIRONMENT & ENERGY
CHAIR
APPROPRIATIONS
RURAL DEVELOPMENT,
AGRICULTURE &
NATURAL RESOURCES

May 2, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I am particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. I urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Joe Fitzgibbon

Representative Joe Fitzgibbon
Washington State Legislature
34th Legislative District

LEGISLATIVE OFFICE: 320 JOHN L. O'BRIEN BUILDING • PO BOX 40600 • OLYMPIA, WA 98504-0600 • 360-786-7952
E-MAIL: Joe.Fitzgibbon@leg.wa.gov
TOLL-FREE LEGISLATIVE HOTLINE: 1-800-562-6000 • TTY: 1-800-833-6388 • www.leg.wa.gov

PRINTED ON RECYCLED PAPER

STATE REPRESENTATIVE
13th LEGISLATIVE DISTRICT
TOM DENT

State of
Washington
House of
Representatives

HUMAN SERVICES &
EARLY LEARNING
RANKING MINORITY MEMBER

RURAL DEVELOPMENT,
AGRICULTURE, &
NATURAL RESOURCES
ASSISTANT RANKING MINORITY
MEMBER

TRANSPORTATION

May 9, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: **Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project**

Dear Secretary Buttigieg:

I Representative Tom Dent am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I am particularly proud of the national leadership that the NWSA has taken to proactively address this serious issue. I urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Tom Dent

Representative Tom Dent
13th Legislative District

Washington State Senate

Address:
305 Legislative Building
PO Box 40411
Olympia, WA 98504-0411

Senator Bob Hasegawa

Majority Caucus Chair
11th Legislative District

11th Legislative District
Phone: (360) 786-7616
E-mail: Bob.Hasegawa@leg.wa.gov
senatedemocrats.wa.gov/hasegawa/

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I strongly endorse this project as a next step in modernizing a key U.S. trade gateway and leveling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. I urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,



Senator Bob Hasegawa
SENATE DEMOCRATIC CAUCUS CHAIR
11TH LEGISLATIVE DISTRICT

Washington State Senate

Olympia Address:
PO Box 40414
Olympia, WA 98504-0414
E-mail: curtis.king@leg.wa.gov

Senator Curtis King
14th Legislative District

Telephone:
(360) 786-7626
Toll-Free: 1-800-562-6000

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave. SE
Washington, DC 20590
United States

Re: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I respectfully urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,



Senator Curtis King
14th Legislative District
curtis.king@leg.wa.gov

Washington State Senate

Senator Joe Nguyen
Assistant Majority Floor Leader
34th Legislative District

Olympia Address:
235 John A. Cherberg Building
Olympia, WA 98504-0434

Phone: (360) 786-7667
Hotline: 1-800-562-6000
TTY: 1-800-833-6388
Joe.Nguyen@leg.wa.gov

May 2, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

I am pleased to express my support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I am particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. I urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,

Joe Nguyen

State Senator, 34th Legislative District

Olympia office:
103 Irv Newhouse Building
PO Box 40413
Olympia, WA 98504-0413
E-mail: Judy.Warnick@leg.wa.gov
Olympia phone: (360) 786-7624
Olympia fax: (360) 786-7815

Washington State Senate

Senator Judith "Judy" Warnick
13th Legislative District

District office:
326 South Cedar Street
Moses Lake, WA 98837
District phone: (509) 766-6505
Toll-free hotline: 1-800-562-6000
TTY: 1-800-833-6388

May 3, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg,

As the 13th District Senator, I am pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through both electrification and reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. **NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.**

I strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. I am particularly proud of the national leadership that the NWSA has taken to proactively address climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. I urge you to fully fund the Port's application to the PIDP grant program.

Thank you for your consideration.

Sincerely,

Judy Warnick

Senator Judy Warnick
13th Legislative District

Dale Lemmons
Chairman
Signature Transport, Inc
President

Matt Ewers
1st Vice Chair
IEDS Logistics
Sr. Vice President

Mark Miller
2nd Vice Chair
MacMillan-Piper
President/CEO

Mike Young
3rd Vice Chair
Cummins Sales & Service
Sales Director

Steve Holtgeerts
Secretary/Treasurer
Hogland Transfer Co., Inc
President

Brent Vander Pol
Immediate Past President
Peninsula Truck Lines, Inc
President

Tom Walrath, Jr
ATA State VP
T.E. Walrath Trucking, Inc
President

Jeff Bosma
Legislative Committee Chair
Fast Way Freight Systems, Inc
President

Sheri Call
Washington Trucking Associations
President/CEO

WASHINGTON TRUCKING ASSOCIATIONS
ESTABLISHED IN 1922

May 11, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

The Washington Trucking Associations (WTA) supports the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project. The reconfiguration of the truck gate complex and yard expansion will allow for a more efficient flow of trucks, better utilization of driver's limited time, and a reduction in emissions.

WTA is supported by member companies who range in size from small, single truck operators to Fortune 500 companies, as well as the businesses that provide them with products and services. Our members play a key role in deciding what issues we focus on, making WTA highly engaged with the needs and perspectives of the trucking community of Washington State. Trucking is in the vanguard of the supply chain, often seeing and feeling the impact of changes large and small far before others.

Our members frequently experience a lack of queuing space at T-5. This creates operational hardships and commonly leads to additional costs for the movement of goods. The construction of an expanded queuing area will permit drivers to use their time more effectively and help the terminal operator increase cargo velocity.

Drivers hauling export containers have struggled for many years with shifting ERDs (earliest receiving date) and, often, a lack of receiving space. Over the past several years, changes in the containerized cargo market have exacerbated the challenges. Six acres of additional container yard space specifically for exports will have significant positive impact for truck drivers and exporters. Exports historically have been a crucial component in balancing the gateway for fast and efficient cargo movement. Further, an additional six acres will provide a buffer against volatile vessel schedules.

The proposed improvements by Northwest Seaport Alliance are necessary with a positive significant impact on 3,600 plus active truck drivers and 662 companies servicing the gateway and Terminal 5. Given the need and the significate positive impact we strongly urge you to consider the 2022 U.S. Department of Transportation PIDP grant application submitted by NWSA for its Terminal 5 Export, Expansion and Emission Reduction Project. My team is available to answer any questions you may have.

Sincerely,



Sheri Call President/CEO
sheri@watrucking.org
o (253) 838-1650 c (253) 569-8310

WCIT

WASHINGTON COUNCIL ON INTERNATIONAL TRADE

May 5, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

Washington Council on International Trade (WCIT) is pleased to express support for the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We strongly endorse this project as a next step in modernizing a key U.S. trade gateway and levelling the playing field between U.S. and Canadian seaports and supply chains. We are particularly proud of the national leadership that the NWSA has taken to proactively address

climate change, environmental justice, and racial equity issues—well in advance of the current federal guidance in these areas. The Port has plans and programs with measurable outcomes in these areas. We urge you to fully fund the Port's application to the PIDP grant program.

Sincerely,



Lori Otto Punke
President

Washington State Department of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300
360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

May 9, 2022

The Honorable Pete Buttigieg
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Support for the NWSA Terminal 5 Export, Expansion and Emission Reduction Project

Dear Secretary Buttigieg:

The Washington State Department of Transportation supports the 2022 U.S. Department of Transportation Port Infrastructure Development Program (PIDP) grant application submitted by The Northwest Seaport Alliance (NWSA) for its Terminal 5 Export, Expansion and Emission Reduction Project.

This Project will support the PIDP program's goals of improving the safety, efficiency, and reliability of the movement of goods through the Port. As demonstrated in the application, the Project will increase the volume and efficiency of exports (principally agricultural exports) while reducing carbon emissions through reduced truck queuing.

Increasing exports will not only help our nation's exporting industries, but also help restore balance to the overall supply chain and empty container access for U.S. agricultural producers and other exporters that ship their products across the globe.

The Terminal 5 Project will allow NWSA to better compete against international competition while also meeting its goal of zero carbon emissions by 2050. NWSA marine cargo operations currently support 58,400 jobs and more than $4 billion in labor income across the Washington state economy.

We hope you will give this project full and fair consideration.

Sincerely,

Roger Millar, PE, FASCE, FAICP
Secretary of Transportation

STRATEGIC BUSINESS PLAN

Seaport Alliance
May 6, 2015

PRESENTATION OVERVIEW



Recent industry changes drive actions to stay competitive

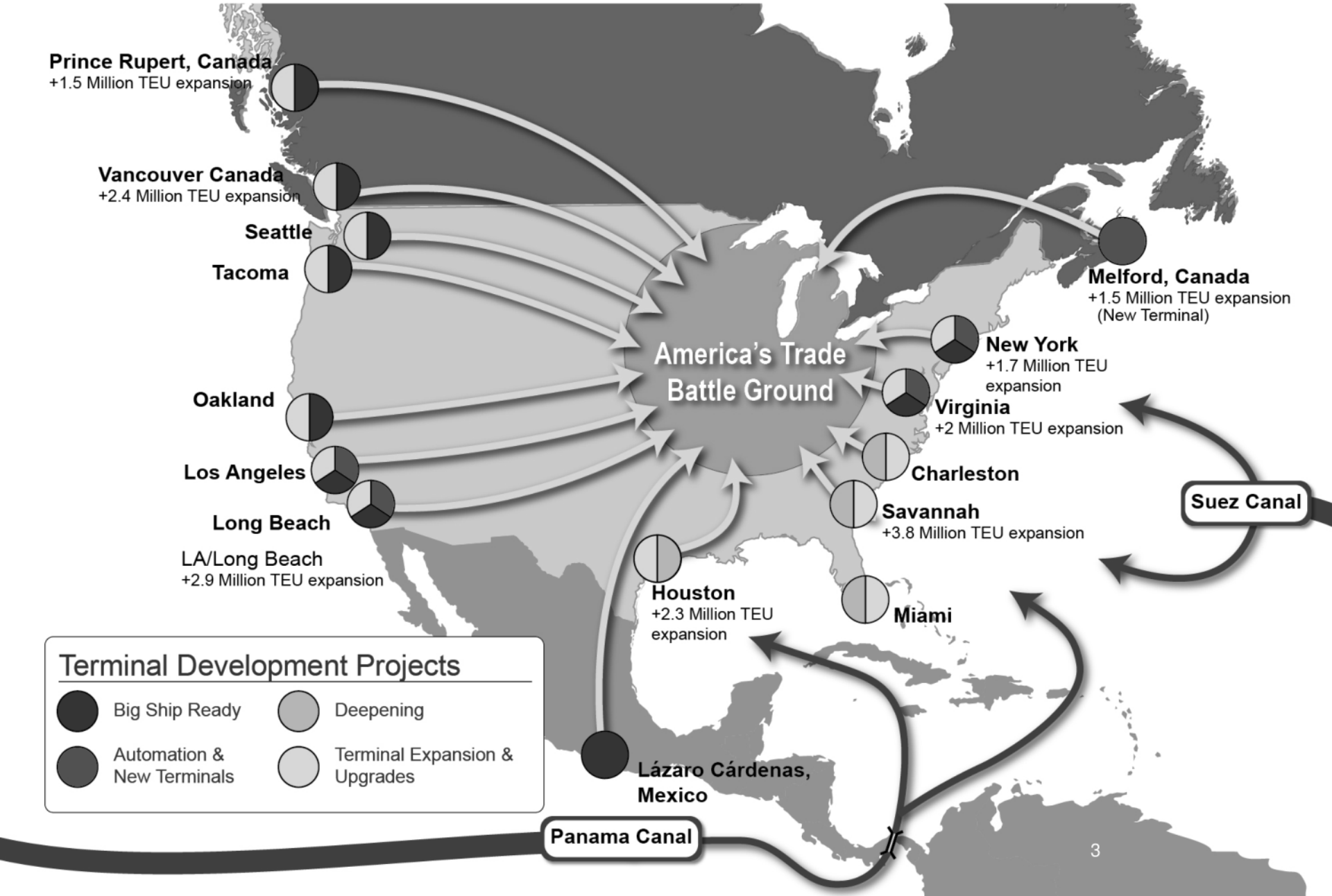


Optimized infrastructure investment strategy

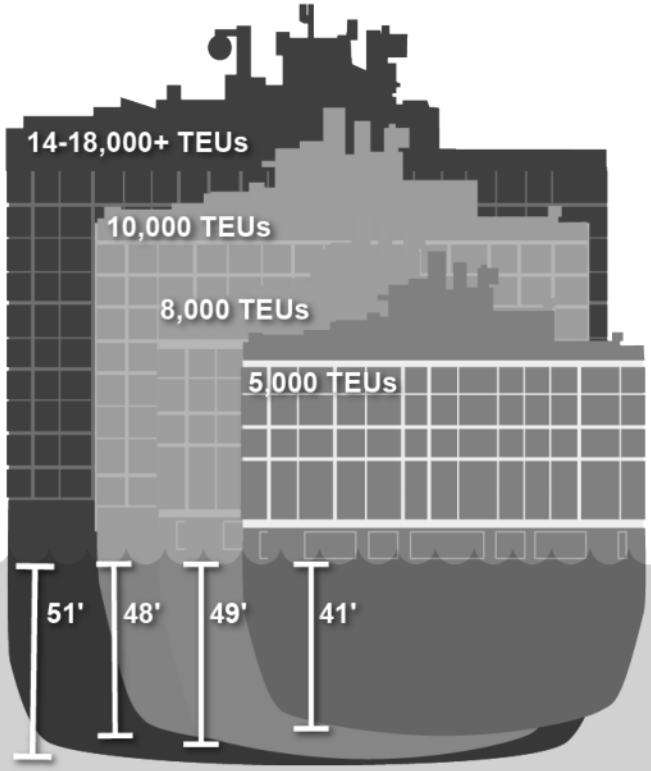


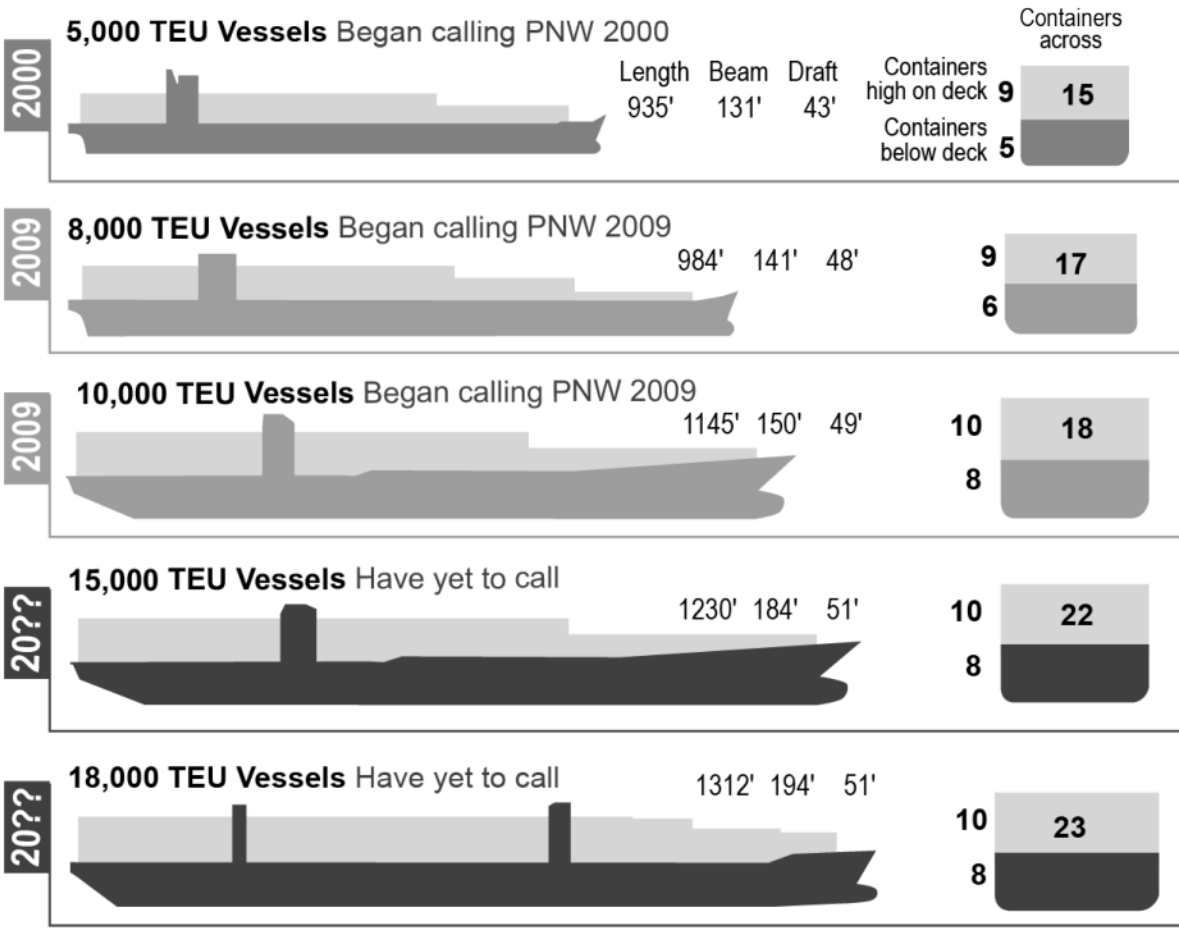
Customer focused solutions to become the gateway of choice

NEW & INTENSIFIED COMPETITION



ULTRA LARGE CONTAINER SHIPS





Port of Seattle

Larger vessels are being planned & built.

Port of Tacoma

KEY STRATEGIC FINDINGS FOR THE PNW GATEWAY



Inadequate capability to handle multiple ultra-large container ships

- Too many small terminals that do not fit the strategic requirements for handling big ships.



Formation of mega-alliances

- Consolidation of ports and terminals
- Shipping lines divesting of terminals



Excess terminal capacity

- Too many acres dedicated to containers

PNW GATEWAY CRITICAL SUCCESS FACTORS



Increased terminal utilization



Productivity enhancements



Rail competitiveness



Infrastructure investment

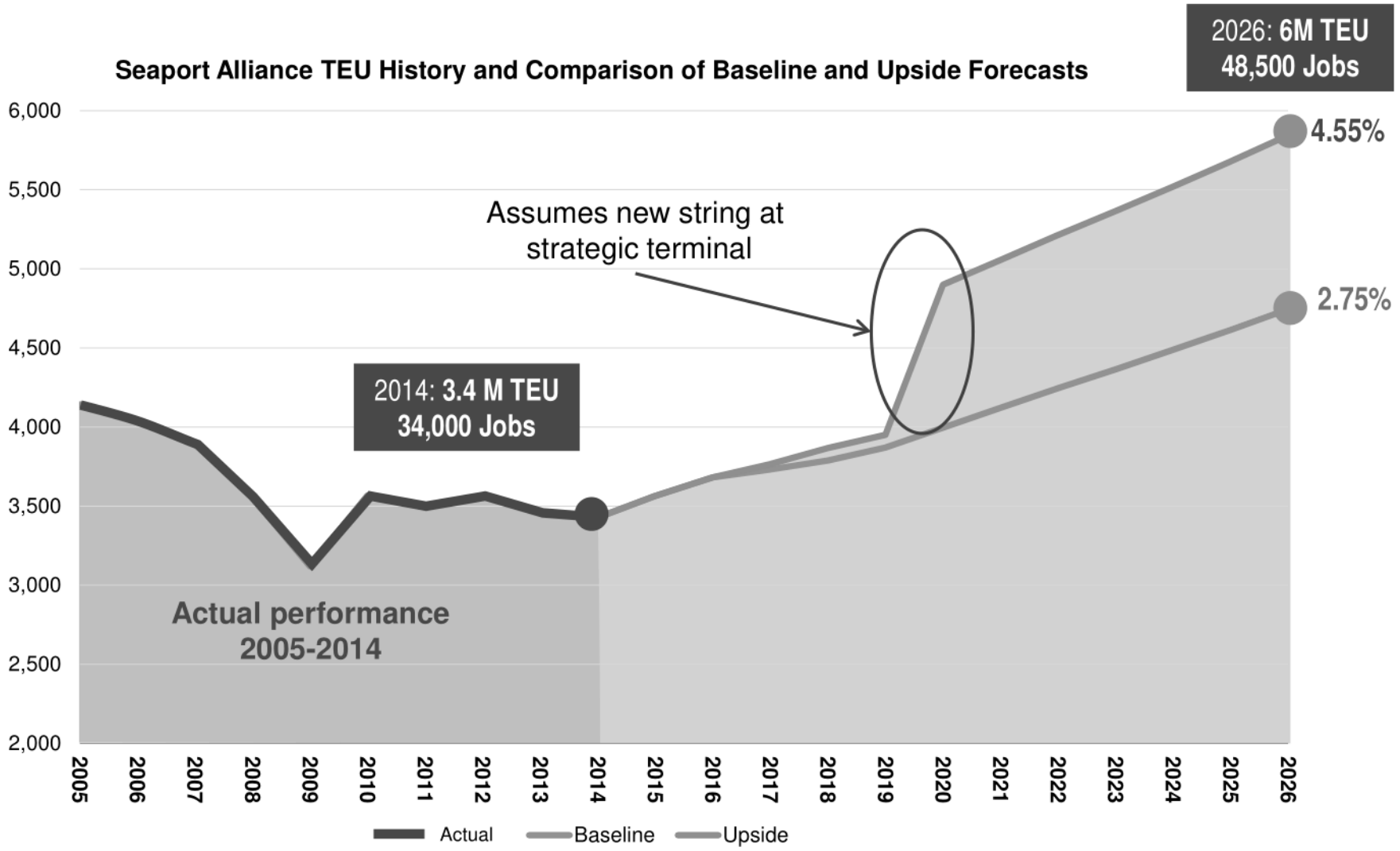


Regulatory climate

Port of Seattle

Port of Tacoma

CARGO GROWTH GOALS

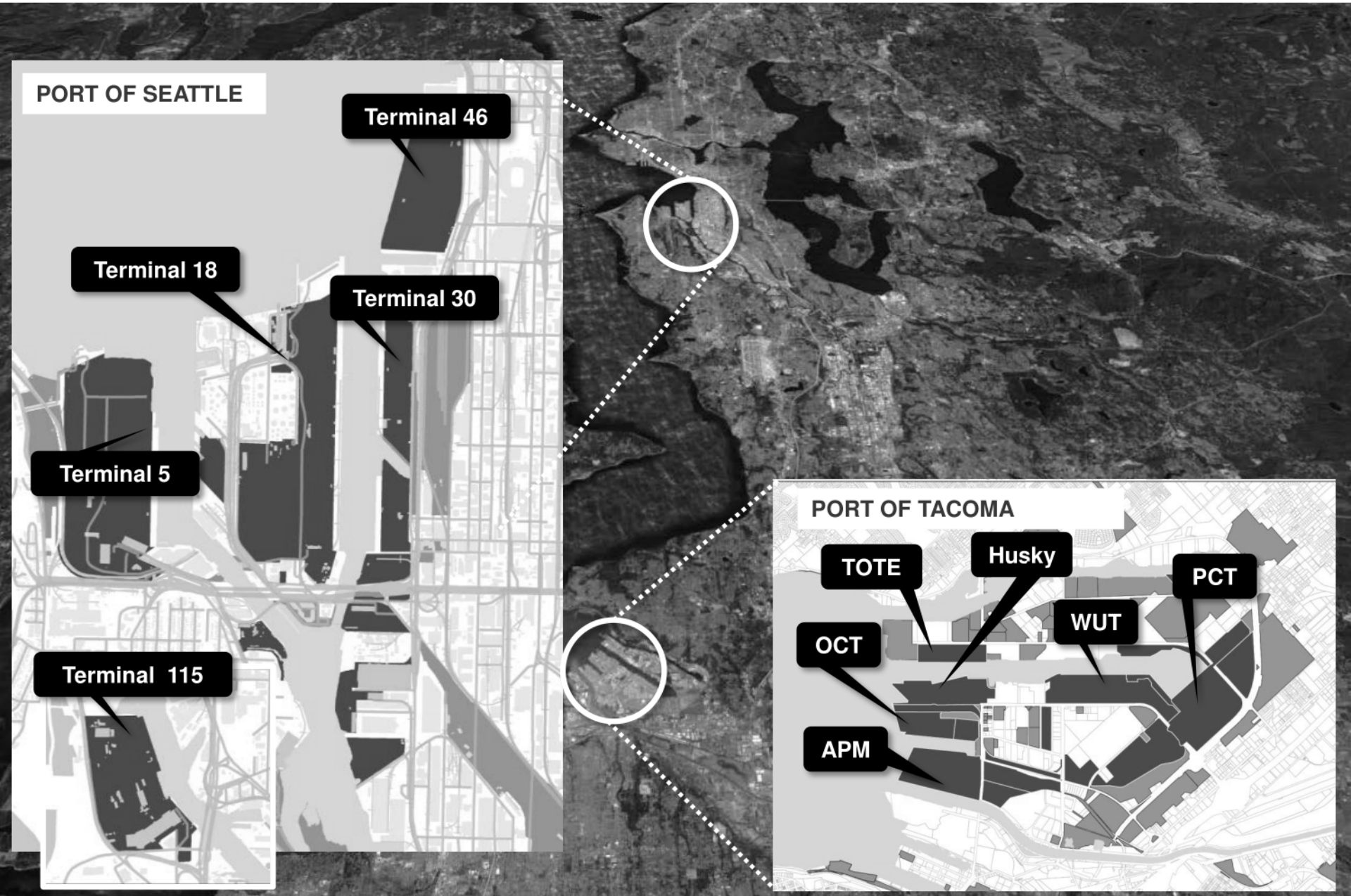


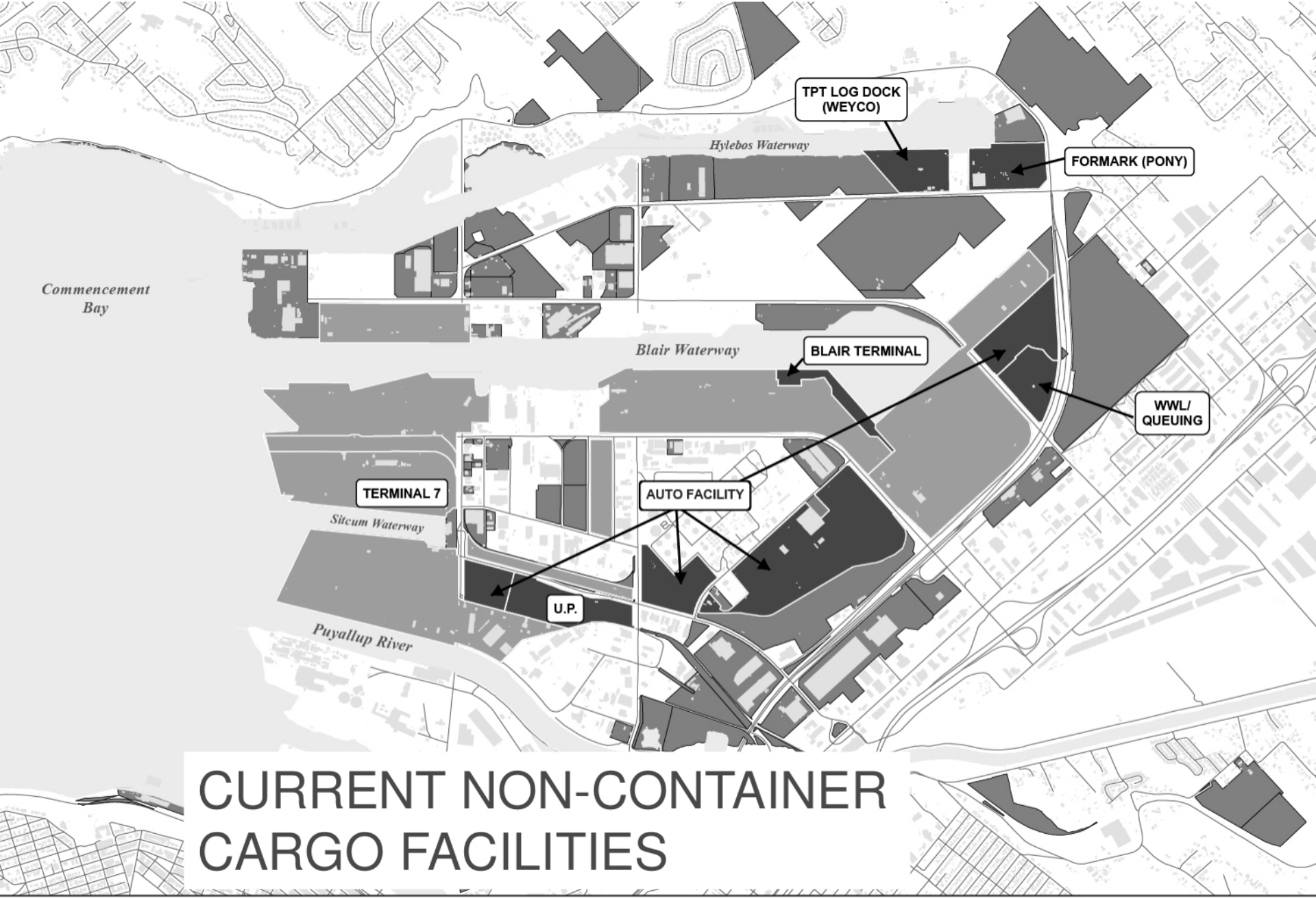
Port of Seattle

Mercator International, LLC

Port of Tacoma

CURRENT CONTAINER CARGO FACILITIES





CURRENT NON-CONTAINER CARGO FACILITIES

0 0.1 0.2 0.3 0.4 0.5
Miles

Seaport Alliance Properties

SA Non-Container Terminals

Non-Alliance Port Properties

Port of Tacoma

GATEWAY OPTIMIZATION

Achieve 70% Utilization | Strategic Terminals | Double Volume

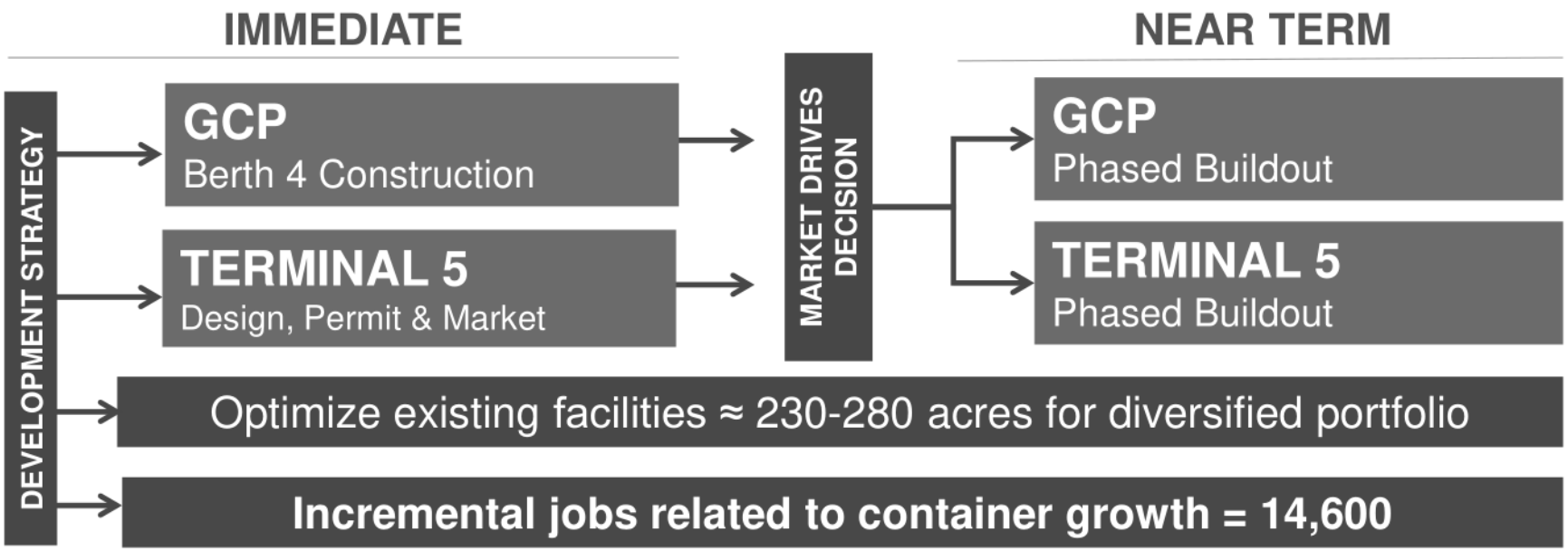
CURRENT

- ≈ 43% Utilization
- 3.4m TEU (3m Int'l)
- Current Acreage:
  1080 acres (Int'l container)

10 YEARS

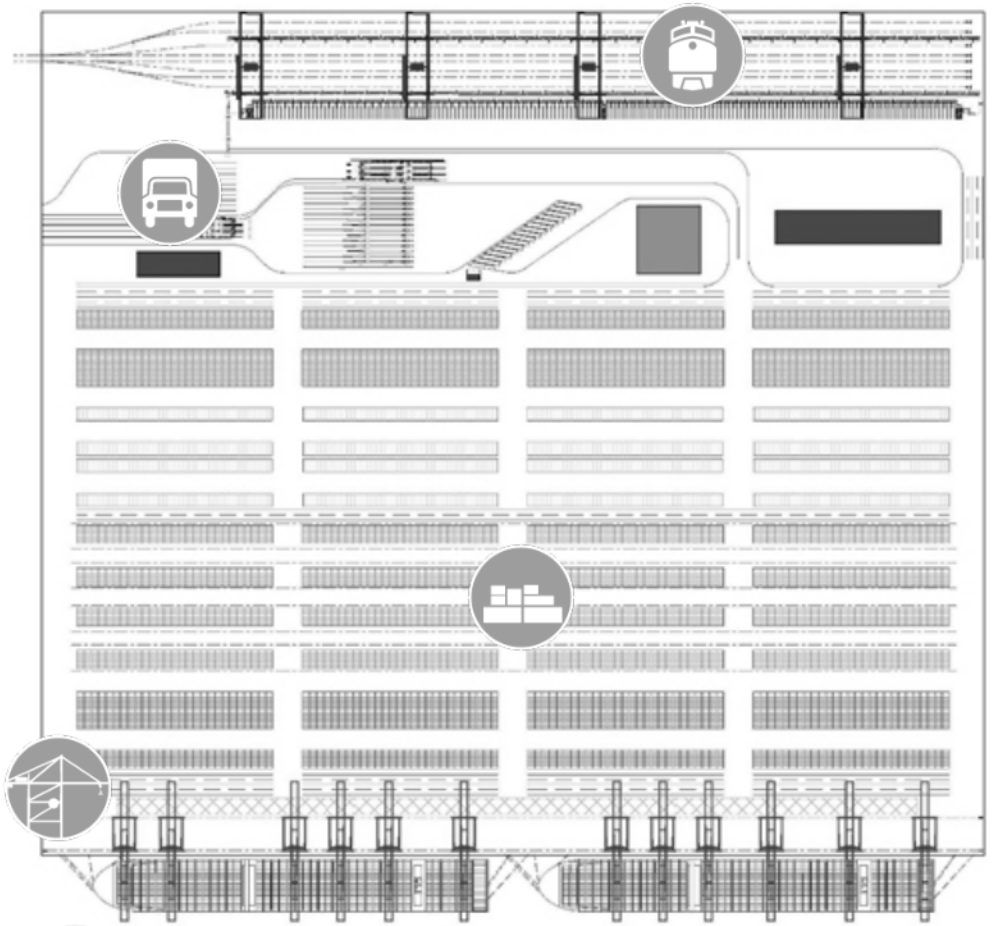
VISION 2025

- 70% Utilization
- 6m TEU (5m Int'l)
- Optimal Acreage:
  800-850 acres (Int'l container)



STRATEGIC TERMINAL CRITERIA

Ability to handle 2 x 14,000 TEU ships



Throughput Assumptions

Container yard: 1.2 Million TEU/Year

Intermodal yard: 750,000 TEU/Year

Intermodal Yard

- 28,000' Working Track
- 3 Trains in/out per day

Container Yard

- 100 Storage Acres
- Yard Gantry Crane /Top Pick Operation
- Density 10k-12k TEU per acre/yr

Berths - Landside

- 2,800' Berth
- 100' gauge crane rail w/ required infrastructure
- 2 x 14,000 TEU ships

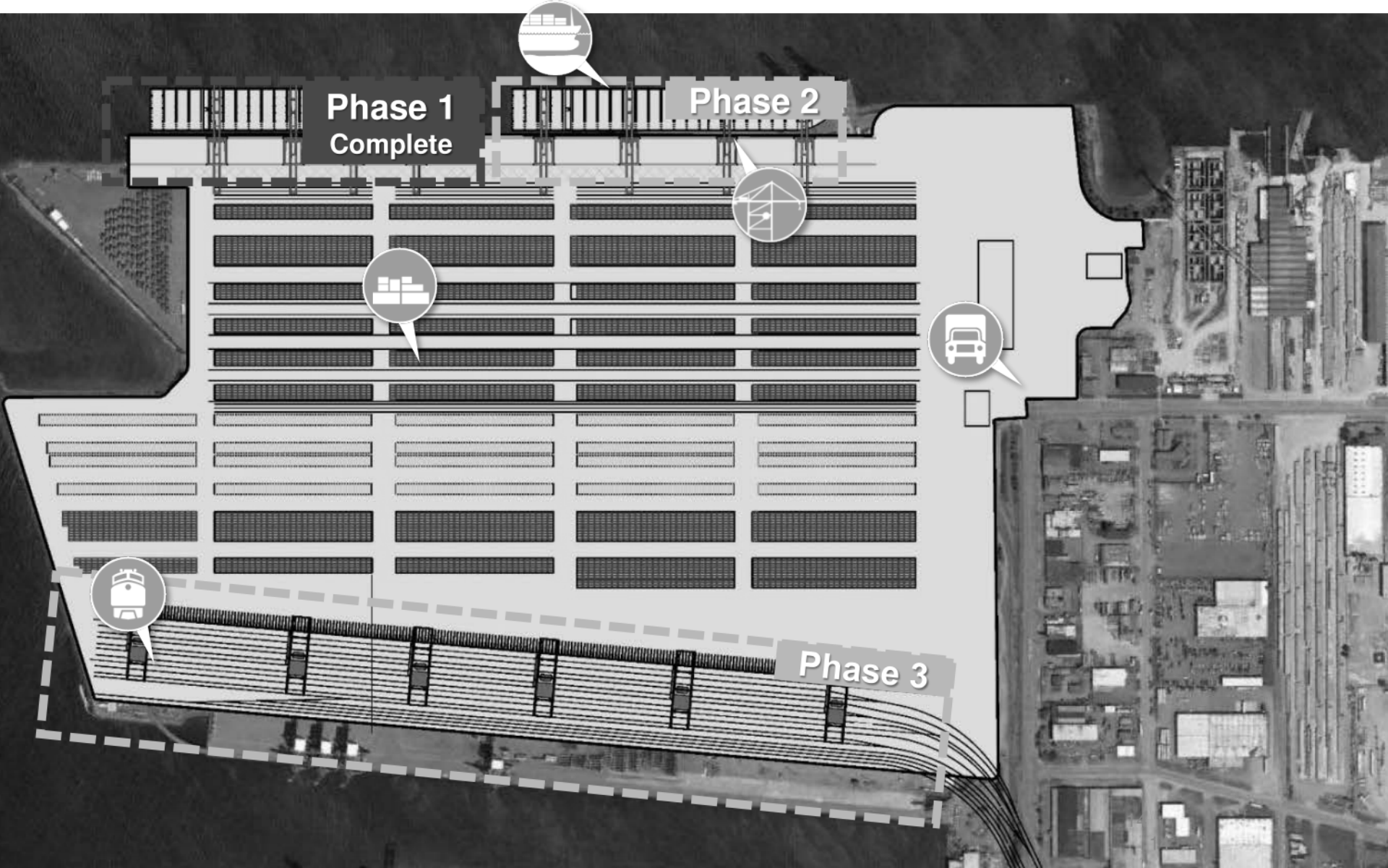
Berths - Waterside

- 55' Water Depth

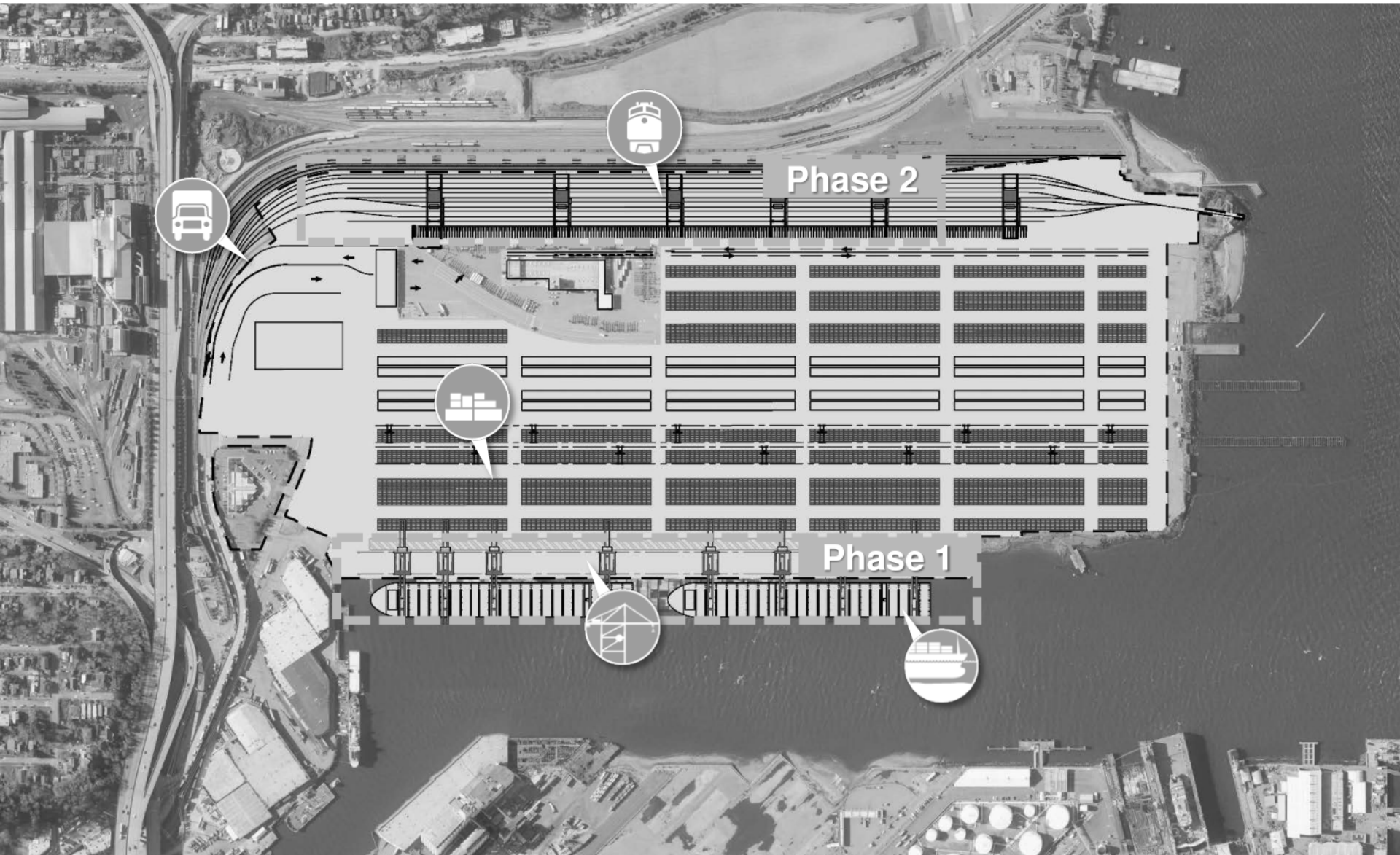
Truck Improvements

- Gates: 8 In & 4 Out
- Improved truck queues

STRATEGIC TERMINAL CONFIGURATION
General Central Peninsula Terminal Tacoma



STRATEGIC TERMINAL CONFIGURATION
Terminal 5 Seattle

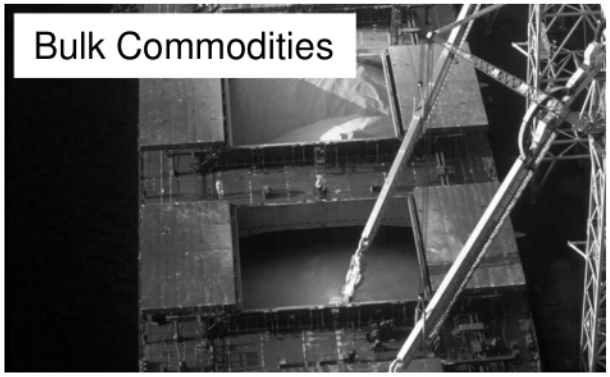


Opportunities for Excess International Container Capacity



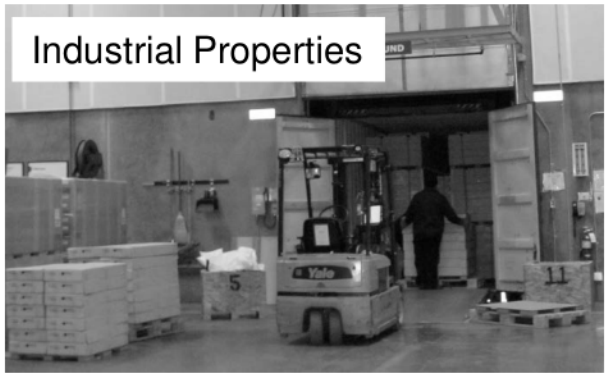






CARGO DIVERSIFICATION









DOMESTIC CONTAINER

FACILITIES

Tacoma's TOTE Terminal
- Totem Ocean Trailer Express



Seattle's Terminal 115
- Northland Services



Seattle's Terminal 18/30
- Matson



FORECAST

Alaska



Modest Growth

Hawaii



Modest Growth

LOOKING FORWARD

- Stable market for Alaska/Hawaii
- Terminal capacity meets market need
- Explore new business opportunities with key stakeholders

NON-CONTAINER

FACILITIES





FORECAST

Dry Bulk	Breakbulk	Autos	Logs	Liquid Bulk	Military
Flat	Modest growth	Modest growth	Flat	High growth	Flat

LOOKING FORWARD

- Stable market
- Adapt facility capacity to meet market demand
- Pursue additional cargo diversification opportunities

CUSTOMER FOCUSED SOLUTIONS

The Seaport Alliance will deliver the best value to customers, community and stakeholders

Internal Drivers → **External Outcomes**



Service Delivery

Team approach to deliver operational excellence



Facilities for the Future

Deliver flexible facilities plan and infrastructure for big ships & mega-alliances



Customer Satisfaction

Ease of doing business
Reliability
Operational Efficiency
Cost of doing Business



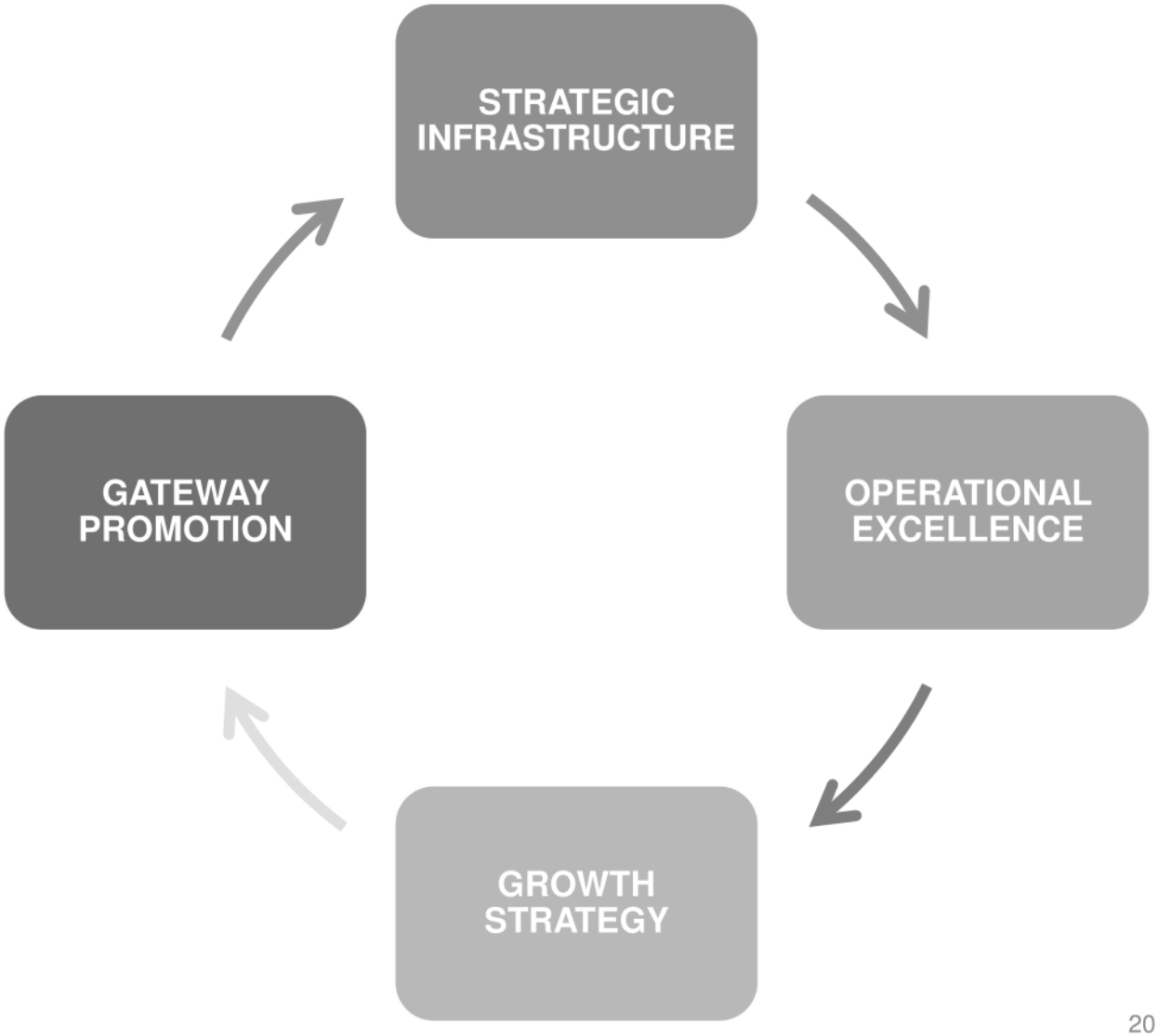
Return to Community & Stakeholders

Job Creation
Cargo Growth
Financial Sustainability

Port of Seattle

Port of Tacoma

COMMERCIAL IMPLEMENTATION STRATEGY



OPERATIONAL EXCELLENCE
SERVICE DELIVERY PERFORMANCE METRICS

Proposed Service Delivery Key Performance Indicators (KPIs)

KPI	KPI Description
On-time pro-forma vessel arrival and departure	Percentage of vessels that arrive and depart within 12 hours of the published pro-forma berth window
Vessel Production	Average production (berth and crane) against the vessel
Truck visit turn time	Average time per truck visit. Includes both queue and terminal turn time
Average import rail dwell	Average container dwell for import rail containers from discharge at the terminal to the train transfer to the mainline railroad
Import rail transit time	Average transit time by inland destination from the transfer to the mainline railroad to train arrival at the inland rail ramp

Proposed PNW Gateway Executive Advisory Council

- Beneficial Cargo Owners & NVOCC's
- Ocean Carriers
- Marine Terminal Operators
- Labor Partners
- Class 1 Railroads
- Shortline Railroads
- Trucking Companies
- Transload/Distribution Companies
- Puget Sound Pilots

GATEWAY RISKS

- Continued cargo erosion to other gateways
- Terminal productivity
- Rail Competitiveness
- Late to market with strategic terminals
- Regulatory environment
- Global trade patterns shift

STRATEGIC BUSINESS PLAN GOALS & KEY INITIATIVES

GOALS	Service Delivery Excellence	Gateway Growth and Optimization	Gateway Business Environment
INITIATIVES	• Operations Service Center • Key Performance Metrics • Freight Mobility	• Carrier Alliance Consolidation Strategy • Beneficial Cargo Owner/NVOCC Program • Cargo Diversification • Rail Competitiveness • Integrated Investment Strategy	• Transportation Infrastructure Funding • Regulatory Climate • Gateway Commitment

SEAPORT ALLIANCE KEY METRICS
2025 Measures of Success



Cargo Growth
6,000,000 TEU



Job Creation
14,600 incremental jobs



Financial Sustainability
Return on invested capital
Net income growth
Solid Financial margins








THE SEAPORT ALLIANCE

Port of Seattle

Port of Tacoma







ATTACHMENTS FORM

Instructions: On this form, you will attach the various files that make up your grant application. Please consult with the appropriate Agency Guidelines for more information about each needed file. Please remember that any files you attach must be in the document format and named as specified in the Guidelines.

Important: Please attach your files in the proper sequence. See the appropriate Agency Guidelines for details.

1) Please attach Attachment 1	1234-2022_05_14_NWSA PIDP T-5	Add Attachment	Delete Attachment	View Attachment
2) Please attach Attachment 2	1235-2022-05-14_NWSA_PIDP 202	Add Attachment	Delete Attachment	View Attachment
3) Please attach Attachment 3	1236-NWSA_PIDP 2022_BCA_v2.xl	Add Attachment	Delete Attachment	View Attachment
4) Please attach Attachment 4	1237-NWSA LOC for T5 PIDP Wol	Add Attachment	Delete Attachment	View Attachment
5) Please attach Attachment 5	1238-T5 60% Grant Application	Add Attachment	Delete Attachment	View Attachment
6) Please attach Attachment 6	1239-NWSA_PIDP 2022 Letters o	Add Attachment	Delete Attachment	View Attachment
7) Please attach Attachment 7	1240-NWSA 2015 Strategic Busi	Add Attachment	Delete Attachment	View Attachment
8) Please attach Attachment 8		Add Attachment	Delete Attachment	View Attachment
9) Please attach Attachment 9		Add Attachment	Delete Attachment	View Attachment
10) Please attach Attachment 10		Add Attachment	Delete Attachment	View Attachment
11) Please attach Attachment 11		Add Attachment	Delete Attachment	View Attachment
12) Please attach Attachment 12		Add Attachment	Delete Attachment	View Attachment
13) Please attach Attachment 13		Add Attachment	Delete Attachment	View Attachment
14) Please attach Attachment 14		Add Attachment	Delete Attachment	View Attachment
15) Please attach Attachment 15		Add Attachment	Delete Attachment	View Attachment

OMB Number: 4040-0004
Expiration Date: 12/31/2022

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 05/14/2022

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Northwest Seaport Alliance

* b. Employer/Taxpayer Identification Number (EIN/TIN): (b)(4)

* c. UEI: (b)(4)

d. Address:

* Street1: 1 Sitcum Way
Street2:
* City: Tacoma
County/Parish:
* State: WA: Washington
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 98421-3000

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Ms.
* First Name: Deirdre
Middle Name:
* Last Name: Wilson
Suffix:

Title: Senior Planning Manager

Organizational Affiliation: Northwest Seaport Alliance

* Telephone Number: 253-365-7283
Fax Number:

* Email: dwilson@nwseaportalliance.com

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

D: Special District Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Maritime Administration

11. Catalog of Federal Domestic Assistance Number:

20.823

CFDA Title:

Port Infrastructure Development Program

*** 12. Funding Opportunity Number:**

MA-PID-22-001

* Title:

2022 Port Infrastructure Development Program Grants

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Terminal 5 Export, Expansion, and Emissions Reduction Project

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: WA-009 * b. Program/Project: WA-009

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 05/01/2024 * b. End Date: 11/01/2025

18. Estimated Funding ($):

* a. Federal	17,035,900.00
* b. Applicant	9,223,600.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	26,259,500.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Ms. * First Name: Deirdre

Middle Name:

* Last Name: Wilson

Suffix:

* Title: Senior Planning Manager

* Telephone Number: 253.365.7283 Fax Number:

* Email: dwilson@nwseaportalliance.com

* Signature of Authorized Representative: Deirdre Wilson * Date Signed: 05/14/2022

OMB Number: 4040-0008
Expiration Date: 02/28/2025

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	$	$	$
2. Land, structures, rights-of-way, appraisals, etc.	$	$	$
3. Relocation expenses and payments	$	$	$
4. Architectural and engineering fees	$ 3,509,500.00	$ 1,922,500.00	$ 1,587,000.00
5. Other architectural and engineering fees	$	$	$
6. Project inspection fees	$	$	$
7. Site work	$	$	$
8. Demolition and removal	$	$	$
9. Construction	$ 22,750,000.00	$	$ 22,750,000.00
10. Equipment	$	$	$
11. Miscellaneous	$	$	$
12. SUBTOTAL *(sum of lines 1-11)*	$ 26,259,500.00	$ 1,922,500.00	$ 24,337,000.00
13. Contingencies	$	$	$
14. SUBTOTAL	$ 26,259,500.00	$ 1,922,500.00	$ 24,337,000.00
15. Project (program) income	$	$	$
16. TOTAL PROJECT COSTS *(subtract #15 from #14)*	$ 26,259,500.00	$ 1,922,500.00	$ 24,337,000.00

FEDERAL FUNDING

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X 70 %	$ 17,035,900.00

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[x] Prime [ ] SubAwardee

* Name: The Northwest Seaport Alliance

* Street 1: One Sitcum Plaza Street 2:

* City: Tacoma State: WA: Washington Zip: 98401-9808

Congressional District, if known: WA-07

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:

Maritime Administration

7. * Federal Program Name/Description:

Port Infrastructure Development Program

CFDA Number, *if applicable:* 20.823

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix: * First Name: Jeff Middle Name:

* Last Name: Markey Suffix:

* Street 1: 440 First Street NW Street 2:

* City: Washington State: DC: District of Columbia Zip: 20001

b. Individual Performing Services (including address if different from No. 10a)

Prefix: * First Name: Jeff Middle Name:

* Last Name: Markey Suffix:

* Street 1: 440 First Street NW Street 2:

* City: Washington State: DC: District of Columbia Zip: 20001

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** Deirdre Wilson

***Name:** Prefix: * First Name: Ryan Middle Name:

* Last Name: McFarland Suffix:

Title: Senior Manager of Government Affairs **Telephone No.:** 253-229-5578 **Date:** 05/14/2022

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)