A Tale of Two Piers:

Navigating the Challenges of Port Dock Redevelopment in the Ever-Changing Tides of Permitting, Financing, and Commercial Opportunities at the Ports of Everett and Vancouver USA, Washington State

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Professional Port Manager (PPM) Program Capstone Paper

By:

Erik Gerking, Chief of Planning and Development, Port of Everett, erikg@portofeverett.com

Todd Krout, Director of Operations, Port of Vancouver USA, tkrout@portvanusa.com

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Abstract

Seaports across the United States are grappling with aging infrastructure at the intersection of rising construction costs, regulatory complexities, and operational demands that far outpace available funding. This reality is especially true at small and medium-sized ports. The objective of this paper is to present a comparative case study and exploration of Pier 3 at the Port of Everett and Pier 8/9 at the Port of Vancouver USA; both vital facilities facing similar challenges despite differences in geography and cargo specialization. These obstacles come simultaneously while ports seek to modernize these facilities for future resiliency and meet commercial demand. In addition to the paper itself and referenced resources, this paper provides a distilled a one-page communication on best practices for port professionals, and a one-page document that is a call to action for legislators to support the critical role small and medium-sized ports play in regional and national economic development through port infrastructure funding and permitting reform. This paper is an example of the value of "peer" collaboration. Through a methodology of shared learning, joint analysis, and independent research, these two ports have developed a deeper understanding of the systemic barriers to modernization and possible ways to overcome them to help ensure that critical pier assets remain functional and competitive.

Authors' Biographies

Erik Gerking
Chief of Planning and Development
Port of Everett

Erik Gerking serves as the Chief of Planning and Development at the Port of Everett, where he leads a cross-functional team that implements long-range planning, certain real estate development efforts, permitting and regulatory matters, and environmental initiatives. Since joining the Port in 2009, Erik has helped transform the Everett waterfront through environmental cleanup and restoration, upland and marine infrastructure, and redevelopment projects. Erik has over 25 years of experience in the port and environmental sectors, earned a Bachelor of Science in geology from Southern Oregon University in Ashland, Oregon and a professional credential in technical writing and editing from the University of Washington, in Seattle Washington.

In his current leadership role, Erik provides cross-functional oversight that touches all of the Port's business lines, seaport operations, marina, commercial real estate, and its environmental mitigation bank. As the maritime industry adapts to emerging challenges in supply chain logistics, infrastructure investment, environmental regulation, and generational workforce shifts, Erik is committed to shaping sustainable, long-term outcomes.

Erik and his wife, Meghan, are raising two young children in Seattle, Washington, who love exploring the great outdoors, skiing in the Cascades Mountains, riding bikes, playing and coaching soccer, scouting, cheering for the Mariners, and spending time with friends and family.

Todd Krout
Director of Operations
Port of Vancouver USA

Todd Krout was appointed as the Director of Operations for the Port of Vancouver USA in June 2015. His responsibilities include oversight and management of Security, Safety, and Terminal and Rail Operations. He makes recommendations for improvements and replacements to industrial and marine facilities for efficiency of operations and maintenance of port assets. He also ensures compliance with the port's Facilities Security Plan as approved by the US Coast Guard.

Todd has held a variety of leadership positions during his 20-year tenure at the port including Director of Facilities. Prior to his work at the port, Todd worked as a Mechanical Engineer with Cascade Corporation and as an Operations Engineer and Facilities Maintenance Manager at SEH America. He graduated from the Oregon Institute of Technology with a Bachelor of Science degree in Mechanical Engineering Technology.
Todd is a member of the Leadership Clark County class of 2006 and has served as a volunteer with the Washougal High School baseball and career development programs. He currently serves as a Portland Merchants Exchange board member.

Todd and his wife Chary enjoy spending time outdoors at their family cabin with their two adult children.

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Introduction and Background

Global and regional cargo movement in the United States relies on a network of critical marine infrastructure–none more central, yet increasingly vulnerable, than piers. Contrary to the view of the distant onlooker who may assume these facilities are permanent, resilient and banal, these structures are rich with challenging issues, including commercial struggles, engineering challenges, legal battles, labor disputes, complex lease negotiations, significant revenue streams, regional economic opportunities, national defense operations, emergency response logistics, and more. Piers are critical national assets and must be recognized as such. Unfortunately, these structures are under crushing pressure on average exceeding the design life of 50 years [American Society of Civil Engineers (ASCE), 2025] and many facing colliding issues:

- Rising repair and maintenance costs,
- Chronic underinvestment by the federal and state governments,
- Increasingly complex, time consuming and costly permitting processes, and
- An inability to accommodate evolving commercial and national security needs.

This Port Professional Managers (PPM) capstone paper explores the shared and unique challenges and strategic importance of aging piers at two diverse yet similarly mission-critical Washington state ports: the Ports of Everett (POE) and the Port of Vancouver USA (POV). With the state of Washington being the most trade dependent state in the U.S., each port plays a unique and indispensable role within the regional and national supply chain; Everett specializes in high-value aerospace, industrial breakbulk cargo, dry-bulk cargo, and defense cargo; and Vancouver as a vital gateway for bulk, breakbulk, Roll-On/Roll-Off (Ro/Ro), and project cargos. While there are overlapping categories of cargo handled at each port, they each serve unique roles in the movement of critical cargos. A brief overview of each port is presented in Appendix A. Both ports have a common reliance on aging infrastructure and are challenged to upgrade these facilities to meet new and existing demands.

Through the lens of Pier 3 at the POE and Piers 8 and 9 at the POV, this paper explores the range of issues faced, the range of actions taken, lessons learned, common challenges, cost and financial information, funding strategies, government affairs approaches, and potential policy, permitting strategy, and funding solutions. This paper will not cover detailed engineering analyses, but rather, it will focus on salient topics from the perspective of Port management professionals. Additionally, as part of the background research of this paper, a survey of PPM candidates and other port professionals was undertaken with the results presented herein.

The information presented and findings are relevant not just to these two ports, but to a broad class of strategic, mid-sized U.S. ports facing similar constraints. In doing so, this work seeks to stimulate a national

conversation about prioritizing and protecting maritime infrastructure that underpins both regional economies and national security.

Methodology

Our approach to meeting the objectives of the PPM capstone paper required significant research and information gathering. Research included review of each organization's archives for historical content on the original dock/pier construction timelines and methodology for Pier 3 at the Port of Everett and Pier 8/9 at the Port of Vancouver USA. ChatGPT was used as a tool to help synthesize and organize complex information during the drafting process. Additional information gathering included interviewing and surveying colleagues, with specific commercial, financial, construction or permitting knowledge about the infrastructure. We drew on our own institutional knowledge and experiences of port development challenges with piers. Technical drawings, permits, consultant reports, photos, interviews, surveys, grant applications, and financial documents were utilized throughout the process.

Situational Analysis and Shared Experiences

Every pier facility has a story starting with its original intended purpose and followed by their evolving operational demands with incremental financial investments that unfold through decades of use. Understanding the history and present condition of a facility is critical to planning its future, especially in the face of growing economic, regulatory, and engineering challenges. The following subsections summarize the histories and current realities of Pier 3 at the POE and Piers 8 and 9 at the POV, providing brief context for the strategic decisions now confronting both ports.

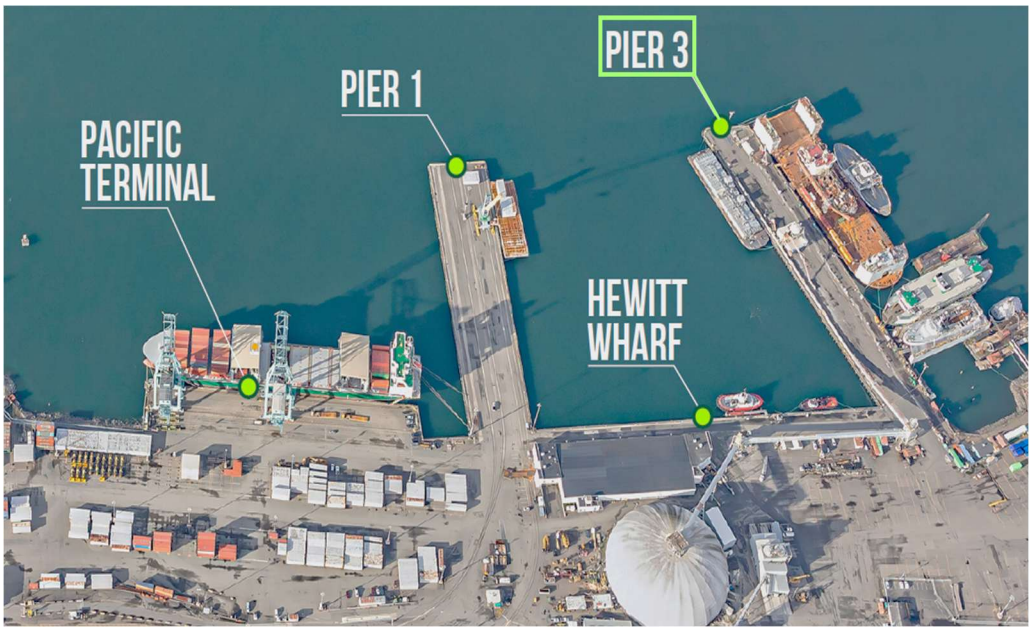
Port of Everett - Pier 3

Pier 3 is one of two finger piers at the POE seaport, was constructed in 1973, and to put this into perspective was also the year FedEx began its operations, the year the Pink Floyd released their hit album “Dark Side of the Moon,” and the year the US ended its involvement in the Vietnam War. Over the course of its long operational history, the pier has served a variety of economically important uses, including bulk alumina and cement, general cargoes, forest products handling and ship repair.

Today, the primary uses of the pier is off-loading bulk cement ships and barges on the south side and a robust shipyard on the north side of the pier. The bulk cement lease is set to expire in 2027 and the POE recently expanded the shipyard lease area and extended the lease an additional five years. The bulk cement operation is economically important to the region, providing a critical supply of cement to Washington state and the broader region. The shipyard is one of five industrial shipyards in the Puget Sound region and serves both commercial,

government, and some limited navy and coastguard vessels, and is rapidly growing its customer base.

Figure 1: *Port of Everett, Pier 3 and surrounding area (C. Soper, April 2024).*



Pier 3 is 730 ft. long and 120 ft. wide concrete deck pier supported on 560 prestressed vertical concrete piles and 146 steel pipe batter piles. Stormwater is drained from the pier via bull rail scuppers and is treated using biochar waddles. The pier was designed to carry a uniform live load of 800 pounds per square foot (psf) with two 650 ft. berths, totaling 1,300 linear ft. of berth, and a depth of minus 40 ft. elevation in Mean Lower Low Water (MLLW).

Due to an insidious type of chemical deterioration of the pier's concrete support piles, known as delayed ettringite formation (DEF), the uniform load was derated in 2023 generally to between 400 and 600 psf, and in some specific areas from 100 psf to no-operational loading. The problem of DEF is generally caused by errors made during the concrete pile manufacturing process when high early-stage curing temperatures (typically above 150°F), such as those in precast or mass concrete, suppress the normal formation of ettringite during hydration. Once the concrete later cools and is exposed to moisture, ettringite forms and expands within the hardened matrix, leading to internal pressure, cracking, and in Pier 3's case, long-term structural damage.

Over the past 15 years or more, the Port has been implementing a measured maintenance approach of installing pile jackets to reinforce the DEF deteriorated piling. Recently, the Port determined that more significant steps were needed to address the deteriorated piles, such as driving new piles or rebuilding the Pier. The Port is now in the planning effort for this work. In the meantime, the Port and its tenants are carefully operating on Pier 3, utilizing a combination of a structural condition heat map that indicates the operating

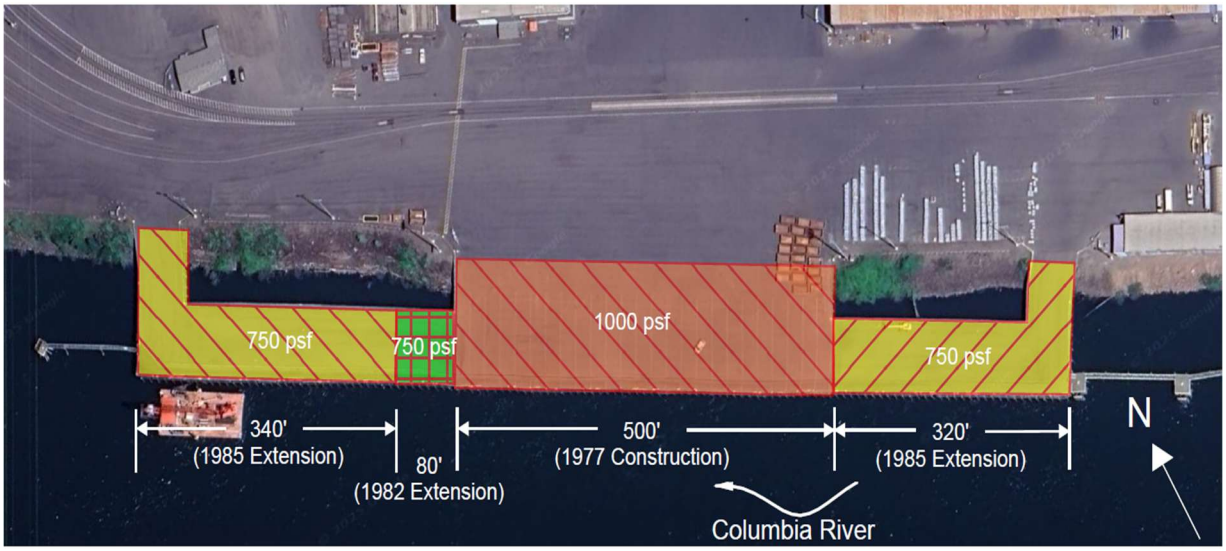
capacity of each area of the pier, detailed structural engineering analyses to determine localized crane loading capacities, and crane mats to spread loads as determined necessary by the engineering analyses. However, each crane analysis costs our tenant approximately $20,000 to perform.

The current bulk cement and shipyard operations, and future plans to increase current operations and bring new cargo across the pier are being put at risk by the condition of the pier. The high value and dynamic utilization of Pier 3 creates a unique opportunity to preserve, enhance, and expand the use of this facility. Unfortunately, the costs of doing this are not supported by the revenues generated from the uses.

Port of Vancouver - Pier 8/9

Pier 8/9 (Figure 2) is located at approximately River Mile 104, inland from the Pacific Ocean, at Terminal 3. Terminal 3 is a breakbulk cargo terminal that includes 258,000 square ft. of covered storage, 65 acres of laydown, and the previously mentioned Piers 8 and 9 with a draft of minus 43 ft. MLLW Columbia River Datum (CRD).

Figure 2 - *Port of Vancouver Piers 8 and 9 (A. Mohammed, June 2025)*



Together, the piers have a total combined wharf length of 1,240 ft. and collectively represent three phases of development. The initial phase and middle section occurred in 1977 when Pier 8 was constructed as a general cargo handling dock. It is approximately 142 ft. wide by 500 ft. long structure and rated at 1,000 psf. In 1982, an 80 ft. long by 80 ft. wide downstream extension to Pier 8 was initiated but not completed. Then in 1985, a 320 ft. long by 80 ft. wide upstream extension and a 420 ft. long by 80 ft. wide downstream extension to the pier was constructed, each rated at 750 psf. 60 ft. wide

access trestles connecting the wharf to shore are located at both the upstream and downstream ends of the wharf. The combined structure now operates as Piers 8 and 9.

The wharf is constructed with precast/prestressed concrete deck panels and cast-in-place concrete pile caps and is supported primarily with precast/prestressed concrete plumb and batter piles, except for the portion of dock built in 1982 which is supported on steel pipe piles. The concrete piles are 18-inch octagonal, and steel pipe piles are 20 inches in diameter with a 1/2- inch-thick wall. Cast-in-place concrete pile caps are typically oriented perpendicular to the shoreline and are spaced at 20 ft. on center. The fender system consists of steel pipe piles faced with ultra-high molecular weight (UHMW) rub strips along with timber walers and rubber fender cells.

A stormwater trench drain was added after construction of the original wharf which runs the length of the wharf approximately 12 ft. inboard of the bull rail. Stormwater is conveyed to the nearby Terminal 4 stormwater pond and treated to meet or exceed the Port's Industrial Stormwater General Permit (ISGP) requirements for dissolved metals and turbidity.

On the surface, this pier system appears to be sufficient and in good shape. Unfortunately, the variability of the load ratings in combination with the inefficient configuration as a result of being constructed over several years with adopted value engineering solutions make the dock underrated to handle the heavy project cargo the vessels carry today, which limits the port's flexibility where cargo can be handled and staged. This has the potential to congest terminals at the port with certain cargoes only being able to be handled at a specific dock and terminal. Even though the 1977 deck is rated at 1,000 psf, the pile caps in the 1977 portion of the structure will fail at approximately 90 percent of the deck load rating depending on the equipment utilized To correct for the deficient load rating, cranes must be centered over specific pile bents closer to the center of the 1977 structure to handle heavy project cargoes. (A. Mohammed, January 7, 2025)

Piers 8 and 9 serve as the Port's strategic breakbulk facility for steel, aluminum, lumber and pulp commodities primarily due to the relatively new upland storage warehouses and available laydown space on Terminal 3. The diverse breakbulk cargo operations on the wharf are an essential component to generating longshore labor hours and creating economic development. However, the escalating construction costs to address Pier 8's structural deficiencies and reconfigure Pier 9 for heavy cargo operations have significantly increased requiring, value engineering and scope reduction to achieve acceptable paybacks. Further, with permitting anticipated to take over three years and construction requiring two in-water work windows; returns may not be realized through the construction window. There is also a significant risk during this five-year timeframe that the market will shift extending payback timeframes.

Side by Side Comparison

To highlight the similarities and differences, Table 1 below provides a side-by-side comparison of key structural and operational characteristics of these two critical facilities.

Table 1 – *Comparison of Port of Everett Pier's 3 and Port of Vancouver Pier 8/9*

Category	Port of Vancouver – Piers 8 & 9	Port of Everett – Pier 3
Year Constructed	1977 (Pier 8); extended in 1982–1985	1973
Primary Use	Breakbulk cargo	Cement import (south face); shipyard operations (north face)
Current Tenants	Breakbulk carriers	Cement terminal operator; commercial and Navy-serving shipyard
Berth Length & Width	1,240 ft total; widths range 80–142 ft	730 ft long, 120 ft wide
Water Depth (MLLW)	-43 ft (Columbia River Datum)	-40 ft (Mean Lower Low Water)
Construction Type	Precast/prestressed concrete and cast-in-place pile caps; steel pipe and concrete piles	Concrete deck on 560 prestressed concrete piles + 146 steel batter piles
Load Capacity (original)	1,000 psf (middle), 750 psf (extensions)	Originally 800 psf uniformly
Load Capacity (current)	Underrated for modern heavy project cargo; derated and restricted to central area for crane use	Derated (2023) to 400–600 psf in most areas; some zones as low as 100 psf or non-operational due to DEF
Structural Deficiencies	Inconsistent capacity due to phased construction; insufficient pile cap design; width and derated load limits hinder crane use and heavy cargo handling	DEF-induced internal cracking of piles; severe loss of load capacity and structural integrity in localized areas
Operational Constraints	Width of extensions make it diffictul to operate more than one vessel at a time; reduced efficiency of one berth and no infill could adds $25K+ per vessel or cause port bypass	Restricted cargo zones; must use mats, detailed engineering, and condition heat maps for operations; $10K to $20K per operational analysis (e.g., crane move).
Recent/Planned Upgrades	Pier 9 Redevelopment Heavy Ro/Ro - mooring & breasting dolphins,stormwater, LED lighting, shore power, seismic upgrades; Pier 8 open panel infill	Planning phase for full structural rehabilitation or rebuild; recent focus on pile jacket reinforcement and analysis
Maintenance Strategy	Surface appears sound, but operational limitations drive redevelopment planning	Jacket repair program inadequate, shifting toward phased reinforcement to full rebuild planning due to long-term deterioration
Economic Importance	High-volume cargo terminal; vessel delays or port bypass result in lost revenue and reputational risk	Critical for cement supply chain, and commercial and national defense shipyard operations
Financial Challenge	Infrastructure underperformance risks lost cargo and cost escalation; funding required to realize full utility; Pier revenues do not support redevelopment	Pier revenues do not support cost of full structural upgrade; funding gap jeopardizes future operations

AAPA PPM Survey

To support this paper, in June 2025, a targeted survey (The Survey; Appendix B) of AAPA PPM candidates and other AAPA members was conducted to gather insights on how ports across North America are approaching pier and wharf infrastructure reinvestment. The Survey collected responses from 30 port

professionals representing 27 ports from a variety of geographies, sizes, and cargo types. The results of the survey are generally consistent with the experiences of the POE and the POV. Only 27 percent of respondents reported that pier and wharf infrastructure at their ports was rated good (fully functional with minor issues), while nearly all other respondents indicated their infrastructure was moderate (useable, but aging) to fair (limited use, some structural issues), underscoring the nationwide challenge of aging maritime facilities. In fact, 87 percent of respondents indicated that aging infrastructure and safety concerns were the primary drivers for recent projects, and only seven percent of respondents indicated all critical needs are currently addressed. The results of this survey are incorporated into the sections below, which covers infrastructure condition, reason for infrastructure improvements, financial strategies, payback period, barriers to investment, and lessons learned.

The Problem with Return on Investment

Industry wide, seaport infrastructure is aging, and maintenance costs are escalating faster than available funding can keep pace. Several variables, from the environment where the pier is located to how it is operated, can accelerate the degradation if not maintained. At both the POE and the POV, and across the nation, decades of deferred or reactive maintenance have created a widening gap between operational needs, capital availability and permitting timelines and complexities. Routine and emergency repair costs have risen sharply in recent years, while federal and state infrastructure programs often favor expansion over essential maintenance. As a result, both ports are grappling with the following compounding risks: rising operational costs, increased safety concerns, competition for federal funding, and reduced resilience to climate and seismic events. The following data from The Survey highlights this growing problem:

- 90 percent of respondents indicated they have critical piers and wharves in need of repair or replacement,
- 63 percent of respondents indicated that availability of federal funding is a barrier to future infrastructure investments,
- 50 percent of respondents indicated that permitting timelines and complexities are a barrier to infrastructure investments, and
- Only 50 percent of the respondents to the Survey indicated that recent project costs for pier and wharf infrastructure will be recouped within a 15-to-20-year period.

It is the first and last points that are likely the most significant, whereby, nearly all ports have critical needs, yet current revenue models, on average, do not generally support the expense of these types of projects. And to make matters more challenging, there is a high demand and competition for federal funding and ever-increasing permitting timelines and complexities.

A Tale of Two Piers

At the POE, maintenance demands across aging pier infrastructure, particularly at Pier 3, are exceeding sustainable levels. Over the next 10 years, the Port anticipates needing to spend approximately $15 million to $50 million on maintenance activities just to preserve or re-establish baseline functionality, including structural repairs and reinforcements. This does not account for more comprehensive modernization needs or necessary seismic upgrades, which has a total price tag of over $150 million. Inaction or delay carries a growing opportunity cost: Pier 3 is currently operating under reduced load capacity due to derated sections, which limits its commercial utility for current and potential new bulk, breakbulk, and shipyard operations. Meanwhile, capital improvements have been delayed due to long lead times in permitting and limited access to state and federal funding for non-expansion projects. Current gross revenues of $3.5 million per year associated with Pier 3 simply do not support these costs. At the high end, if we assume a generous operating margin of 25 percent, this facility nets about $0.875 million per year - making a payback period for the $15 million minimum necessary maintenance project 17 years, and the rebuild of $160 million to be a whopping 180 years. Clearly, this does not take into account the economic or national security spin off benefits, but it is clear that current revenues alone do not support the reconstruction effort.

While the POE operates in a saltwater marine environment, the POV's pier is in freshwater with minimal tidal swings. These unique environmental and operating variables significantly impact the overall condition and can accelerate the aging of the respective infrastructure. This contributes to a lower overall maintenance expense at the POV being around $9 million over the next 10 years when compared to the POE scenario. However, the capital maintenance expenses are similar and anticipated to exceed $50 million, not including improvements or modernization efforts exceeding $75 million for Pier 8/9 alone. Over the next 10 years it is estimated that the POV's modernization and improvement efforts across the entire port will exceed $500 million. Assuming a 20 percent return on investment (ROI) for the Pier 8/9 project, the port would need to generate $15 million in net revenue beyond the initial estimated capital expense of $75 million. With current and anticipated breakbulk and heavy cargo commodity volumes, the associated payback is well over 30 years.

Table 2 – *Payback Period for Maintenance and Modernization Projects*

Metric	**Port of Everett (Pier 3)**	**Port of Vancouver USA (Pier 8/9)**
Total Maintenance Need (10 yr)	$15 million	$5 million
Total Modernization Cost	$160 million	$75 million

Annual Gross Revenue	$3.5 million	$7.25 million
Annual Net Revenue	$0.88 million	$2.25 million
Payback for 10 yr Maintenance Plan*	17 yrs	2.2 yrs
Payback for Modernization*	180 yrs	33 yrs

* Does not consider the inherent variabilities of inflation, berth utilization, and tariffs, which could have a significant impact on the on the duration of the payback period.

As demonstrated by the analysis presented in Table 2 and the results of The Survey, financial return on investment isn't the right metric for these projects. Piers like those at the Ports of Everett and Vancouver are vital regional and national assets, with long payback periods not acceptable in the private sector, which is why most port facilities around the U.S. are publicly owned. Their true return lies in economic development, job creation, national security, and disaster resilience. These public benefits far exceed what port revenues alone can support, making state and federal funding essential.

Timelines and Strategic Impacts

The Ports of Everett and Vancouver are focused on pier facilities because they face substantial business demand as well as business risks, and unfortunately there is no fast-food drive-up-window, no Amazon next-day-delivery, and no magic wand to alleviate these challenges. To seize opportunities and overcome risks, complex planning and engineering, time intensive permitting, and huge capital investments are generally required. In short, the reaction time required to respond to either a new opportunity or an emerging risk is incompatible with the lengthy delivery timelines for waterside infrastructure projects. Both the POE and the POV have experienced this firsthand, highlighting the need for a sustained proactive approach. This is also reflected in The Survey which showed nearly 50 percent of respondents are challenged by regulatory and permitting complexities, which inevitably equates to extended permitting timelines and potentially regulatory impediments.

In Everett's case, Pier 3 is challenged by DEF and maintaining current operations is at risk if further deterioration continues, and accommodating expanded tenant operations faces significant challenges. Pier 3 is a stable source of revenue and job creation, facilitating upwards of nine percent of the terminal's operating revenue and more than 200 direct jobs associated with the shipyard, with a significant number of those direct jobs are tied with the bulk cement operator. However, without substantial maintenance or reconstruction, the load restrictions on this pier are likely to expand over time. The worsening load restrictions could severely limit economic activity on the shipyard's use of on-dock cranes, moorage of drydocks and other vessels, and storage of materials; whereas, the cement off-loading tenant may have restricted areas for off-loading ships, which

could limit the size of vessels they unload, reducing productivity and tonnage throughput. Additionally, the POE's future plans for this facility involve increasing the diversity of breakbulk cargo handling and expanding the shipyard operations to serve larger naval vessels and ship building, which in turn could make this pier facilitate a larger share of the Ports terminal operating revenue and substantially expand job creation of shipyard employees. For example, a 2025 economic study (Martin Associates, 2025) indicated that a potential expanded use of the shipyard, involving a contract to construct a new Washington State Ferry, could result in the creation of 577 new direct jobs (shipyard employees and subcontractors). The sustained condition of Pier 3 would be required to realize those jobs.

For the POV, Pier 8/9 is the primary breakbulk wharf and is a stable source of revenue providing over six percent of the port's annual revenues. The diverse cargo mix handled across the wharf has weathered market fluctuations for years making it extremely dependable for the port. Unfortunately, the structurally deficient pile caps have reduced the utility and essentially removed the ability for the port to maximize the use of the structure to handle project cargo with the port's mobile harbor cranes. Redeveloping Pier 9 into a heavy cargo dock further complicates Pier 8 operations due to required vessel berthing configurations and requires the open panel in Pier 8 to be infilled just to maintain current operational efficiencies. To maximize the utility of the pier and realize its full rated capacity, the pile caps will need to be wrapped with fiberglass reinforced plastic (FRP)to increase the piers operating rating so mobile harbor cranes can be operated. Seismic or structural failure of these piers would place the port at a significant disadvantage to other nearby ports handling similar commodities, the ability to generate revenue, and eliminate the potential to assist in any emergency response for a natural disaster. Further, it would require all breakbulk cargo to shift to Pier 3 on Terminal 2, the port's primary project cargo pier, increasing terminal congestion and the cost to dray cargo back to Terminal 3 for storage.

Opportunities vs. Reaction Time

In most cases, commercial or national security demand for pier facilities arises on timelines far shorter than those required to deliver corresponding marine construction projects; not to mention these facilities need to be fully functional prior to any national or regional emergency response effort. Typically, new business opportunities require infrastructure within 24 months given common business planning horizons and markets; whereas, in Washington State, even mid-sized pier projects often require three to five years from inception to completion due to permitting constraints and complexity, financing hurdles, and in-water work restrictions. This mismatch between opportunity and delivery time presents a critical challenge: the Ports are frequently unable

to respond quickly enough to capture or support operations that could bring substantial economic or national security benefits. Further, making it extremely difficult, if not impossible, to precisely calibrate the scope and scale of infrastructure improvements to align with the operational requirements of future activity. As a result, ports face significant risks of overcapitalization or undercapitalization, inefficient allocation of limited capital resources, missed opportunities, and, in the worst case, the creation of stranded or underutilized assets.

Opportunities at the POE have ranged from new agricultural bulk product import to expanded shipyard activities, both of which have been affected by the infrastructure limitations of Pier 3. The Port has struggled to develop project permitting documents because of the lack of certainty in the future operational requirements of the pier and the availability of critical external funding - both of which are prerequisites for justifying project permitting scope. As a result, the three-to-five-year project development process has not yet begun, limiting the Port's ability to compete for time-sensitive commercial and national security opportunities that exceed the pier's structural capacities. Opportunities at the POV have ranged from bulk mineral exports, heavy cargo imports/exports, project cargo imports and new breakbulk cargo imports. These opportunities have also not progressed either as a result of permitting and construction schedules exceeding customer requirements or project costs outpacing paybacks. The port simply can't react fast enough, necessitating the need to improve permit certainty and schedule. The design and permitting expense for each effort can easily exceed a few million dollars depending on the scope and if the project requires additional upland development. The Port's Pier 8/9 project is being redeveloped to diversify cargo mix, improve the port's natural disaster resiliency, and increase commercial readiness for project cargo.

Risks vs. Reaction Time

If a pier facility fails, it is too late. If a pier facility is at risk of failure, it is too late. Considering the fastest timeframe to deliver a marine construction project is multiple years, maintaining an industrial pier facility that supports both commercial and military operations is critical to ensuring national security, economic resilience, and worker safety. These multi-purpose facilities are critical to certain supply chains, enabling the efficient movement of heavy and high-value cargo essential to manufacturing, infrastructure development, and national defense objectives. On the commercial side, such infrastructure supports job creation, trade flow, and regional economic stability. Any degradation or failure of these facilities can cause cascading disruptions—delaying mission-critical operations, jeopardizing safety, and increasing vulnerability to natural disasters or geopolitical shocks.

Risks at the POE involve continued de-rating of the Pier, which could cause decreased utilization and productivity of the tenant's use of the pier. And further structural degradation could emerge and may not be

detected early enough to prevent failure or damage of the pier. Additionally, the Port of Vancouver and Everett terminals and piers are constructed in highly susceptible liquefiable soil zones which would likely contribute to failure of the structure from a Cascadia Subduction Zone (CSZ) earthquake which will reach an approximate 9.2 magnitude for up to seven minutes. This would eliminate both ports' ability to provide any assistance for a marine emergency response to potentially isolated inland communities, ultimately delaying critical aid. This is highlighted in the 2019 WA State Department of Transportation's Regional Resiliency Assessment Program (RRAP) for port infrastructure (WSDOT RRAP, March 2019).

Short, Medium and Long-Range Infrastructure Planning Efforts

There are different industry planning models for port planning and development. But the typical planning processes include a Master Plan, Strategic Plan, and Capital Improvement Plan, representing long-, medium- and short-range port plans. However, in order to properly approach project or facility specific plans, detailed alternatives are needed to evaluate engineering options, operational alternatives, cost estimates, cost benefit analysis, permitting requirements/ strategies, capital funding options, and environmental and community impacts. All of this information can be used to generate short, medium and long-range plans and strategies. These types of analyses are usually a substantial expense in terms of staff and consultant resources, so they must be planned in advance. They typically need periodic updating, and each iteration commonly results in additional studies or project alternatives.

With so much at stake, and in the face of changing market conditions and national security conditions, regulatory changes, limited port funding availability, and evolving federal funding concerns, linear and traditional planning models have proven to be largely ineffective and cannot be relied on. These types of problems require a high degree of adaptability and strategic foresight to create actionable options. Both the POE and the POV are actively engaged in dynamic planning efforts, evaluating how best to modernize, reinforce, or repurpose the piers to meet today's demands.

Port of Everett – Planning Efforts

The POE has studied Pier 3's degrading condition and future plans for many years, though progress was historically limited by lacking investment in comprehensive structural evaluations. Until 2023, the Port lacked the detailed engineering necessary to fully understand the scope of degradation or to evaluate cost-effective solutions. Over the past two years, however, the Port has completed significant engineering studies, including comprehensive under and over water inspections and three-dimensional structural modeling, which now provide a complete picture of the pier's structural condition. Analyzing the structure at this level was the missing

piece to making risk-based use-case decisions on current operations and being able to selectively analyze specific portions of the structure for maintenance and upgrade. Based on this body of work, the Port has developed a range of repair and replacement alternatives, accompanied by potential phasing strategies, that are both technically feasible and likely responsive to current and future operational demands. Each alternative took into consideration the scaling of the project to meet certain grant funding limits and permitting agency acceptability.

Following completion of the studies, the Port completed a Marine Terminal Master Plan Addendum in 2025 that included planning future operations in and around the Pier 3 area. With this information and public process in-hand, the Port is in a good position to start its next level of planning but must be prepared to pivot to new alternatives or modified alternatives to meet new operational or funding considerations. To assist in the short, medium and long-range planning effort, the POE in conjunction with its engineering and permitting consultants, developed a comprehensive alternatives analysis. In basic terms, the options are:

- Alternative 1 - Reinforce piles that are determined to carry no operational load by installing two new adjacent piles that are tied into the pile cap. Permitting requires two years and a total estimated expense of $15 million.
- Alternative 2 - Reconstruct a section of the pier that would support current known operational demands by installing new piling and a new section of concrete decking. Permitting requires two years and a total estimated expense of $30 million.
- Alternative 3 - Reconstruct 25 percent of the pier as part of a 4-phased reconstruction process by installing new piling and new sections of concrete decking. Permitting requires three years with an estimated expense of $40 million.
- Alternative 4 - Demolish and replace the entire pier. Permitting requires three years and total estimated expense of $180 million.

Each concept has pros and cons as it pertains to cost efficiency, operational continuity impacts, seismic resilience, and stormwater management. In alternatives 1 and 2, the costs are more manageable in the short term and maintain operational continuity, but the end result does not bring the seismic design or stormwater management to current standards. Alternative 3 costs are a bit higher than alternative 2, but it allows for operational continuity, starts to put in place infrastructure that meets current standards for seismic design and stormwater management. Alternative 4 meets the seismic design and stormwater standards but does not allow for operational continuity and requires a very high capital outlay. Given the capital constraints, the port's short-range plan will be to pursue permitting and construction of Alternative 1 and permitting the reconstruction of

the entire pier in phases, which may prove to be challenging and not acceptable to the resource and regulatory agencies.

With these alternatives in hand, the Port pursued but was unsuccessful with its Port Infrastructure Development Program (PIDP) grant application in 2024 but will try again in 2025. The POE will look to PhilaPort for inspiration in perseverance, who in The Survey, disclosed it required 12 grant applications to finally be awarded federal funding in 2021.

Port of Vancouver USA - Infrastructure Planning

During the POV's West Vancouver Freight Access (WVFA) project from 2008 to 2018, a decision was made due to limited resources to prioritize funding the rail improvement project. Since the WVFA completion in 2018, the port has re-focused on pier and wharf maintenance and developed the Terminal Rehabilitation Improvement Program (TRIP). The TRIP prioritizes the deferred pier and wharf maintenance requirements including structural assessments for each pier, identified upgrades to improve environmental sustainability and operational efficiencies. During the TRIP planning exercise, the panel openings in the wharf at Pier 8/9 were identified for infill along with structural upgrades to improve safety, seismic resiliency and operational efficiencies resulting from the structural assessments. Over the past several years, Pier 8/9 has been involved in four major planning efforts to improve safety, seismic resiliency, operational efficiency, business continuity and meet market demand without completion. The barriers are very similar to that of the POE, the complexity of permitting and the availability of capital funding to advance the permitting, design, and construction.

The POV approaches short, medium and long-range planning efforts utilizing the port's TRIP along with capital budget forecasting which evaluates and prioritizes the deferred pier and wharf maintenance requirements. This includes structural assessments of each pier, identified upgrades to improve safety, structural deficiencies, environmental sustainability, seismic resiliency, and operational efficiencies. With this approach, the port identified several project alternatives (phases) that can stand alone or be added or removed from a larger Pier 8/9 redevelopment project, including:

- Maintain current operations, understanding there will be structural limitations, seismic resiliency risk, and reduced project cargo utility.
- Fiber-Reinforced Polymer (FRP) reinforcement wrap would be deployed to reinforce the structurally deficient pile caps, restoring the wharf to its full rated capacity of 1,000 psf. Permitting requires two years with an estimated expense of $4.1 million.
- Infill the Pier 8/9 panel openings to increase operational flexibility, improve safety and seismic resiliency. Permitting requires two years with an estimated expense of $20 million ($10 million per

panel)

- Complete redevelopment with Pier 8 panel infill and FRP wrap, and Pier 9 reconstructed for heavy cargo. Permitting requires three years with an estimated expense of $75 million and is expected to be refined as the design develops beyond 30 percent and value engineering is completed.

Each alternative has pros and cons as it relates to funding, permitting schedules, construction schedules, market readiness, environmental sustainability, safety, operational efficiencies, and seismic resiliency.

Organizational Structure and Necessary Mindset

These are challenging, high stakes projects that require a multidisciplinary team that draws upon nearly every functional area within a port organization. While the Ports of Everett and Vancouver have different organizational structures, the basic categories of stakeholders are similar, and each involves a wide array of staff and external resources. Key contributors include:

- **Commission** sets policy, sets strategic plan, and approves the budget
- **Executive leadership** establishes priorities, and ensures alignment with long-range strategy
- **Commercial/Business** development evaluates market demand, cargo potential, and tenant interest to inform design and financial feasibility
- **Planning, engineering, environment** oversees project delivery: leads condition assessments, project scoping, master planning, phasing strategies, infrastructure feasibility, coordinates permitting, environmental reviews, mitigation planning, and regulatory consultations.
- **Terminal Operations & Maintenance** oversees project delivery from operations side: provides operational input, identifies urgent repair needs, tracks wear-and-tear indicators
- **Finance & Budget** teams assess capital capacity, models lifecycle costs, and manages debt planning
- **Grants Administration** identifies and leads/supports the securing of funding, helps align projects with state/federal priorities
- **Government Affairs & Lobbyists** advocate for policy support and appropriations.
- **Procurement/Contracts and Legal** support contracting, tenant contributions, and lease or contract negotiations
- **Expert Consultants** supports conceptual planning, design, permitting, construction, and cost estimation

Traditionally, leadership sets the strategic direction via a strategic plan or capital plan, and ensures alignment with broader financial and policy goals, and a project team carries out the project. While these basic

traditions hold true and leadership certainly provides direction, it is not a "set it and forget it" situation. Due to the complex operating environment, it is commonplace for changing conditions, new knowledge, and new opportunities to emerge with some level of frequency. The multidisciplinary team must understand this from the outset and ensure the proper mindset for the endeavor. What the POE and the POV have determined is there is no single solution to these projects. Essentially the stars must align by virtue of influencing or taking advantage of policy changes, grant funding opportunities, and business opportunities, requiring the staff and consultant team to remain flexible, creative, and opportunistic.

Being a relatively small organization and the importance of this project, the executive team responsible for the POE Pier 3 project includes the Chief Executive Officer, Chief Financial Officer, Chief of Operations, Chief of Planning and Development, Chief of Engineering and Construction, and Government Affairs Manager. The POE hired a consultant team that has a wide range of expertise, including structural, civil, geotechnical, electrical, and operational engineering, regulatory, biological, and environmental experts, economists, and state and federal lobbyists.

POV's core project delivery team flexes based on the type of project. Maritime projects at the port are typically driven from either a commercial or maintenance need with commercial projects being broader in scope and expense. The Pier 8/9 project has involved the C-Suite officers as well as a multi-disciplined consulting firm, similar to the POE, in addition to our in-house engineering and project delivery teams led by the Director of Engineering. Each project team also incorporates representatives from Government Affairs, Finance, Grants, Contracts, Maintenance, Environmental, and Terminal Operations Departments.

At both the POE and the POV, this integrated cross-functional model requires input from all levels in the organization and ensures that long-range pier infrastructure solutions are not only technically sound and environmentally compliant, but also fundable, flexible, and responsive to real-world operational needs.

Marine Construction Considerations

There are several key construction considerations that should be considered when planning these types of infrastructure improvements. As stated earlier in this document, specific technical or engineering details are not explored in this paper, so this section provides just a few high-level concepts that are critical to understand and generally applicable across the port industry.

At both the POE and the POV, a range of alternatives has been explored for each pier, from targeted repairs to full replacement, each with distinct tradeoffs in terms of upfront costs, resilience/ longevity, and operational impact. Evaluating these options requires thoughtful consideration of

economies of scale, while smaller investments may appear cost-effective in the near term, they often defer rather than resolve underlying issues, whereas larger, more comprehensive projects can unlock long-term value but require greater upfront capital, challenges to ongoing operations while construction is occurring, and longer permitting timelines. Compounding the complexity is the evolving nature of marine construction itself. Stricter International Building Code (IBC) structural codes, restrictive in-water work windows, new requirements for stormwater infrastructure, and a shrinking skilled labor force all contribute to significant cost escalation and extended delivery timelines. Understanding these dynamics is critical to developing resilient solutions.

- **Stricter IBC:** Required seismic resiliency, which has significantly increased construction costs. In both Everett and Vancouver's case, lower cost and less comprehensive alternatives do not bring the structures up to current IBC code, limiting their usefulness to certain clientele, including the Department of Defense, which generally require the structures to meet the current IBC seismic design requirements.
- **Narrowing In-Water Work Windows in the Pacific Northwest:** Environmental regulations continue to tighten the seasonal windows for in-water construction activities, which leads to multi-year phasing or compressed schedules, increasing labor and mobilization costs.
- **Evolving Stormwater Infrastructure Requirements:** New regulations require integrated stormwater treatment in pier or wharf projects, especially during substantial upgrades, which adds significant complexity and cost, particularly on legacy piers not originally built with stormwater considerations; and piece meal upgrades can complicate or preclude modernization of stormwater conveyance and treatment systems.
- **Shrinking Skilled Labor Force:** Anecdotally, there appears to be a national shortage of marine construction workers and contractors which results in fewer bids and a price premium.

All of the above factors contribute to rising costs per square foot or per pile compared to historical benchmarks. Cost inflation makes "deferred action" strategies riskier, as today's budget stretching upgrade may become tomorrow's unaffordable rebuild.

Permitting and Regulatory Considerations

Permitting marine projects is complex, time consuming, and can often be a deal breaker for a project with the time to market exceeding a customer's requirements. The time to market in some regards is just as vital and valuable as the financing to perform the work. Acquiring environmental permits for a project can take anywhere from one to three years in addition to construction permits from your local jurisdiction. In recent years, in the Pacific Northwest, applicants have experienced long federal agency review times, between three to

five years, in relation to recent policy making by National Marine Fisheries Services explained in further detail below. To complete projects at both the POV and the POE may require as many as 17 different permits and processes (federal, state, and local) to ensure all requirements have been met. This is highlighted by the POV's permit tracking matrix which can be found in Appendix C. Based on this, it is not surprising that 50 percent of the respondents from The Survey indicated that permitting challenges, complexities and delays are a major barrier to making investments in their waterside infrastructure. While both ports have been extremely successful in obtaining and permitting projects, there are three specific areas that the authors would like to highlight that have added significant challenges:

- **National Marine Fisheries Service (NMFS):** In 2018, Ports and others in the maritime industry, faced a substantial policy change as it pertains to how NMFS interprets environmental baseline conditions when conducting Endangered Species Act (ESA) reviews for Corps of Engineers permit applications. Specifically, NMFS considers the environmental baseline condition of pre-existing waterward structures, like piers or wharves, as if they do not exist. This interpretation dramatically expands permit mitigation requirements for maintenance or replacement projects of the pre-existing structure. Since the policy change implementation in 2018, many permits, including those of the POE have been held up by NMFS for three to five years beyond the normal permitting process. This change in federal policy is being challenged as of the date of this paper by industry organizations such as Pacific Northwest Waterways Association as it directly affects the ability of the maritime industry to conduct infrastructure development.
- **Clean Water Act Citizen Lawsuits (CWACL):** Ports in the Pacific Northwest and elsewhere, including the POE and the POV have been the targets of CWACL that, while framed as environmental enforcement, often exploit minor administrative or procedural issues rather than addressing actual harm, where a simple administrative mistake can equate to a maximum $64,618 per day/ per violation civil penalty. These extreme penalty maximums are used as legal leverage against public ports where attorneys have a financial incentive to file claims due to the Clean Water Act's attorneys fee provisions, forcing the defendant to settle regardless of the legitimacy or severity of the claims. This dynamic creates a troubling imbalance, diverting public resources away from infrastructure improvements and toward legal defense, even when ports are actively working in good faith to comply with regulatory requirements. Both ports have been sued under stormwater-related CWACL highlighting the growing vulnerability of even well-managed public facilities to litigation risks beyond their control.

- **CWA Section 404 Wetland Mitigation Banking:** the environmental, societal and economic benefits of which have long been celebrated since laws allowing mitigation banks were created in the early 1990s. However, authorization of new banks has been extremely slow in the Pacific Northwest due to chronic understaffing and inefficient processes. The POE is currently working on an approval of a 353-acre estuary project that has been stymied by these very reasons. As expressed by the EPA, banks "Reduce uncertainty over whether the compensatory mitigation will be successful in offsetting project impacts; Assemble and apply extensive financial resources, planning, and scientific expertise not always available to many permittee-responsible compensatory mitigation proposals; Reduce permit processing times and provide more cost-effective compensatory mitigation opportunities; and Enable the efficient use of limited agency resources in the review and compliance monitoring of compensatory mitigation projects because of consolidation." (EPA, 2023). Mitigations banks are one tool that can greatly assist the permitting of port infrastructure, and as a result should be pursued, authorized and supported by the Ports and permitting agencies.

Despite the headwinds and complexity of the permitting and regulatory aspects of owning, operating and re-developing piers and wharves in the Pacific Northwest, the Ports of Everett and Vancouver are dedicated to diligently navigating through the aforementioned permitting processes and regulatory issues to deliver the critical functionality that supports thriving communities.

Port of Everett - Permitting and Regulatory Considerations

Permitting for POE's Pier 3 redevelopment will start in 2026 and will span a two-to-three-year period, depending on issues such as the NMFS baseline policy and permit processing time. Everett will be seeking a 10-year permit to allow for phased maintenance and restoration of the pier to allow the necessary time to obtain financing. The other benefit to a 10-year permit is the Port will be in a position to respond more quickly to emerging maintenance issues or business opportunities, positioning Everett to "right size" the improvements to meet current and emerging business and national security opportunities as they arise. The downside to assembling a 10-year multiphase project is the risk of excess cost of over-permitting and the potential additional time required to analyze a bigger project with more environmental impacts; however, the strategic value of a 10-year multiphase permit would be immense.

Port of Vancouver USA - Permitting and Regulatory Considerations

Permitting for POV's Pier 8 capital improvement and Pier 9 heavy cargo redevelopment started in May2025 and will span three years and be complete with the NEPA process in August 2028. The construction

effort will span two in-water work windows with an estimated completion in January 2031. In total, the project effort will span nearly six years. During this time frame the following challenges can be expected: federal administrations will change, the economy will shift, and global markets will have impacts. This highlights the need to streamline permitting processes that encompass the same requirements but entail shorter time frames to minimize the impacts from the aforementioned challenges.

Government Affairs

Effectively navigating marine infrastructure planning requires more than just engineering and regulatory compliance, it also depends on strategic engagement with government stakeholders. Government affairs teams, both internal and external, play a vital role in building relationships, securing political support, shaping policy, and ensuring that port priorities remain visible in federal, state, and local agendas. This function becomes particularly important when the regulatory environment is evolving, infrastructure needs are outpacing available funding, and long-term success depends on sustained public-sector support. By working closely with lobbyists, consultants, and elected officials, ports can help preserve and enhance awareness of their mission, advocate for targeted legislative and programmatic changes, and align public policies with the operational and economic realities of maritime logistics.

Port of Everett - Government Affairs

At the POE, Government Affairs staff play a key function to elevating the importance of Pier 3 and the broader seaport within state and federal priorities. The Port has federal and state lobbyists and in-house government affairs staff who maintain an active presence in the Washington State capitol in Olympia, Washington and in Washington, D.C. individually and through consistent engagement with Washington Public Port Authorities (WPPA) at the state level, and American Association of Port Authorities (AAPA) at the federal level – they work diligently to educate decision-makers on the facility's dual economic and national security roles. The Port has also recently worked closely with the Pacific Northwest Waterways Association (PNWA) as it pertains to the NMFS baseline issue. The Port also works and coordinates closely with the U.S. Department of Transportation's Maritime Administration (MARAD) to ensure that funding mechanisms and permitting policies are aligned with the realities of working piers and industrial waterfronts.

Port of Vancouver USA - Government Affairs

POV government affairs priorities are currently focused on water and marine infrastructure, freight policies and funding, economic development, tourism, energy and environment, and maintaining

relationships with congressional delegates. The port utilizes in-house government affairs staff, two of which have extensive experience as advisors to state and federal legislators, and our executive leadership team. While externally, the port collaborates with both federal and state lobbying firms to advocate for the port's interests. This work has been instrumental in supporting MARAD PIDP grant applications for Piers 8 and 9, securing Washington State appropriations funding, hosting site visits, and briefings. The port is also active in WPPA, AAPA, and PNWA. Participation in regional infrastructure coalitions have also helped establish the POV as a critical asset to the Columbia River system and the Pacific Northwest freight corridor.

Financial Approaches

Financing large-scale marine infrastructure projects presents a formidable challenge for ports, especially when existing revenues and cargo throughput cannot fully support the scale of investment required. To bridge the gap between operational needs and funding availability, ports must pursue a layered financial strategy that leverages public grants, debt instruments, and on occasion private investment and tenant contributions. Grant funding from federal and state programs, such as the Port Infrastructure Development Program (PIDP), INFRA, and state-level clean energy or freight mobility initiatives, have become critical tools. In parallel, some ports are exploring innovative approaches including revenue-backed bonds, infrastructure bank loans, and public-private partnerships (PPPs). As part of The Survey, respondents contributed to the conversation of how ports nationwide are financing their pier and wharf upgrades. Of the respondents that completed projects in recent years:

- 83 percent used Port operating funds,
- 57 percent used federal grants,
- 47 percent used on state funding,
- 24 percent used revenue or general obligation bonds, and
- 13 percent used tenant investments.

The responses reflect a strong use of multi-source funding strategies.

Port of Everett - Financial Approaches

The Port has been actively planning, cleaning up, and redeveloping its waterfront with a vision of renewal and revitalization. A key element of this effort is the pursuit of a "balanced waterfront," which strategically consolidates Seaport and industrial operations into a defined working waterfront zone, while establishing a separate, publicly oriented mixed-use area that enhances community access, recreation and compatibility. The nearly $1 billion cleanup and redevelopment of the mixed-use portion of the waterfront is

largely supported by grants, loans, bonds, some Seaport revenues, and investments by private partners. This redevelopment effort is critical to respond to the public's strong desire to have access to the beautiful waterfront. This balance, while critical to the success of the Port and its constituents, puts a strain on the availability of funding to handle the cost of other major capital projects at the Seaport.

Financial planning concepts for the future of Pier 3 have included state capital budget appropriations and PIDP grants, as well as exploration of a range of other approaches such as revenue bonds, loans, deferred lease models, and tenant private investment. Given that the annual revenues generated from existing operations ,$3.5 million gross and $0.875 million net, clearly do not support the scale of required investment, ranging from $15 million for Alternative 1 to $160 million for Alternative 4, the port has focused on aligning projects with federal infrastructure priorities and pursuing these opportunities as they emerge. In essence, the port is working to plan and permit projects that align with funding windows, policy priorities, and stakeholder interests. The port applied for a PIDP grant for Alternative 1 (described above) in 2024 for a total of $12.5M that was not awarded. The Port will try again for the second time in 2025.

Port of Vancouver USA - Financial Approaches

As the port prepared for a $250 million rail expansion project in 2009, the community overwhelmingly rejected the port using a Industrial Development District Tax Levy to fund the project. In turn, the POV self-funded the project along with approximately $60 million in federal and state grants. Ultimately this large capital expenditure has required the port to strategically prioritize future port development and capital maintenance and continue to seek larger funding streams utilizing mechanisms such as grants, public private partnerships, and Tax Increment Financing (TIF) to complete the necessary capital improvements. For the estimated $75 million plus or minus Pier 8 capital maintenance and Pier 9 redevelopment effort, the financial model will include a mix of self-funding (approximately $45 million) and target a $30 million PIDP grant. Modernizing this pier system is essential to maintaining competitiveness in the project cargo market and adds to the port's cargo diversification. The port works closely with MARAD to receive feedback on applications that have not been awarded to ensure the project is right sized and has a positive benefit cost analysis. Depending on the type of project, the port also considers other financial funding tools such as General Obligation or Revenue Bond issuance, Tenant Investment and now TIF. The Port's financing approach is balanced and reflects readiness, creativity, persistence, and strategic alignment to available funding pathways.

Leases and Business Approaches

The condition and long-term viability of marine infrastructure is closely tied to the business

agreements that govern their use. Leases, licenses, and operating agreements not only dictate how tenants access and utilize port assets, but they also influence the timing and scale of maintenance and capital investment. The structure of these agreements, whether short-term or long-term, net or gross, fixed or performance-based, can either enable reinvestment or constrain it. It is important to recognize the challenges of having multiple operations with differing lease terms in the same general vicinity. This section explores the business terms associated with the piers at each port and how those arrangements have shaped operational priorities, investment decisions, and risk management.

Port of Everett - Leases and Business Approaches

At the POE, Pier 3 is essentially split lengthwise down its centerline. The northern half is under an exclusive use lease agreement with the shipyard operator, and the southern half is under a non-exclusive lease agreement with the dry bulk cement operator. The two are separated by a fence, where the shipyard on the northern half is not federally secured and the non-exclusive southern half is federally secured, allowing for diverse operational use in addition to the dry bulk operation. Key lease provisions are explained below.

- The dry bulk operator has preferential use rights to the southern berth and southern half of Pier 3 during operations. It is responsible for the operation and maintenance of the on-site equipment, while the Port provides ILWU labor for vessel unloading and recovers associated costs through Wharfage and Services & Facilities (S&F) fees. As it pertains to environmental provisions, the bulk operator operates under the POE's marine terminal wide NPDES permit. To do so, the operator pays a set fee of approximately $200K per year to the Port to cover the operational requirements of the permit and possibility of an agency mandated corrective action that would involve the construction of stormwater collection and treatment systems. While the operator bears all operational costs, including those related to its facilities and activities, the lease includes specific provisions regarding Pier 3's condition. The Port is responsible for routine inspections and any repairs, replacements, or refurbishments necessary to keep the pier functional for dry bulk operations. If the Port chooses to discontinue maintaining the pier, it must provide a maintenance termination notice, after which the tenant may either assume responsibility for pier maintenance (triggering a rent reduction and lease extension) or terminate the lease. Thus far, no maintenance termination notice has been provided.
- The shipyard operator has exclusive use of the northern berth and northern half of Pier 3, and is solely responsible for all operations and maintenance related to its facilities, including its floating dry dock, mobile cranes, and upland support equipment. Unlike the dry bulk operator, the shipyard operates under a separate stormwater permit and not under the Port's terminal-wide NPDES

permit, thereby assuming direct regulatory responsibility for its stormwater discharges. The lease assigns the Port responsibility for conducting routine structural inspections of the pier and for maintaining the pier in a condition that is safe and suitable for general maritime industrial use. However, the lease explicitly limits the Port's responsibility to non-tenant-caused deterioration. The shipyard does not contribute to a shared fund for major pier repairs but must comply with any access restrictions placed by the Port for safety or maintenance purposes. No formal mechanism is included in the lease for the shipyard to assume pier maintenance if the Port discontinues it, making coordination essential as the pier ages and structural limitations evolve.

With two operators sharing the same pier, each with differing access rights, operational profiles, and stormwater permit obligations, inevitable tensions arise. These can range from challenges in coordinating expanded use of shipyard work and overlapping activities, to disparities in regulatory scrutiny and environmental compliance. For example, one operator may be subject to more stringent stormwater requirements or air emissions oversight, while the other is not, leading to perceived or actual inequities. Additionally, the risk of third-party complaints or lawsuits, particularly around stormwater discharges or air emissions, may target only one operator, even if both may contribute to site-wide impacts or vice versa. These dynamics are challenging at the staff and executive level and highlight the importance of crafting clear lease terms, coordinating environmental management, and trying to maintain productive communication among tenants and the port.

Aside from specific lease terms and obligations, the POE like many ports, develops an annual capital improvement program budget that contains numerous capital improvement projects, and forecasts out approximately five years. Within the capital improvement plan budgets, the POE also includes a programmatic maintenance budget that is set aside for each operation and is utilized for projects typically up to $500K. Therefore, the maintenance work needed for the Pier would fall within the capital program budget either as a standalone CIP or would come out of the programmatic maintenance budget.

Port of Vancouver USA - Leases and Business Approaches

The POV employs different business approaches, depending on the terminal and respective pier location, from non-exclusive leases to layberth operating agreements for its piers. Each comes with different commercial terms and maintenance responsibilities between the parties. The POV has leased its terminals and respective general cargo, project cargo and breakbulk piers and wharves to stevedores in the past which is often referred to as a Landlord Port as opposed to an Operating Port that manages

its operations in-house. The POV's primary marine revenue sources are through the various contractual lease and operating agreements, often requiring minimum annual tonnage guarantees (MAGs), receipt and delivery (R&D) services, and assessment of the Port's Tariff in the form of Dockage, Wharfage, Service and Facilities (S&F), Storage and Security Fees associated primarily with vessel operations or cargo storage on the terminal after a free period has expired. With exception of the Security and Dockage fees, which are assessed per 24-hour period, other fees are assessed on cargo tonnage.

As an example of a Bulk Operator lease, the Grain Terminal and respective pier are leased to a bulk operator. Typically, non-exclusive pier leases are necessary when they are associated with an upland operating facility that has a 50 plus year industrial lease requiring long term stability and certainty as opposed to an exclusive use operating agreement with a much shorter time frame of ten years and no upland industrial lease. In these scenarios, the maintenance, dredging, repair, and improvements are typically the sole responsibility of the operator, unless otherwise negotiated. The lease operator is also responsible for their own NPDES and Washington State Industrial Stormwater General Permit (ISGP).

MARAD has an exclusive layberth operating agreement for Pier 17 at Terminal 5 for their Ready Reserve Fleet of Vessels. MARAD's facility operator is responsible for maintenance and repair of the facility while improvements are negotiated within the lease and operating agreement.

The POV currently utilizes a hybrid approach for the operation of our breakbulk, project and general cargo piers and terminals at Piers 8 and 9. The port contracts with a stevedore for our terminal receipt and delivery (R&D) operations giving the Port more control over the operation. Stevedores control vessel operations and coordinate the movement of cargo to "first place of rest" with the port while the port controls the unloading of cargo from trucks or railcars to the first place of rest for exports and from first place of rest to loading of trucks or railcars for imports also known as R&D Operations. R&D and vessel operations are performed under the terms of the port's published Tariff, which lays out the operating requirements, conditions, and fees for the movement and handling of cargo across the Port's piers and wharves. In the R&D scenario, the port is responsible for the maintenance, repair, and improvements of the wharf and terminal.

Like the POE, the POV develops separate annual maintenance and capital improvement program budgets. The capital maintenance improvement project budget contains numerous projects and is approximately $5 million dollars for 2025 while the annual programmatic maintenance budget averages around $500,000 dollars for this specific location.

Labor

Economic development is typically the primary mission of most ports, with job creation being

intertwined and not mutually exclusive. One of the larger direct recipients of job creation at ports are longshoremen through the hours they are hired to load and unload vessels, trucks, and railcars or perform various other functions as linesmen, clerks, checkers, berth schedulers, mechanics and even janitorial responsibilities. Breakbulk operations involve non-standard cargo sizes, making them labor intensive and time consuming in comparison to more efficient container handling operations with lower labor costs. Ports across the United States are reliant on global supply chains that have a major impact on their regional economies as well as the nation's economy as an industry. Highlighted by Cary Davis', CEO and President of AAPA, testimony to the Department of Homeland Security, "According to a recently released economic contributions report from former CBO economists, our ports are responsible for $2.89 trillion in economic activity and 21.8 million American jobs, or more than one out of every eight jobs in our nation's workforce." This places the longshore in a unique position of leverage and ability to both negatively and positively impact supply chains and their respective economies.

Except for some Gulf ports in the United States, maritime ports generally fall under the jurisdiction of one of the two primary unions that represent this longshore labor component. On the East coast, port labor is organized by the International Longshoremen's Association (ILA), founded in 1892, representing over 85,000 members and on the West coast, port labor is organized by the International Longshore and Warehouse Union (ILWU), founded in 1937, representing approximately 29,000 members (Wikipedia, 2025). While some Operating Ports are Pacific Maritime Association (PMA) members, the POV is not. Labor hired to perform the jurisdictional work of the union is typically done through a PMA member, typically a stevedore. The POE is an exception to this rule and can hire labor directly for their Pier 3 operations even though they are not PMA members.

The PMA are essentially labor brokers representing the employers (international and domestic carriers, terminal operators, stevedores, and operating ports) side of the collectively bargained contracts with the ILWU. Stevedores hire labor through the PMA from their local halls daily to load and unload vessels or complete other tasks as required by the port. As is the case at the POE's Pier 3, where Stevedoring Services of America (SSA) hires the ILWU for the discharge of the bulk material operation. However, their Shipyard on the other side of the pier has unionized trades and not ILWU. This creates challenges when material is being moved from vessels under the Shipyards control as the ILWU views this as "cargo" and under their jurisdiction in the Everett Harbor. These challenges are usually resolved without incident but have the potential to cause labor unrest and should be closely monitored.

Most cargo operations on the piers are completed under the direction of ILWU labor. Skill levels vary from highly skilled and experienced crane and lift operators and mechanics to general dock

workers. At both ports, infrastructure and pier maintenance is typically performed by port employees represented by the various trade and craft unions such as the Laborers International Union of North America (LIUNA) - Laborers, International Brotherhood of Electrical Workers (IBEW) - Electricians, International Union of Operating Engineers (IUOE) Equipment Operators, and the United Brotherhood of Carpenters (UBC) - Pile Bucks and Carpenters.

The ILWU is a driving force for infrastructure improvements from both a safety and operational efficiency perspective. They take personal ownership in the wharves and piers to protect their interests and control the efficiency of an operation to ensure their position is understood and considered. They are a major stakeholder to any pier project, and it is critical to receive their input on modifications to piers, collaborate with them and leverage their voice to advocate for these improvements, grants or other funding opportunities. Take the time to meet with your ILWU/ILA Locals to understand their concerns and build good relationships and share with them how you are working to support their interests.

Exploring Solutions

Building on the challenges and opportunities outlined earlier, this section presents potentially actionable strategies to help the POE and the POV, and other ports in similar situations to successfully advance pier and wharf projects. The recommendations focus on policy changes, innovative permitting approaches, financing, and best practices. By adopting a proactive focus, policy-forward approach, both ports can pursue pier redevelopment despite aging infrastructure and limited resources.

Policy and Legislative Support for Ports

Many entities, past and present, have advocated to change policies and streamline permitting processes both on the agency side and on the applicant side. Some were successful, some were not. However, there has never been a better time than the present to consider old and new ideas given current political climates. The authors of this paper have identified several key areas of advocacy:

- Regulatory Reform to streamline federal permitting processes
- Adequately fund and staff federal and state regulatory agencies to support permitting processes
- Develop and deploy artificial intelligence (AI) tools to accelerate permit reviews
- Increased public investment in port infrastructure at small and medium sized ports

These are explained in further detail in the following subsections.

Continue to Advocate for Regulatory Reform

State and federal policy initiatives can create a more enabling environment for port maintenance and

redevelopment. A key recommendation is to continue to advocate for streamlined environmental permitting at the federal level. As evidenced in The Survey, port leaders nationwide stress that lengthy reviews are slowing critical projects, causing negative economic and national security impacts, and adding significant cost due to delays. In March 2024, a bipartisan bill (the Permitting Optimization for Responsible Transportation or PORT Act) was introduced to "clear a path to build and modernize ports and harbors faster" by cutting red tape. The CEO of the American Association of Port Authorities (AAPA) captured the sentiment, stating, "It should not take longer to permit a federally funded infrastructure project than it does to actually build it." Supporting such federal permitting reform – including "consistent and timely" multi-agency reviews and use of programmatic approvals – would greatly benefit the nation's ports by enabling them to improve response time to meet emerging risks and opportunities with better predictability.

Advocate for Regulatory Agency Funding

Legislative action should ensure regulatory agencies are adequately funded and staffed commensurate with, and contemporaneous, to regulatory reforms. Without sufficient resources at the U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service, NMFS, and others, permit reviews and environmental mitigation bank authorizations can languish. Recent federal staffing cuts at EPA and NMFS and other federal agencies resulted in the dismissal of hundreds of employees, including key permitting personnel. These reductions are expected to slow environmental reviews, delay infrastructure projects, and weaken the government's capacity to manage complex regulatory functions in the absence of commensurate and contemporaneous regulatory reform. The Pacific Northwest, in particular, faces stringent environmental reviews, so Congress and state governments must prioritize efficiency, now with a reduced workforce, to ensure environmental standards are not sacrificed.

Advocate for Investing in Artificial Intelligence to Assist Permit Review

At a time when federal staffing cuts have left permitting agencies with fewer experienced personnel, AI offers a potentially compelling opportunity to maintain both efficiency and analytical rigor in environmental review processes. By automating repetitive tasks such as public comment tagging, literature summarization, and document consistency checks, AI can help agencies focus limited human resources on higher-order analysis. Tools like Pacific Northwest National Laboratory's (PNNL) PermitAI are breaking ground by applying large language models to a searchable dataset of nearly 3,000 NEPA reviews, enabling rapid retrieval of precedent, semantic comment triage, and AI-assisted drafting, all while working to preserve the quality and defensibility of decision-making. According to PNNL, the

development of this technology is complex and expensive. Proper development and deployment of AI tools for this purpose should be sufficiently budgeted and planned for.

Analysis from a recent workshop on AI and its use in NEPA and federal permitting on April 29, 2025, (Pacific Northwest National Laboratory, 2025) underscores both its promise and its challenges. Key barriers identified in their report include inconsistent data standards across agencies, fragmented software systems, and concerns over the integrity and ethical use of AI generated analyses. Practitioners worry that over-reliance on automation could commoditize nuanced environmental decisions, weaken public trust, or displace entry-level talent. Nevertheless, significant opportunities emerged. PermitAI demonstrates potential for enhanced data management, increased process efficiency, and improved transparency through tools like automated milestone tracking. With thoughtful implementation, these tools could help modernize NEPA workflows, support agency missions, and scale across infrastructure sectors, even in a constrained staffing environment. It may also be able to eliminate human biases and enhance permit decision objectiveness. For these reasons, the authors of this report recommend advocating for federal investments in the development and deployment of AI tools to assist and accelerate permitting processes.

Advocate for Increased Federal Funding for Small to Medium Sized Ports

Small and medium-sized ports have large-port capital requirements. Small and medium-sized ports, like the POE and the POV, face persistent funding inequities that threaten their long-term viability. Unlike larger container ports, these facilities often operate with limited revenue streams, reliant on modest cargo volumes or niche operations, while facing disproportionately high per-unit infrastructure costs for maintaining aging piers, wharves, and related facilities. Despite their importance, they frequently struggle to access federal infrastructure dollars due to competitive grant structures that favor high-throughput metrics or matching fund requirements that exceed local capacity. To ensure equitable modernization and safeguard the national network of working waterfronts, federal and state programs must prioritize dedicated and scalable infrastructure funding streams for small and medium-sized ports, recognizing both their strategic value and financial constraints.

Advocate for Increased State Funding for Small to Medium Sized Ports

It is not uncommon that States provide a small percentage of their transportation budget to Ports. Washington is a good example, where its two-year transportation budget for fiscal 2025–27 allocates $15.5 billion, with approximately $9.2 billion dedicated to capital improvements, primarily highway and bridge expansion, preservation, and ferry systems, while port infrastructure and related freight enhancements receive a relatively small allocation. It is imperative that states recognize the importance of port infrastructure and increase funding for these critical facilities, especially at small to medium sized ports given their regional

importance to jobs and state and local taxes. A great example is the State of California and their recent $1 billion clean energy investment at seven ports in the state. This inequity makes it extremely difficult for small to medium sized ports in the PNW to compete with ports of similar size in California. In addition, the California ports are also competing for the same federal grant funds as the ports in the PNW.

Proven Strategies for Permitting

Given the complexity of environmental permitting cited earlier, both ports have experience implementing strategies to streamline and de-risk the permitting phase of pier projects. There are several existing approaches that are discussed below:

- **Programmatic Permitting** to allow a range of permitted activities that may be performed as needed - this has historically been done for routine maintenance but may also be utilized more broadly.
- **Pre-planning and Pre-permitting Initiatives** to advance required studies and permitting documents well before permitting commences.
- **Corps of Engineers Nationwide permits**, such as a Nationwide 3 for maintenance projects - Explore applicability and leverage if available

These approaches are explained in greater detail below.

Programmatic Permitting

One proven approach is the use of programmatic permits for routine or recurring activities. Instead of seeking separate approvals for each maintenance activity such as annual pile replacements, a port can work with regulators to secure a single, broad permit covering multiple projects over several years. The Ports of Everett and Vancouver have adopted this concept for smaller scale maintenance projects by obtaining a 10-year programmatic permit for various maintenance projects such as pile repairs, pile replacements, dock demolition, dock replacements, etc., consolidating what would have been multiple separate permits into one package. Under these permits, the permittee is allowed to repair hundreds of pilings across multiple facilities without re-permitting each time. This saves considerable time and money for both the ports and the U.S. Army Corps of Engineers and other permitting agencies and makes maintenance schedules far more predictable.

A similar approach for non-routine activities could be the concept of over-permitting, or permitting the maximum extent of work, including all possible repairs, reinforcements and rebuilds. Within the permit, the range of project options and phases would need to be tied to future structural conditions. The permit would

outline defined responses for differing future conditions (e.g., add new piles, reinforce deck, replace sections). The challenges with this approach are the possibility that the agencies may require a higher level of clarity on phases or responses than being realistic, and would also require mitigation for the full scope of the permit as a condition of permit issuance; however, utilizing a mitigation bank may offer an opportunity to implement a pre-negotiated mitigation ledger, which would be maintained over the life of the permit could avoid the concern of over-mitigating. This concept creates a framework where one can legally choose a smaller construction scope later, so long as it's within the pre-permitted maximum. This is more nuanced than a maintenance permit and the approach would be dependent on both the purpose and need of the project and agency acceptance.

Additionally, locking in a 10-year permit can have benefits such as withstanding new policy and regulatory changes, such as those experienced in the Pacific Northwest with NMFS' change to its definition of the environmental baseline, which brought to a halt all aquatic permitting in the Pacific Northwest for a matter of years. By front-loading the environmental review for a whole class of expected work, the ports could be in a position to phase the work as needs arise and as funding becomes available. Notably, such programmatic permits still undergo full scrutiny upfront. The difference is efficiency where agency staff review one comprehensive plan rather than many piecemeal applications.

Pre-Planning and Pre-Permitting Initiatives

If it is at all feasible, pre-permitting and pre-planning initiatives should be undertaken to cut timelines. This entails conducting as much environmental analysis and securing as many approvals as possible before a project is formally launched or a private development partner is in place. The port can do the heavy lifting of environmental review for a pier rebuild (including mitigation plans for habitat impacts, geotechnical studies, etc.) in advance, so when funding or a construction partner comes on line, the project can move more quickly into execution and will have better certainty in terms of costs and timelines. Such pre-permitting requires upfront investment by the port (and willingness of agencies to engage in hypothetical project review), but it can be aided by state and federal grants specifically aimed at planning. Notably, the PIDP planning grant provides funding for preliminary activities such as engineering, environmental review, and permitting, making it an ideal tool to prepare a pier reconstruction project for future capital investment. By supporting design and feasibility work, the grant helps ensure the project is well-defined, resilient, and competitive for construction grant funding.

Corps of Engineers Nationwide Permit 3

Utilizing a U.S. Army Corps of Engineers Nationwide Permit 3 (NWP 3) for renovating or maintaining a pier offers significant regulatory and logistical benefits, particularly for small to mid-sized ports seeking to

extend the useful life of aging infrastructure. An NWP 3 authorizes the repair, rehabilitation, or replacement of previously authorized, currently serviceable structures, such as piers and wharves, provided the new structure is of similar dimensions and purpose. This streamlined permit pathway can reduce permitting timeframes substantially compared to an individual permit, enabling ports to address safety, operational, and environmental concerns more quickly and cost-effectively. Additionally, an NWP 3 supports routine maintenance activities such as replacing deteriorated pilings or decking, reinforcing structural elements, or restoring functional moorage without triggering full-scale environmental reviews, provided compliance with general conditions and pre-construction notification (PCN) requirements are met. This can be especially valuable for ports managing legacy assets that are vital to commerce and emergency response but lack the throughput or funding to pursue major redevelopment.

Conclusions

Which came first, the boat or the pier? Probably the boat. But soon thereafter the first pier was built. It offered a solution to the problem of hiking through the water and mud, carrying large heavy loads of goods and wares. Piers and wharves are as fundamental to Ports and international trade as rudders are to ships. You simply can't have international trade without functioning piers and wharves. They are the bedrock of our national network of port authorities – and while the distant onlooker may assume these facilities are permanent, resilient and banal, this paper highlights they are certainly not.

The POE and the POV have at their disposal a toolkit of solutions to address the intertwined challenges of permitting, financing, and executing pier redevelopment. By advocating for supportive policies and embracing innovative strategies – from legislative reforms and programmatic permits to public-private financing and peer collaboration – both ports can overcome the hurdles that have long delayed critical infrastructure upgrades.

Looking broadly, it is clear that ports need to continue to collaborate on everything from operations to policy and legislative challenges. This paper is a product of that very collaboration between two peers that started with a conversation about the challenges of re-developing aging infrastructure and the need to create efficiencies in the environmental permitting process for in water work creating permit predictability and reduced time to market. While ports compete on a macro level, we are challenged by the same issues and processes at a micro or operational level. It is this sharing of challenges and experiences that brings great value by learning from others. From this we develop solutions faster, save expense, and avoid missteps. Take every opportunity to tell your port's story but also advocate for the industry as a whole, it makes us all stronger. Ports can take the following actions

to engage and collaborate within the maritime industry:

- Become a member and be active in your state's port association. The POV and the POE are members of WPPA.
- Become a member and be active in the AAPA. AAPA lobbies at the federal level for the industry and can help you network and is an invaluable source of education to the nation's maritime industry.
- Meet with ILWU/ILA and trade unions and educate them on the importance of why they should advocate for the port. Often, they are your biggest supporters and typically a primary benefactor of port infrastructure improvements.
- Take the time to get to know your State and Federal legislators. Work with their staff to set up tours of your port. Thank them for advocating for any past projects and the funding they may have helped you secure.
- Educate your federal and state Lobbyists. They represent your ports and advocate for you in your absence.
- Meet with your legislators at their offices. It highlights the importance of the issue or message you are conveying by taking the time to bring it to them. Inversely, it is critical to understand the issues that are important to them in their districts/states. You need to be cautious advocating for or against an issue they inherently do not support.
- Be active and network within local maritime organizations such as: PNWA, Columbia River Steamship Operators Association, and the Northwest Marine Terminals Association.
- Get to know your local planning officials prior to even having a project. They can help you navigate the local permits and save you time.
- Get to know the Tribes in your state/jurisdiction, build good relationships, and learn what is important to them. Share your project plans in advance.

It is critical to develop good relationships, collaborate and network with fellow port authorities, legislators and industry stakeholders. Developing these relationships starts well in advance of leveraging them and can take several years to build or rebuild trust. It makes it easier to address these challenges when things are not going as planned and you need to contact them.

Reflections on Learning and Implications for Practice

Through research, information gathering and collaboration, the authors of this paper gained a deeper knowledge from different industry perspectives on the complexity of the issues and challenges associated with

piers and wharf maintenance and redevelopment. They are not only better suited to educate legislators on the need for permitting reform, increased funding for permitting agencies, and increased funding for small and medium-sized ports but also share conclusions with and offer paths forward to colleagues and other port professionals. To share the important knowledge gained through their experience, this paper offers two succinct communication resources to their target audience:

- **Lessons for Ports Facing Aging Piers and Wharfs:** This one-page brief distills some of the high level take aways and the best practices identified herein to help port professionals that are working with aging marine infrastructure, challenging operations, limited funding, and long permitting timelines (Appendix D).
- **Legislative Advocacy Brief:** This one-page brief is a call to action for legislators to support the critical role small and medium-sized ports play in regional and national economic development through port infrastructure funding and permitting reform (Appendix E).

Through the experience of developing this paper, they are better suited to learn about other ports and their unique or similar challenges, with the enhanced ability to collaborate on solutions that will have the benefit of impacting the broader port industry. In this case, the adage of "if you have seen one port, you have only seen one port" is not true and more likely that "we are all in the same boat" with respect to challenges of permitting, financing, and re-developing aging piers. It is imperative our nations port authorities "row in the same direction" so we are collectively able to provide the necessary infrastructure, like piers and wharves, to support regional economic development, our nation's economy and the global supply chain network.

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Appendix A

Overview of Ports of Everett and Vancouver USA

Overview of Ports of Everett and Vancouver USA

The Port of Everett (established in 1918) and the Port of Vancouver USA (established in 1912) are among Washington State's oldest public port districts, created in the wake of the 1911 Port District Act that empowered local communities to develop and manage waterfront infrastructure for public benefit. Both ports have evolved into regionally significant, multimodal hubs that support critical components of the state's economy - from agriculture and manufacturing to defense and clean energy. Despite being very different ports and having very different cargo profiles, they share similar challenges tied to aging infrastructure, increasing operational demands, and complex regulatory environments. The brief sections below provide a high-level overview of each port, highlighting their operational roles, terminal assets, cargo throughput, and broader economic contributions that set the stage for exploring shared infrastructure challenges and potential solutions. Table 1 below illustrates the current and historic uses at each port as well as future diverse cargo opportunities.

Table 1 – *Types of Cargo at the Port of Everett and the Port of Vancouver USA*

Use	**Port of Vancouver USA***	**Port of Everett***
Ro/Ro	X	X
Dry Bulk	X	X/O
Break Bulk	X	X/O
Liquid Bulk	X	-
Shipyard Operation	-	X/O
Lay Berth	X	X
Project Cargo	X/O	X/O

*X – current/historic use, O – opportunity for new operations or expansion of existing operations (maximize asset utilization)

Port of Everett Overview

The POE, located 25 miles north of Seattle on Port Gardner Bay, is a federally designated Commercial Strategic Seaport and the first major deep-water port and military installation that is accessed from the Pacific Ocean in Puget Sound. As part of the national defense and regional freight network, the Port plays a critical role in the movement of U.S. exports, supporting nearly $21 billion in exports annually, focusing on high-value and oversized cargoes essential to the aerospace, energy, and manufacturing sectors. While Everett is a value Port versus a tonnage port, between 2019 and 2024, it handled an annual average of approximately 350,000 short

tons of cargo and generated an annual average of approximately $30 million in total seaport revenues.

The POE has evolved over the last century and in recent decades developed a niche for handling breakbulk, project, and heavy-lift cargoes, serving one of the nation's largest advanced manufacturing clusters and the nation's largest exporter. This includes direct support to The Boeing Company's largest manufacturing facility located adjacent to the Seaport and Naval Station Everett. The Port of Everett moves all the oceangoing parts for the 767, 777, 777x and the KC-46 tanker and Airforce One. Navy Region Northwest, which includes Naval Station Everett, ranks as the third-largest employer in Washington state, contributing nearly $15 billion to the state's economy.

According to a 2019 economic impact study by Martin Associates, Everett's Seaport supports more than 35,500 jobs and generates $410.9 million in state and local tax revenue (Martin Associates 2020). In 2021, the Port was designated as the newest Commercial Strategic Seaport by the U.S. Maritime Administration and was later identified as a regional Disaster Recovery Port (DRP), reflecting its role in enhancing supply chain resiliency during national emergencies or natural disasters. The DRP designation means that State and local planning for natural and other disasters rely on the POE to receive critical disaster relief supplies if the Port of Seattle and/or Port of Tacoma terminal facilities become impaired or are out of commission. Everett has eight shipping berths facilities and two industrial tenants:

- **South Terminal** is the Port's largest shipping facility with approximately 700 linear ft. of berth and two, 214 ft. rail-mounted gantry cranes. A $36 million modernization project completed in 2021 reinforced the dock structure to handle heavier loads. It also features a 1,200 foot Ro/Ro facility.
- **Pacific Terminal** located immediately north of South Terminal is a key break bulk facility with two rail-mounted gantry cranes with direct rail access and ample laydown space, supporting both commercial and military cargoes.
- **Norton Terminal**, which opened in late 2022, added significant cargo capacity to the port expanding the Port's handling footprint and storage capabilities by approximately 40 acres.
- **Mount Baker Terminal** is a barge berth located south of the main terminal complex and supports a custom container-on-rail operations for the aerospace industry.
- **Pier 1** is 650-ft. in length and has two, ship and barge berths to its north and south sides and on-dock rail, supporting containerized, breakbulk, and Ro/Ro cargos.
- **Pier 3** is 730-ft. primarily supports bulk cement, general cargo and shipyard tenant operations. The Pier is in need of significant repair and upgrades to ensure safe and sustainable operations. This is one of the piers that is the subject of this paper.

- **Bulk cement tenant operations** utilize a cement off-loading vacuum system and belt conveyor on the south side of Pier 3, and a storage dome and truck loading facility located on adjacent lands.
- **Shipyard tenant operations** are located on the north side of Pier 3 and adjacent lands.

The Port has also made major investments in its rail infrastructure. On-terminal rail capacity was expanded from 9,200 to 12,500 linear ft., and the Port connects directly to the BNSF Railway mainline.

Port of Vancouver USA Overview

The POV is the furthest inland deep draft port situated between river miles 103 to 107 on the Columbia River and ranking in the top four of 75 ports in Washington State for overall tonnage with 7.3 million metric tons in 2024 and over $53 million in annual revenues. The port plays a strategic role in exporting over 13 percent of US grain exports annually. According to the Martin and Associates 2022 economic impact study, Port operations support nearly 20,000 jobs in Southwest Washington and generate $2.9 billion (including $87.6 million State/Local Taxes) in economic benefit annually to the region (Martin and Associates 2022). The port is ideally located at the nexus of the Columbia River, Interstates 5, 84 and 205 as well as WA State Route -14, and BNSF's Fall Bridge and Portland/Seattle Rail Subdivisions. From a logistics perspective, this is a trifecta for a port, with river, road and rail access coming together at the same geographical location.

The POV is primarily a bulk and breakbulk port with a diverse cargo mix operating on over 1,500 acres, 43 plus miles of rail infrastructure, six terminals, and 14 berths. The port's current export cargos, valued at just over $2.5 billion, include wheat, corn, soybeans, scrap steel, liquid bulk fuels and bulk mineral soda ash. Import commodities, valued at just over $2.4 billion, include Subaru Automobiles, Steel Plate/Pipe/Coil, Aluminum, Sodium Hydroxide, and project cargoes of wind energy components and plant system modules.

- Terminal 1 is a mixed-use development (hotels, restaurants, office)
- Terminal 2 is a grain pier (wheat, corn, soybeans); Piers 1,2 & 3 breakbulk (shred steel, project cargo); Pier 4 low dock; Pier 5 liquid bulk (jet fuel, sodium hydroxide, biofuel); and Pier 7 bulk mineral (soda ash)
- Terminal 3 includes Piers 8 and 9 which are primarily used for breakbulk (aluminum, steel, lumber, pulp)
- Terminal 4 includes Pier 10 which is used for Ro/Ro (Subaru automobiles); Piers 13/14 lay berth/ general cargo

- Terminal 5 includes Pier 17 which is used for lay berth and is a future bulk mineral pier
- Gateway includes 534 acres for future marine and industrial development

In addition to the port's maritime operations, is the POV's diverse industrial tenant mix and operations. The 60 plus port tenant operations include, but are not limited to, lumber warehousing, electronics recycling, malt production, plastic injection molding, distribution of industrial/food grade flours/starches, steel pipe, butane and propane distribution, electric heater manufacturing and canned fruit processing.

Appendix B

Piers and Wharves – AAPA Electronic Survey, June 2025

AAPA PPM "A Tale of Two Piers" Capstone Survey

By Port of Everett and Port of Vancouver

July 2025

This document provides the data from a recent survey of American Association of Port Authorities (AAPA) Professional Port Manager (PPM) program candidates and other AAPA members. The survey was developed by Erik Gerking, Por of Everett, and Todd Krout, Port of Vancouver USA in collaboration with Shannon McLeod of AAPA, in pursuit of their Capstone Paper entitled "A Tale of Two Piers, Navigating the Challenges of Port Dock Redevelopment in the Everchanging Tides of Permitting, Financing, and Commercial Opportunities." Below is a summary of the survey results. Mr. Gerking and Mr. Krout are grateful for the time, effort and willingness of the respondents to complete this survey. The results of the survey are referenced throughout their capstone paper.

Purpose Statement – PPM Wharf & Pier Infrastructure Survey

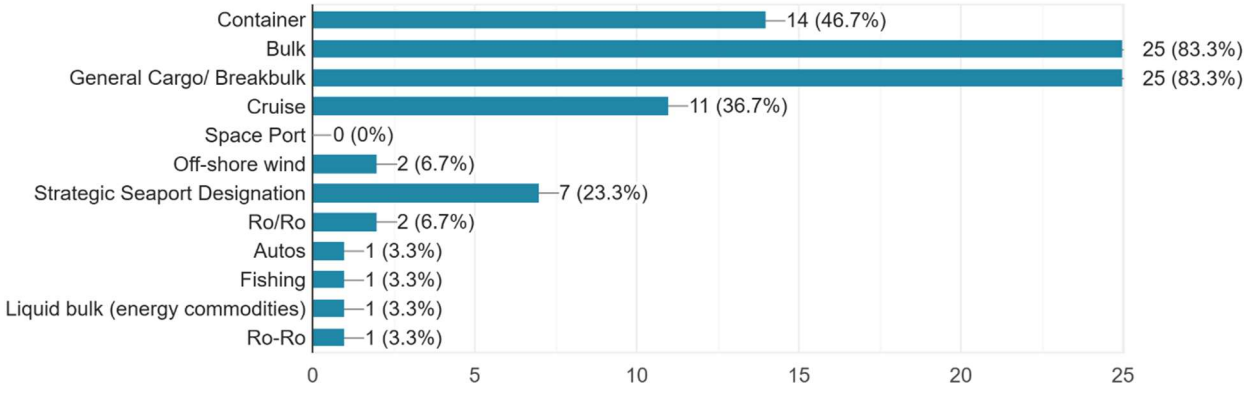
The purpose of this survey was to gather insights from AAPA PPM candidates on the current state of pier and wharf infrastructure across North American ports. The survey seeks to understand the scale and urgency of maintenance needs, the financial strategies being used or considered to address those needs, and the regulatory and permitting challenges that ports face in executing waterside infrastructure projects. The results will inform peer collaboration, highlight systemic issues in funding and permitting, and support the development of policy and investment recommendations to ensure resilient, future-ready marine infrastructure.

Survey Respondents:

#	**Port Authority / Entity**	**Respondent**
1	Port of Galveston	Brett Milutin
2	West Coast	anonymous
3	Port of Beaumont	Brandon Bergeron
4	Port Authority Cayman Islands	Brevan G. Elliott
5	Port of Port Angeles	Caleb McMahon
6	New Bedford Port Authority	Ceasar C Duarte
7	Port of Port Angeles	Chris Hartman
8	NC State Port Authority	Daniel Lamborn
9	Port of Everett	Erik Gerking
10	Calhoun Port Authority	Felicia Harral
11	PortMiami	Helga Sommer

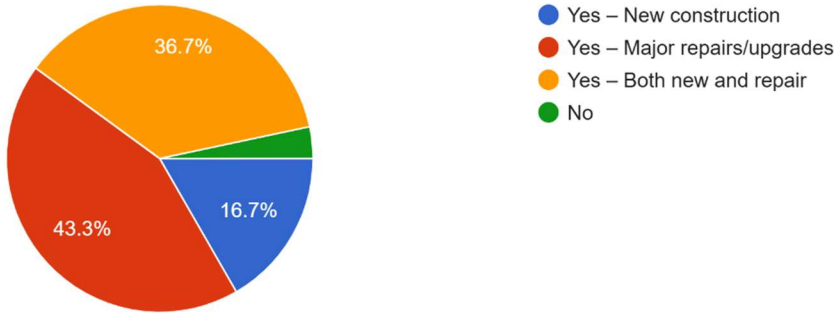
12	Port Milwaukee	Jackie Q. Carter
13	Port of Corpus Christi	Jacob Morales
14	Port of Stockton	Jason Katindoy
15	Port Pascagoula	Joseph Powell, MPE
16	Port Everglades	Kile Alford
17	Port of Longview	Mark Price
18	Port of Cleveland	Matt Wenham
19	Massachusetts Port Authority	Max Wigglesworth
20	Port of Lake Charles in Louisiana	Nick Pestello
21	Port of Beaumont	Paul Richardson
22	St. John's Port Authority, St. John's, Newfoundland	Pier 17 Finger Pier
23	Port of Beaumont	Randal Ogrydziak
24	Port of San Diego	anonymous
25	Port of Tacoma	Robert Healy
26	The Pasha Group	Sophie Silvestri
27	Maryland Port Administration	Steve Johnson
28	Port of Vancouver USA	Todd Krout
29	Port of Caddo-Bossier	Tyler
30	Philadelphia Regional Port Authority	Valerie Piper

Types of Ports that Responded:

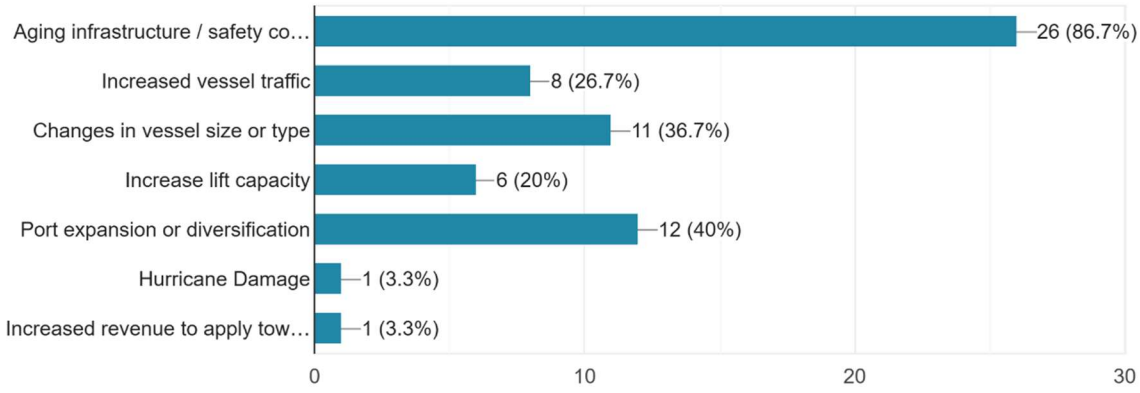


How would you rate the overall condition of your pier/wharf assets?
(Scale of 1-5, where 1 = Poor and 5 = Excellent)

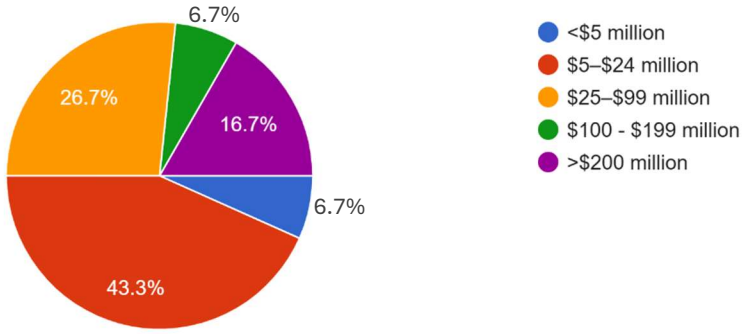
Have you invested in repairs, upgrades, or new construction of piers and wharves in the last 10 years?



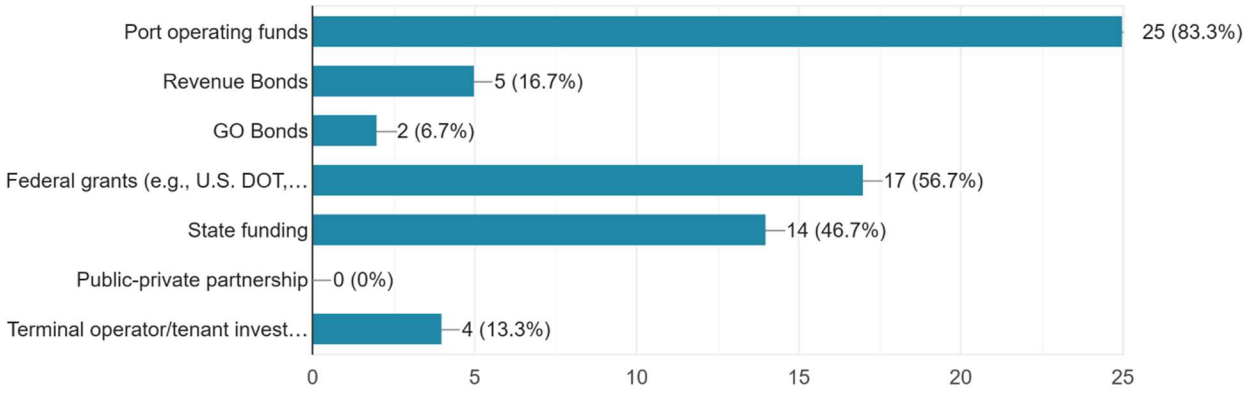
What are the primary reasons for your most recent investment? (select all that apply)



What was the approximate invested amount? (Most recent or most significant project)

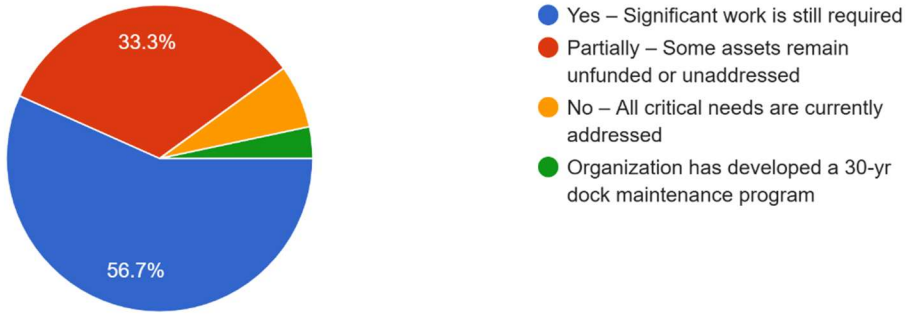


How was the most recent infrastructure project funded? (Select all that apply)



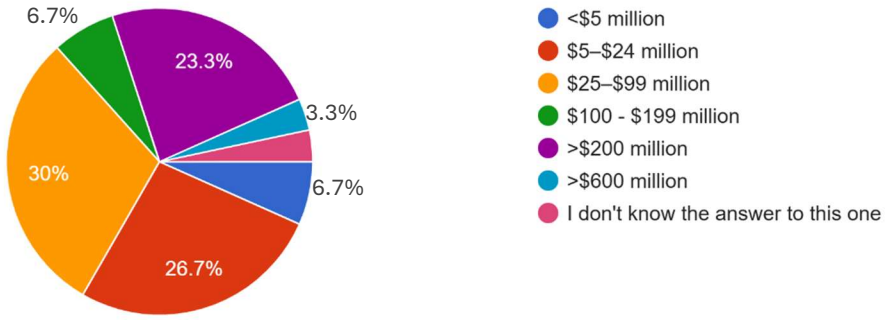
Is it likely that the total expense of the improvement will be recouped through revenue generated from the asset in 15 to 20 years?

Do you have critical pier or wharf infrastructure in need of repair or replacement?

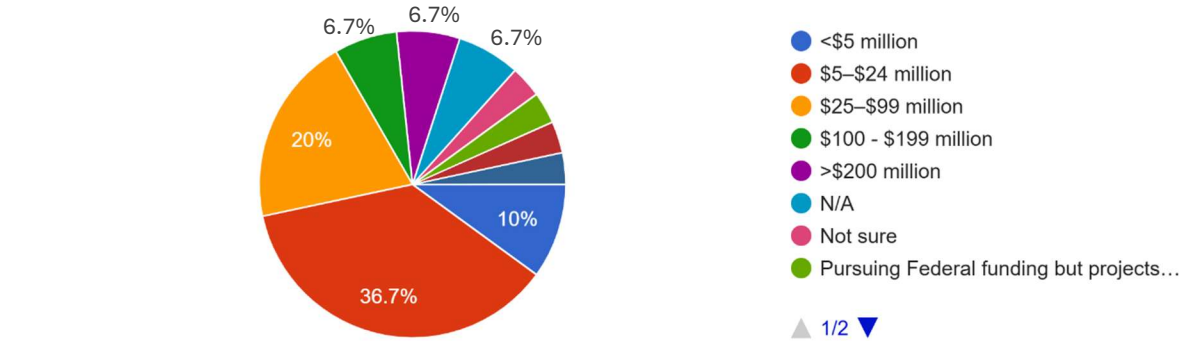


Do you have a capital improvement plan (CIP) that includes pier or wharf investment in the next 5 years?

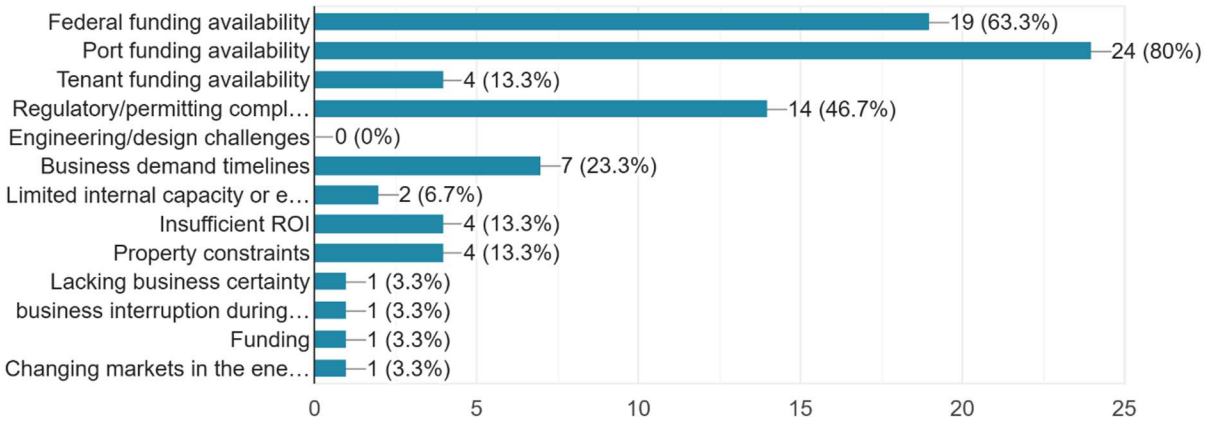
What is the approximate capital cost? (Most near term or most significant project)



What is the approximate minimum necessary federal investment to meet financing requirements for this project(s)?



What are the biggest barriers to investing in pier/wharf infrastructure? (Select top 3)



#	**As it pertains the project(s) you indicated above, we'd like to hear if you had any unique experiences with policy decisions, financing, tenant negotiations, permitting challenges or efficiencies, success stories or failures, etc. that you'd like to share.**
1	Happy to discuss in a call
2	The port's B17 Rehabilitation project went through a vetting process to discuss future use of the Terminal where the pier is located. Essentially evaluating the length of the business opportunity vs. other future potential opportunities against the return on investment. Ultimately the port determined moving forward with the $9+ MM dollar project satisfied the potential opportunity. After upgrading the facility from an old bulk import dock the port was successful in getting a long term MARAD layberth contract that will provide upwards of $10MM in revenue over the next 10 years.
3	We've had to delay one of our bulkhead replacements due to cruise industry's need for a summer berth. We've also had to delay another bulkhead replacement to ensure enough fuel throughput to not adversely impact the region.
4	Typical financial constraints based on operating revenue that is subject to the Government's approval.
5	No

6	The Terminal 3 Maintenance Dredging was unique because the site is located within a sediment cleanup site. We were able to reuse the majority of the dredge material within the redevelopment of the former PenPly Mill site, which was also a MTCA cleanup.
7	Have wants but no solid strategy (CIP)
8	Justification of ROI, market share, funding availability and community relations to proceed forward.
9	Our terminal 1 is over 100 years old. It requires constant maintenance and upgrades. We have been able to utilize grant funds, federal funds and port revenue to complete the projects. I would say one of the most valuable lessons we have learned is to continue programmatic permits which makes the over water permitting process less time consuming.
10	Too much indecision at all levels. Permitting is a monster and dictates critical path. Extensive engineering to optimize site so as to not impede passing/turning vessels but also provide safe berthing and mooring
11	Our port is unique as permitting for our infrastructure projects were performed under a streamlined process known as the State Enhanced Remedy (SER) in conjunction with the EPA and MassDEP allowing for permitting in months not years.
12	The Southport Project started in 2012 after receiving NEPA Approval and a permit from the USACE. Due to the size and cost of the project, development and expansion of the project has been occurring in phases. The berth construction is the last piece of the development. PhilaPort applied for federal funding 12 times before receiving an award in 2021. In 2021, PhilaPort still had an active USACE permit to build the berth; however, with the USDOT awarding the funds the federal action agency became MARAD. Though not in writing within the MARAD MAR 400 guidance, MARAD would not accept the Environmental Assessment completed in 2012 for USACE due to it being a different federal agency and the length of time that had passed. In late 2022, MARAD advised PhilaPort to prepare a Supplemental EA for the awarded berth project. A consultant was engaged, and the original 2012 EA was updated and submitted to MARAD for NEPA approval. The Supplemental EA review for the next eight months was a full-scale wash, rinse, repeat cycle between MARAD and PhilaPort during which a Section 7 consultation with NOAA Fisheries was not engaged. By the time NOAA Fisheries was engaged by MARAD, NOAA informed MARAD and USACE that a 2022 study of the Atlantic sturgeon population in the Delaware River would require PhilaPort to prepare and deliver a new Biological Assessment. At the same time, PhilaPort's second berth was awarded a MEGA 25/26 grant. With the award of the second berth development, MARAD and NOAA requested a new, full Environmental Assessment, noting information in the Supplemental EA prepared could be used but alone was insufficient. MARAD has since updated its MAR 400 NEPA guidance. Grant recipients are now advised what constitutes an eligible EA, the process for Section 7, and that a NEPA review is required even if done and approved by USACE. USACE coordinated a meeting with MARAD, PhilaPort, consultants, and the NOAA Fisheries that was used to talk through the issues and develop a plan of action. This one call of approximately 60 minutes put the project back on track. A coordinated call like this is the exception, not the norm. If it were the norm, PhilaPort would likely have avoid some of the lost time and money.
13	None- We are just strapped for cash
14	Most were related to utilizing FEMA 428 funds to build alternative new projects. Most people don't know you can use this method so you don't have to build back exactly what was damaged.
15	Limited contractors available and very small regulatory window for in-water work window
16	Information is presented in my AAPA PPM paper, "tale of two piers"

Raw data available upon request at the Port of Everett.

Appendix C

POV Project Permitting Matrix

No.	Jurisdiction	Permit Name/ Work Area	Permit Description	Legislative Reference	Regulatory Agency Contacts	Supporting Documentation and Procedures Required to Obtain Permit	Est. Approval Time	Validity/Exp.	Additional Information	Agency Outreach
1a	Federal	USACE Section 10 Permit	The project will require an Individual Permit from USACE in accordance with Section 10 of the Rivers and Harbors Act as the Columbia is a navigable waterway.	Rivers and Harbors Act (33 CFR Part 322)	**USACE** Portland District: Bill Abadie Regulatory Branch Chief 503.808.4370 William.D.Abadie@usace.army.mil Port Reg. Proj. Mgr.: Kinsey Friesen 503.808.4378 Kinsey.M.Friesen@usace.army.mil	• JARPA (including ~30% design plans) • Mitigation plan • Alternatives analysis • Cultural/Hist Resources Report	12 to 18 months	5 years	The Columbia River is a navigable waterway and Section 10 is applicable. No fees are charged for public projects. Letter of permission is a potential path.	
1b	Federal	USACE Section 404 Permit	The project will require a permit from USACE in accordance with Section 404 of the Clean Water Act because the Columbia River is a water of the U.S. and fill is anticipated.	Section 404 of the Clean Water Act (33 CFR Part 323)					The USACE must document compliance with different federal laws in their review. This includes Section 106 of the National Historic Preservation Act,	
2	Federal	USACE Section 408 Permit	USACE has the authority to review, evaluate, and approve all alterations, including crossings that could impact the channel to make sure the alterations are not harmful to the public and that the civil works projects will still meet their intended purposes.	33 U.S.C. 408	**USACE** Marci Johnson, Section 408 Program Manager, Portland District 503.8080.4765 Marci.e.johnson@usace.army.mil	Under the Section 408 process, the USACE will determine the technical data and analysis required for a complete application.	6 to 18 months	Not specified	The Columbia River Federal Navigation Project is proximate to the project limits. No Section 408 impacts or authorization are anticipated. Included in matrix for completeness.	
3	Federal	Section 7 Consultation	Federal agencies must consult with USFWS and NOAA Fisheries when actions have the potential to affect listed species. The Columbia River is habitat for multiple listed salmonids, Pacific eulachon, and green sturgeon.	Endangered Species Act 16 U.S.C. Section Chapter 35	**NOAA Fisheries/USFWS** Sara Tilley	• Biological Evaluation • Support documentation	135 days (target)	No expiration[1]		
4	Federal	USCG Private Aids to Navigation	The USCG may require that structures be identified with navigation lights and any navigation lights planned for inclusion must be permitted by the USCG	33 CFR Parks 66	**USCG 13th District** PATON Manager Phone: (206) 220-7285 D13-SMB-D13-PATON@uscg.mil	• Application form with lighting details	Not specified	No expiration	The USACE typically provides the USCG with the JARPA and the USCG will determined whether they will require lighting. Permits typically applied for closer to construction when final details are known.	

[1] Subject to re-consultation if species status or project changes.

No.	Jurisdiction	Permit Name/ Work Area	Permit Description	Legislative Reference	Regulatory Agency Contacts	Supporting Documentation and Procedures Required to Obtain Permit	Est. Approval Time	Validity/Exp.	Additional Information	Agency Outreach
	Federal	National Environmental Policy Act (NEPA)	NEPA review and compliance is required for all federal actions unless specifically exempted.	40 CFR parts 1500–1508 (CEQ) Appendix B of 33 CFR part 325 (USACE) Maritime Administrative Order (MAO)600-1 (MARAD)	**TBD**	• TBD (support documentation will likely include the technical information prepared for other reviews and permit applications.	TBD	3 years (generally)	NEPA is completed by the USACE as part of its permitting authority. The USACE accomplishes this through the completion of an Environmental Assessment (EA). In addition, if a grant is awarded to the port by the US DOT Maritime Administration (MARAD) NEPA compliance will be completed to support the federal funding. Typically an EA is completed for MARAD by the entity receiving the funds.	
5	State	State Environmental Policy Act (SEPA)	Review under SEPA required for all government actions (state and local agencies in Washington) that are not otherwise exempt. The replacement bridge project is not exempt.	RCW 43.21C WAC 197-11 Agency SEPA rules	**Port of Vancouver:** Responsible official to be determined	• SEPA checklist • Supporting Materials including cultural resources, air and traffic studies	TBD (based on process)	N/A		
6	State	401 Water Quality Certification (WA)	Applicants seeking federal approval under Section 404 to conduct any activity that may result in a discharge (including dredge and fill material) in waters of the U.S. must receive water quality certification prior to issuance of the federal permit.	WAC 173-201A	**WA Department of Ecology:** Loree Randall 360 485-2796 loree.randall@ecy.wa.gov	• Prefiling request form • 401 Request form • Joint Permit Application (including ~30% design plans) • SEPA determination • Water quality protection and monitoring plan • Sediment quality information (pot)	Up to 1 year. Typically 90 to 180 days.	Same time period as Section 10/404	A pre-filing meeting with Ecology is required at least 30 days prior to permit submittal. Conditions of the Section 401 Certification become conditions of the Federal permit or license. SEPA must be completed prior to issuance	Lori Kingsbury retired
10	State	National Pollution Discharge Elimination System (NPDES) Construction Stormwater General Permit	Construction disturbing more than 1 acre of land will require a general or individual NPDES construction stormwater permit.	Clean Water Act (Title 33 U.S.C. 1251), RCW 90.48 ORS 468B	**Ecology** Joyce Smith Permit Administrator 360-628-2138 joyce.smith@ecy.wa.gov	• NOI • Erosion and Sediment Control Plan • Contaminated site information (TBD)	60 days	As long as construction is underway	Submit notice of intent at least 60 days prior to construction start.	

No.	Jurisdiction	Permit Name/ Work Area	Permit Description	Legislative Reference	Regulatory Agency Contacts	Supporting Documentation and Procedures Required to Obtain Permit	Est. Approval Time	Validity/Exp.	Additional Information	Agency Outreach
12	State	Aquatic Use Authorization	Activities taking place on state-owned aquatic lands require a lease under the Aquatic Use Authorization.	RCW 79.105	**WA DNR:** Rivers District 360-577-2025 aquaticleasing.rivers@dnr.wa.gov	• TBD		N/A	Within Port Management Area. Notice to DNR is the only requirement.	
13	State	Hydraulic Project Approval	Required for construction projects or activities in or near state waters including the Columbia River.	RCW 77.55, WAC 220-660	**WDFW Region 5:** Amaia Smith, Biologist 360 839-3508 Amaia.Smith@dfw.wa.gov Supervisor Madeline Nolan Madeline.Nolan@dfw.wa.gov (360) 408-9273	• JARPA • Mitigation Plan	45 days	5 years (substantial progress within 2 years)	SEPA determination is required prior to approval. Application is completed through online APPS site.	
	State	Shoreline Conditional Use Permit (SCUP)	Dredging requires a SCUP per the Vancouver SMP. The 30% design plans include excavation below the OHWM which is defined as dredging and a CUP is required	VMC 20.760 WAC 173-27 SMP Table 6-1	**Ecology** Meghan Tait 360-210-2783 Meghan.Tait@ecy.wa.gov	• N/A (materials identified below under local). City will submit additional materials	30 days	2 years to start construction, 5 years to complete (can be extended)	Ecology is the final reviewer.	
	Local	Pre Application or Exemption	A preapplication is required for all Type II developments or greater. The SSDP, SCUP and other city permit reviews are Type II or greater and this step is required.	VMC 20.210.080	**City of Vancouver** Keith Jones, Senior Planner keith.jones@cityofvancouver.us 360-487-7887	• Application form • Narrative • Conceptual Plans	28 days	N/A	Waivers can be approved for projects that are relatively simple (e.g., has few, if any, development-related issues) or an application is substantially similar to a prior proposal affecting substantially the same property. Notice is provided to neighborhood association.	Initial call with Keith Jones on 2/14 to introduce the project (with Matt and Brian). Keith was supportive of pre-application waiver and discussed the hearing examiner process.
16	Local	Shoreline Substantial Development Permit (SSDP)	Required for development within Shoreline jurisdiction that is not exempt	VMC 20.760 WAC 173-27 SMP Section 2.2	**Same as above**	• Application form • Compliance Narrative • Mitigation Plan • Site Plan(s) (site, tree & soil, grading & TESC, stormwater, civils) • JARPA • Studies (as needed) • Mailing labels (prop owner w/in 500 feet)	120 days	2 years to start construction, 5 years to complete (can be extended)	SSDPs are subject to a Type II review process and requires public notice. City allows for concurrent review and bases the application type off the highest level review. SSDP will include review of the project for compliance with critical areas including fish and wildlife conservation areas, geologic hazard, frequently flooded, etc. Studies include (geotechnical report, no net rise analysis, stormwater report, archaeological predetermination)	
17	Local	Shoreline Conditional Use Permit (SCUP)	Dredging requires a SCUP per the Vancouver SMP. The 30% design plans include excavation below the OHWM which is defined as dredging and a CUP is required	VMC 20.760 WAC 173-27 SMP Table 6-1		• Same as prior	150 days	2 years to start construction, 5 years to complete (can be extended)	SCUPs are subject to Type III review process with hearing examiner review and decision, followed by Ecology review, who will make the final decision.	
19	Local	Site Plan Review	Required for all development that is not specifically exempted.	VMC 20.270		• Same as prior	120 days	2 years with the ability for a single 1 year extension	Will include review of the project for consistency with other application city regulations including Tree, Vegetation and Soil Conservation (VMC 20.770) Archaeological Predetermination (VMC 20.710) Transportation Concurrency (VMC 11.70), Stormwater (VMC 14.25 and 14.26)	Need to contact transportation and stormwater staff to confirm application needs.

No.	Jurisdiction	Permit Name/ Work Area	Permit Description	Legislative Reference	Regulatory Agency Contacts	Supporting Documentation and Procedures Required to Obtain Permit	Est. Approval Time	Validity/Exp.	Additional Information	Agency Outreach
20	Local	Building and Trades Permits	Required prior to building of any structures (dock). Will include structural, electrical, and others	VMC Title 17	TBD	• TBD	180 days	180 days (construction must begin within this period)	More detail will be provided when specific schedule for construction is identified.	
21	Private	Pacific Corp and BPA	Placeholder for any approvals that may be necessary to address overlap of the project with existing easements for existing overhead power within the project area.	NA	TBD	• TBD	TBD	TBD		

NOTES:

GLOSSARY:

BPA = Bonneville Power Administration
CFR = Code of Federal Regulations
Ecology=Washington Department of Ecology
EIS = Environmental Impact Statement
ESA = Endangered Species Act
JARPA = Joint Aquatic Resource Permit Application
MARAD = US Department of Transportation Maritime Administration
NA = Not Applicable
NEPA = National Environmental Policy Act
NOAA Fisheries = National Ocean and Atmospheric Administration Fisheries Division
NPDES = National Pollutant Discharge Elimination System
NWP = Nationwide Permit
RCW=Revised Code of Washington
SCUP = Shoreline Conditional Use Permit
SEPA = State Environmental Policy Act
SMP = Shoreline Master Program
SSDP = Shoreline Substantial Development Permit
TBD = To Be Determined
US = United States
USACE = US Army Corps of Engineers
USC = US Code
USFS = US Forest Service
USFWS = US Fish and Wildlife Service
VMC= Vancouver Municipal Code
WA = Washington
WAC = Washington Administrative Code
DFW = Washington Department of Fish and Wildlife
WSDOT = Washington State Department of Transportation

Appendix D

A Tale of Two Piers: Lessons for Ports Facing Aging Piers and Wharfs

A Tale of Two Piers: Lessons for Ports Facing Aging Piers and Wharfs

Facing a deteriorating pier or wharf and rising costs? You're not alone. This guide distills best practices from the Ports of Everett and Vancouver USA - two ports tackling parallel challenges with aging marine infrastructure, challenging operations, limited funding, and long permitting timelines. Here's what your port should be thinking about as you plan.

Think Long, Act Now

- Invest in the development of a flexible, phased plan rooted in engineering realities.
- Consider developing a 10-year permit that allows for flexible implementation
- Use structural load maps and condition heat maps to safely manage until the infrastructure is resolved.

Partner Up

- Collaborate with peer ports to share ideas, build political will, and co-develop funding tools.
- Share surveys, advocacy strategies, and permitting concepts.

Diversify Financing

- Layer grant strategies with bond, loan, and tenant contributions.
- Calibrate the scope of work to fit the financing approach.
- Explore creative models like deferred leases and phased capital planning.

Build a Strong Internal Coalition

- Involve: planning, engineering, operations, maintenance, government affairs, finance, and consultants.
- Align messaging across teams and with external stakeholders.

Plan for Complexity

- Factor in stricter codes, tighter in-water work windows, stormwater upgrades, and fewer skilled workers.
- Choose alternatives (repair vs. rebuild) based on lifecycle value, not just upfront cost.

Top Takeaway

Aging doesn't mean obsolete. With thoughtful planning, cross-functional teams, and regional collaboration, public ports can extend asset life, enhance safety, and unlock value.

Appendix E

Legislative Advocacy Brief

Draft

Port Legislative Advocacy Brief
A Call to Action: Now Is the Time to Support Port Infrastructure Development and Permitting Reform

Seaports across the United States are grappling with aging infrastructure, rising construction costs, regulatory complexities, and operational demands that far outpace available funding, which is having an outsized impact at small and medium-sized ports. The United States relies on ports to play critical roles in global supply chains having a major impact on their regional economies as well as the nation's economy. Highlighted by Cary Davis, CEO and President of AAPA, in testimony to the Department of Homeland Security in February 2025, "According to a recently released economic contributions report from former Congressional Budget Office economists, our ports are responsible for $2.89 trillion in economic activity and 21.8 million American jobs, or more than one out of every eight jobs in our nation's workforce."

To maintain this critical role, port's need your help more than ever today in these key areas:

- ***Regulatory reform to streamline federal permitting processes***

  Port leaders nationwide stress that lengthy reviews and increased complexity are slowing critical projects, causing negative economic and national security impacts, and adding significant cost due to delays.

- ***Adequately fund and staff federal regulatory and resource agencies to support permitting processes***
  Recent federal agency staff reductions are expected to slow environmental reviews, delay infrastructure projects, and weaken the government's capacity to manage complex regulatory functions in the absence of necessary regulatory reform.

- ***Develop and deploy artificial intelligence (AI) tools at agencies to accelerate permit reviews***
  Pacific Northwest National Laboratory's PermitAI is applying large language models to a searchable dataset of nearly 3,000 NEPA reviews, enabling rapid retrieval of precedent, semantic comment triage, and AI-assisted drafting, all while working to preserve the quality and defensibility of decision-making. Further research and development of AI tools should be pursued to assist all permitting agencies.

- ***Increased public investment in port infrastructure at small and medium sized ports***
  Small and medium-sized ports have large-port capital requirements and play a critical role in regional economies, national supply chain resilience, national security, and emergency preparedness. Yet they face persistent funding inequities that threaten their long-term viability.

A 2025 American Association of Port Authorities Professional Port Manager Capstone Paper, A Tale of Two Piers: Navigating the Challenges of Port Dock Redevelopment in the Ever-Changing Tides of Permitting, Financing, and Commercial Opportunities at the Ports of Everett and Vancouver USA, Washington State highlights and provides greater detail of these challenges.