State of Oregon
Department of Environmental Quality

Seismic Stability Program Annual Status Report

July 31, 2026

Document information

This document was prepared by:

Oregon Department of Environmental Quality

Fuel Tank Seismic Stability

700 NE Multnomah Street, Suite 600

Portland Oregon, 97232

Contact: Killian Stoltenburg

Phone: 971-295-8734

killian.stoltenburg@deq.oregon.gov

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Executive summary

The Fuel Tank Seismic Stability Program was established by the 2022 Oregon Legislature with the passage of Senate Bill 1567. The program aims to evaluate and improve earthquake safety of large oil and fuel storage facilities to minimize the risk of major spills, fires, and environmental contamination that could result from a seismic event. The program applies to facilities managing over 2 million gallons of fuel in Lane, Multnomah and Columbia counties and requires facilities to develop and implement a plan to reduce risk to surrounding communities and the environment. DEQ is responsible for reviewing and approving Seismic Vulnerability Assessments and Risk Mitigation Implementation Plans submitted by regulated facilities and provides technical assistance.

Passage of House Bill 4100 expanded the Fuel Tank Seismic Stability Program's oversight to include Certificates of Financial Responsibility, prompting an upcoming rulemaking to ensure facilities demonstrate adequate financial assurance for spill-related liabilities. Collectively, these efforts will reflect a year of intensive technical work, strengthened regulatory infrastructure, and measurable progress in 2026 – 2027.

From July 2025 through June 2026, the Fuel Tank Seismic Stability Program made significant progress toward seismic risk reduction across Oregon's fuel systems. Fourteen terminals continue to advance through the Seismic Vulnerability Assessment process, with substantial activity in geotechnical characterization, complex soil-structure interaction modeling, and refinement of facility structural analyses. These assessments require deeper technical rigor than standard industry practice to meet Oregon's performance objectives, resulting in extended timelines but improved accuracy and readiness for future mitigation planning. Additionally, two facilities continue to implement approved Risk Mitigation Implementation Plans, initiating major upgrades such as tank replacements and decommissioning actions that meaningfully reduce seismic spill risk. The program strengthened implementation capacity through sustained engagement with engineering consultants, academic researchers, geological experts, and Washington's Spill Prevention Program, enabling consistent technical review, interagency coordination, and cross-state alignment.

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1. Introduction

This report highlights the activities of the Fuel Tank Seismic Stability Program during the July 2025 – June 2026 period. The intention of the FTSS program is to safeguard public health, life safety and the environment from earthquake-induced oil spills from Oregon's largest facilities and their subsequent effects. The FTSS team provides technical assistance to facilities, ensures compliance with regulatory requirements and promotes the adoption of best practices in seismic resilience.

During the 2025–2026 period, DEQ efforts have focused on supporting facilities through review of geotechnical characterization results as part of the Seismic Vulnerability Assessment phase, which has resulted in geotechnical reports that meet program expectations. These site characterizations form the basis for assessing seismic hazards, liquefaction potential, and soil-structure interactions, which in turn guide each facility's vulnerability assessment and eventual Risk Mitigation Implementation Plan. Because Oregon's performance objectives (i.e., Maximum Allowable Uncontained Spill) require more rigorous analyses than standard industry practice, additional time has been needed for back-and-forth technical discussions, data interpretation and agreement on assessment methods and goals. Timelines are also influenced by external constraints, such as the availability of specialized contractors and the capacity of geotechnical laboratories. Together, these factors explain why SVAs take time to complete, and why thorough SVAs are worthwhile in preparing for mitigation plans.

1.1. Fuel Tank Seismic Stability Program Authority

The Fuel Tank Seismic Stability Program statutory authority is provided by ORS 468B.513 to 468B.525 and detailed in OAR Chapter 340 Division 300, which was adopted by the Oregon Environmental Quality Commission in consultation with the Oregon Department of Geology and Mineral Industries and the Oregon Department of Energy on September 14, 2023. Under the FTSS program, bulk oils and liquid fuels terminals with a facility capacity of 2 million gallons or more in Multnomah, Lane, and Columbia counties are required to conduct and submit Seismic Vulnerability Assessments that consist of geotechnical, structural and safety assessments. Within 6 months of the approval of a vulnerability assessment, facilities must submit Risk Mitigation Implementation Plans that will address identified seismic vulnerabilities within ten years of plan approval. DEQ is responsible for reviewing and approving all Seismic Vulnerability Assessments and Risk Mitigation Implementation Plans submitted by regulated facilities. In addition to SVA and FTSS reviews, the FTSS program provides technical assistance, oversight, and enforcement.

2. Program Implementation Updates

2.1. Seismic Vulnerability Assessment Progress

Facility Seismic Vulnerability Assessments, as described in OAR 340-300-0003, consist of (1) geotechnical, (2) structural, and (3) safety assessments.

(1) Geotechnical assessments consist of site surface and sub-surface conditions evaluation, complete with soil tests and field explorations. These assessments are critical in determining the anticipated behavior of the surface and sub-surface at a facility to model soil-structure interactions and potential improvements from ground stabilization mitigation techniques. Geotechnical investigations generally preceded structural assessments, but there is a critical feedback loop in these assessments: site conditions inform the understanding of the load's earthquakes place on structures, and structural vulnerabilities drive more complex geotechnical investigations to improve model accuracy.
(2) Structural assessments describe the expected seismic performance of all onsite structures where damage could result in the potential release of oil or otherwise impede the ability of a facility to enact post-earthquake safety procedures. Structural assessments investigate any above or underground storage tanks, pipes, foundations of structures, buildings, structures, additional components, spill containment structures, transloading facilities, wharves, piers, moorings and retaining structures, loading racks, control equipment and any other oil handling structures within the property line or properties operated together.
(3) Safety assessments consist of three elements: (a) Evaluation of the fire control and suppression systems and procedures and analysis of the potential impacts of seismic hazards on these systems. (b) Evaluation of spill containment systems, equipment, and procedures in the event of an earthquake and their vulnerabilities to the identified seismic hazards at the site. And (c), evaluation of onsite emergency equipment, operational safety measures, and personnel policies/availability and their vulnerabilities to the identified seismic hazards at the site.

Seismic Vulnerability Assessments are best understood as an iterative process consisting of initial submissions from facilities, reviews, comments and requests for additional information from DEQ, submission of additional information by facilities, and review of new information. DEQ reviews may result in comment logs depending on the complexity of the information provided and the number of anticipated comments from DEQ's engineering consultants. Each facility is required to maintain a project timeline approved by the DEQ and can request extension for reasonable cause and upon demonstrating meaningful progress towards a final Seismic Vulnerability Assessment. Once the final SVA is approved, the facilities have 180 days to develop and submit their Risk Mitigation Implementation Plans. This aggressive timeline for RMIPs has encouraged the regulated facilities to conduct intensive SVAs that exceed standard industry practice to address program requirements and to enable effective RMIPs.

In total, 14 regulated facilities are in the SVA phase including 12 facilities in Multnomah County, one in Lane County, and one in Columbia County. Each of these facilities submitted a draft SVA ahead of the statutory deadline of June 30, 2024, which began dialogue with DEQ. A summary of the status of each facility's SVA process is provided in the next section.

2.1.1. Multnomah County SVAs

- **Chevron Fuels, Willbridge Terminal:** Chevron submitted an SVA on May 30, 2024. DEQ reviewed and responded with comments on March 14, 2025. DEQ met with Chevron on May 29, 2025. On June 13, 2025, Chevron submitted a request to provide a revised SVA to DEQ

by Dec. 13, 2025. The request was approved on July 15, 2025. The facility submitted an updated SVA on Dec. 13, 2025. DEQ comments were provided on March 10, 2026, and an updated SVA is due Sept. 1, 2026.

- **Kinder Morgan Willbridge**: Kinder Morgan submitted a SVAs for three separate facilities (Willbridge, Linnton and Eugene) on May 29, 2024. Kinder Morgan submittals included their responses to DEQ's requested geotechnical checklist. Kinder Morgan submitted revised SVAs for all three facilities on March 28, 2025. DEQ reviewed, provided all three facilities with comments on May 12, 2025, and held a meeting to discuss the SVA process on July 24, 2025. In November 2025, Kinder Morgan submitted a schedule for SVA completion with the next SVA submittal due in July 2027.

- **Kinder Morgan Linnton**: See "Kinder Morgan Willbridge," above.

- **McCall Oil & Chemical Corporation:** McCall submitted its SVA on May 31, 2024. McCall submitted its project schedule on April 4, 2025. On May 29, 2025, McCall requested an extension to their project schedule to allow for in-water work. This request was approved to allow for the geotechnical data report to be submitted by June 30, 2026. A phase 1 geotechnical data report was received by the DEQ on May 11, 2026. On May 18, 2026, McCall submitted an updated project schedule for submission of the geotechnical data report and SVA due to learning DEQ's expectations of required information. DEQ sent comments on June 4, 2026. The facility's next geotechnical data report is due Jan. 31, 2027, and an updated SVA is due July 31, 2027.

- **NW Natural Corporation:** NWN submitted their SVA on May 31, 2024. DEQ provided comments on March 13, 2025. On April 11, 2025, NWN submitted a letter responding to DEQ's comments with additional information. DEQ provided NW Natural with comments on July 10, 2025, and set a deadline of Aug. 8, 2025, for the facility to respond with the updated SVA schedule. NWN responded on August 8, 2025, and included a project schedule. DEQ approved the Gantt chart on Sept. 22, 2025. A ground improvement memo was submitted to DEQ on December 12, 2025. A meeting was held on July 9, 2026, to update the DEQ on methodologies and site investigation results and analyses to-date. The updated SVA is due August 2027.

- **Owens Corning Roofing and Asphalt LLC:** Owens Corning submitted their initial SVA on May 31, 2024. DEQ responded on May 27, 2025, with review comments on the SVA. Owens Corning responded on June 9, 2025, with a high-level project schedule. Owens Corning submitted an updated project schedule on Aug. 5, 2025. DEQ responded on Sept. 23, 2025, requesting clarification of the long timeline required for submitting the SVA, and DEQ recognized the inclusion of RMIP analyses. Owens Corning submitted an updated schedule on Dec. 12, 2025, including dates for multiple check-ins. DEQ approved the schedule on Dec. 15, 2025. Owens Corning submitted its geotechnical exploration plan on April 3, 2026. DEQ provided comments on June 2, 2026. The facility then submitted a geotechnical data report, and the DEQ responded that it was adequate on July 2, 2026. DEQ met with facility

and their consultant on July 8, 2026, to discuss the contents and the timeline. The updated SVA is due Dec. 31, 2028.

- **Pacific Terminal Services:** Pacific Terminals submitted their initial SVA on May 31, 2024. Pacific Terminals is operating on a parcel owned by NW Natural, and the future operation of this facility is being coordinated by the owner and operator. On Oct. 22, 2025, NWN communicated a tentative plan for addressing Pacific Terminal's site in which it proposed to submit a geotechnical memo, draft a mitigation plan, and remove the tanks. On Oct. 23, 2025, DEQ approved the tentative plan and requested additional information. On April 7, 2026, NW Natural shared their tentative plans to bring Pacific Terminal's tanks out of service by the end of 2026**.**

- **Phillips 66 Company:** Phillips 66 submitted their SVA on May 30, 2024. Phillips 66 submitted a project schedule on April 14, 2025. On July 15, 2025, Phillips 66 submitted a geotechnical data report. On Sept. 23, 2025, DEQ requested more information after reviewing the report. On Oct. 16, 2025, Phillips 66 submitted responses to DEQ's request for information letter. Phillips 66 submitted the geotechnical engineering report phase 2 on Nov. 14, 2025. DEQ responded with comments on April 23, 2026. The updated SVA is due Dec. 31, 2026.

- **Seaport Midstream Partners, LLC:** Seaport submitted their SVA on May 31, 2024. DEQ provided review comments on June 5, 2025. On Feb. 28, 2025, Seaport requested a meeting to discuss SVA expectations, and a corresponding meeting was held on March 6, 2025. On June 13, 2025, Seaport submitted a project schedule for completing the SVA. DEQ approved Seaport's revised project schedule on July 15, 2025. The revised SVA is now due Dec. 31, 2026.

- **Shore Terminals LLC - NuStar Energy-Sunoco:** Sunoco submitted their SVA on May 30, 2024, and a geotechnical checklist on February 26, 2025. On July 11, 2025, DEQ met with Sunoco to provide comments and clarify expectations. Also on this date, Sunoco submitted a high-level project schedule. DEQ approved the schedule with a request for a more detailed Gantt chart. Sunoco submitted the Gantt chart on Oct. 7, 2025. DEQ approved the schedule on Oct. 8, 2025. Sunoco's updated SVA is due Dec. 31, 2026.

- **Triton West LLC – Shell:** Shell submitted their SVA on May 31, 2024. DEQ responded with a review letter on March 14, 2025. Shell responded April 11, 2025 and Oct. 20, 2025, proposing a schedule which outlined future submission of a draft geotechnical report by March 31, 2026, and an SVA by Oct. 30, 2026. This schedule was approved by DEQ on Oct. 30, 2025. The updated SVA is currently due Dec. 31, 2026.

- **Zenith Energy Terminals:** Zenith submitted their SVA on May 30, 2024.DEQ reviewed and provided comments on April 3, 2025. DEQ met with the facility and its consultants to discuss the scope, timeline and expectations on July 25, 2025. Zenith submitted a Gantt chart on Aug. 29, 2025, and DEQ approved it on Oct. 13, 2025. In early 2026, Zenith submitted

various documents, specifically tank information, a seismic risk evaluation, tank grouping information, and site figures. On June 18, 2026, DEQ received a request for an extension to the SVA submittal date to allow time for improving the tank sampling methodology for the soil-structure interaction evaluation. This request was approved and the updated SVA is due Oct. 31, 2027.

2.1.2. Lane County SVAs

- **Kinder Morgan Eugene:** See “Kinder Morgan Willbridge,” above.

2.1.3. Columbia County SVAs

- **Cascade Kelly Holdings LLC (Pacific Bio-Refinery):** Cascade Kelly Holdings submitted its workplan, which DEQ reviewed and conditionally approved, pending a few changes requested by DEQ. The facility submitted the requested information on June 6, 2025. DEQ received a geotechnical data report on Dec. 30, 2025. In April 2026, DEQ received the final geotechnical SVA and structural draft. A complete draft SVA is expected July 31, 2026, and an additional updated SVA in September 2026.

2.2. Risk Mitigation Implementation Plan Progress

Following the completion of the Seismic Vulnerability Assessments, DEQ requires facilities to submit Risk Mitigation Implementation Plans outlining measures to reduce identified seismic vulnerabilities. RMIPs must be submitted to DEQ 180 days after the SVA is approved. OAR 340-300-0004 describes the RMIP requirements, which include: (1) Proposed risk mitigation measures to address vulnerabilities identified in the Seismic Vulnerability Assessment to protect public health, life safety and the environment. (2) Justified milestones for one-, three- and five-year mitigation activities with a maximum of 10 years to implement the remedial actions. And (3) identify the residual risks that remain after all mitigation measures are implemented and communicate risks to public agencies and communities. DEQ will use residual risk information to support mitigation plan approval decisions and to guide coordination with public agencies and communities.

In total, two facilities have approved RMIPs, one in Multnomah County and one in Columbia County. These RMIPs and their status are summarized below.

2.2.1. Multnomah County RMIPs

- **PDX Fuel, LLC**: PDX Fuels is in the process of replacing the three existing tanks with the new Risk Category IV compliant tanks. PDX Fuel company submitted its first annual implementation report in June 2025 indicating compliance with the risk mitigation implementation timeline established in RMIP. DEQ approved PDX Fuel LLC’s RMIP following the required public comment and hearings process. PDX Fuel has subsequently submitted its quarterly and annual reports. PDX Fuel expects the new tanks to be constructed and in service in August 2027 and then will decommission old tanks in 2028.

2.2.2. Columbia County RMIPs

- **Portland General Electric - Beaver Plant/Port Westward:** DEQ approved PGE's SVA in November of 2024. PGE submitted an RMIP in April 2025 proposing bringing the tanks out of service to mitigate risk. DEQ initiated the public comment hearing process for the RMIP with the public comment closing in August 2025. DEQ approved PGE's RMIP following a public comments process. PGE has subsequently submitted its quarterly and annual reports. PGE stopped diesel use at their Beaver Plant in March 2026, in compliance with their Air Quality permit, and are removing remaining oils and bringing tanks out of service in late 2026.

2.3. Mutual Agreement and Final Order Progress

- **Vigor:** One facility in Multnomah County, owned by Vigor Marine Group, opted to enter an enforceable agreement, known as a Mutual Agreement and Final Order, with DEQ ahead of the initial SVA deadline to opt out of the program by eliminating their bulk oils storage capacity. Vigor has been submitting bi-monthly reports to DEQ and is expected to complete the closure of its oil operation by June 2, 2028, as agreed upon in the MAO signed on May 30, 2024. DEQ conducted an inspection in June 2025 to confirm the facility's progress and compliance.

2.4. Technical Assistance and Contractor Activities

To support effective program implementation, the FTSS program employs a variety of contracts with public and private entities to support SVA and RMIP review and to advance best practices in seismic mitigation at the regulated facilities. Four contracts are fundamental to these objectives. First, the Moffatt and Nichol engineering firm, including the subconsultant New Albion Consulting are the lead engineers on SVA and RMIP review process. Portland State University provides critical academic research and convening support. The Oregon Department of Geology and Mineral Industries provides supplementary review support and assists with co-seismic hazard identification and science communication outcomes. Lastly, Washington State's Department of Ecology, who are implementing a similar regulatory program, provide guidance on implementation questions, support cross-state coordination and critically, are providing expertise to support the FTSS program's rulemaking process for Oregon House Bill 4100 (2026). The activities of each contract are summarized below.

2.4.1. Engineering Review Team

The Moffatt and Nichol's team specializes in marine terminals, transportation, energy and environmental engineering. Moffatt and Nichol's engineers and subconsultants involved in the SVA reviews are experts in geotechnical, structural and earthquake engineering, seismic inspection and the assessment of marine oil terminals and refinery structures and ground deformation effects on structures due to earthquakes. From 2025-2026, Moffat and Nichol continued to meet with facilities and their consultants to guide ongoing SVAs including discussing the rules expectations that exceed industry standards and to guide the development of effective RMIPs. Moffatt and Nichol have also continued to visit facilities alongside DEQ to

meet with the technical teams involved in SVA and RMIP development. Site visits and consultations are instrumental in providing tailored support to address seismic vulnerabilities.

2.4.2. Portland State University

PSU has been assisting DEQ since the 2022 rulemaking process. Between July 2025 and June 2026, PSU hosted a series of interagency coordination meetings that brought together dozens of public sector representatives to investigate the seismic readiness of critical infrastructure and emergency response capabilities at Oregon's CEI Hub, where most facilities regulated by the FTSS Program are located. This information will aid in determining the adequacy of proposed RMIPs which should consider the assumed post-earthquake availability of public infrastructure. More information and the outcomes of these convenings and associated research are summarized in the Interagency Coordination Activities Report.

The PSU team also supported graduate student research activities, including collating and analyzing data received from facilities to help DEQ evaluate consistency across facilities.

2.4.3. Department of Geology and Mineral Industries

DOGAMI has been advising the FTSS program since the rulemaking began in 2022 with a focus on providing regional geotechnical expertise and investigating co-seismic hazards near regulated facilities. The FTSS Program meets regularly with DOGAMI to share program updates and to plan for the development of public communication materials and other informational items for community members and regulated facilities. In 2026 to 2027, DOGAMI will provide DEQ public education resources, including a fact sheet/pamphlet and story map that help to explain the seismic and associated secondary hazards in the CEI Hub region.

2.4.4. State of Washington's Department of Ecology

WA Ecology's Spill Prevention, Preparedness, and Response Program and its WAC 173-180 Implementation Guidance for Class 1 Facilities and WAC 51-50-1613 rules informed the FTSS program design during the 2022 rulemaking and continue to help with program implementation. The FTSS program meets regularly with ECY staff to share program updates and receive guidance. In Spring 2026, the contract with ECY was expanded to include consultation support to the rulemaking process for Oregon House Bill 4100 (2026) which establishes requirements for regulated facilities to apply for and receive Certificates of Financial Responsibility from the DEQ that ensure the facility has financial assurances in place to pay for spill-related liabilities.

3. Next Steps

The next year promises significant advancement of the FTSS program and its objectives. The FTSS team will continue to oversee facilities with approved RMIPs and MAO to ensure compliance and safety. For the 14 facilities navigating the SVA process, DEQ anticipates intensive activities from facility consultants and the FTSS engineering team. The geotechnical assessment phase is underway, and conversations with facilities have prepared structural engineering teams to apply advanced vulnerability assessment methodologies. Following iterative geotechnical-structural investigations, facilities will conduct safety assessments.

Oregon legislature passed House Bill 4100 in the 2026 legislative session, expanding the FTSS program's authority. Regulated facilities will now be required to obtain Certificates of Financial Responsibility from DEQ upon demonstrating sufficient financial assurance mechanisms to cover spill-related liabilities up to the statutory maximum of $300 million in financial assurances. The FTSS program has begun the rulemaking process to ensure facilities are able to meet the statutory deadline of March 31, 2027, to apply for their COFR. More information about the rulemaking is available on the COFR rulemaking website and be sure to sign up for email or text updates for this rulemaking.

4. Conclusion

From 2025 to 2026 the FTSS program made substantial progress in strengthening seismic resilience at Oregon's largest fuel terminals. While SVA development remains an intensive, iterative process, facilities and DEQ have clarified expectations, established timelines, improved technical alignment and laid the groundwork for effective RMIP development. With two RMIPs already approved, key risk-reduction projects are underway. FTSS program partnerships deepened and continue to enhance technical reviews, research insights and coordination among regional partners. Looking ahead, the FTSS program is positioned for a pivotal year as structural assessments accelerate, RMIP oversight increases, and new financial responsibility requirements are implemented. Collectively, these efforts continue to advance Oregon's goal of reducing seismic-related fuel spill risks and increasing community safety and resilience. Please contact the FTSS program at SeismicStability@deq.oregon.gov with any questions.

5. Maps of Regulated Facilities by County

Figure 2. Map of Facilities Regulated by the Fuel Tank Seismic Stability Program in Multnomah County, Oregon

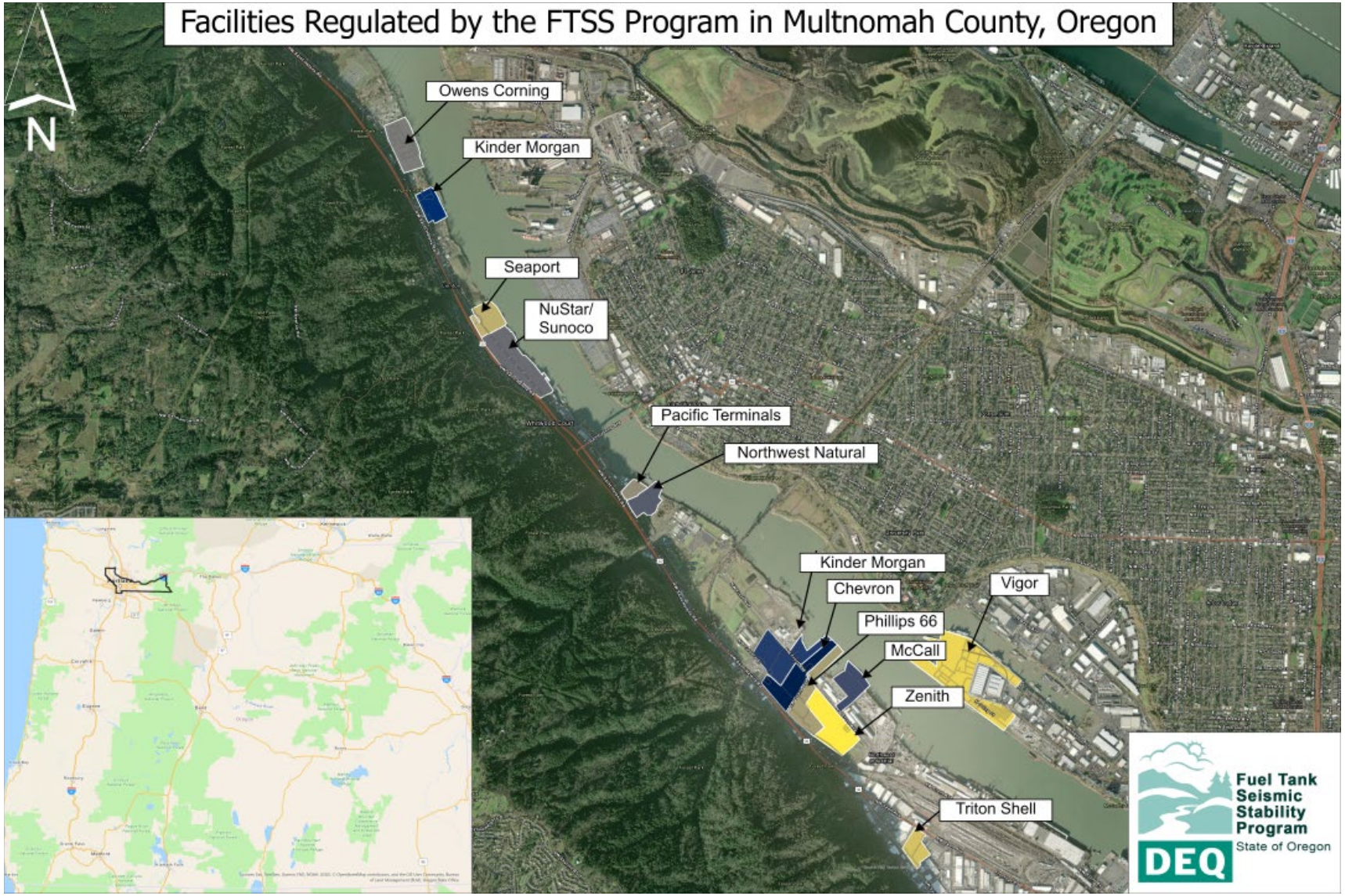

Figure 3. Map of Facilities Regulated by the Fuel Tank Seismic Stability Program in Lane County, Oregon

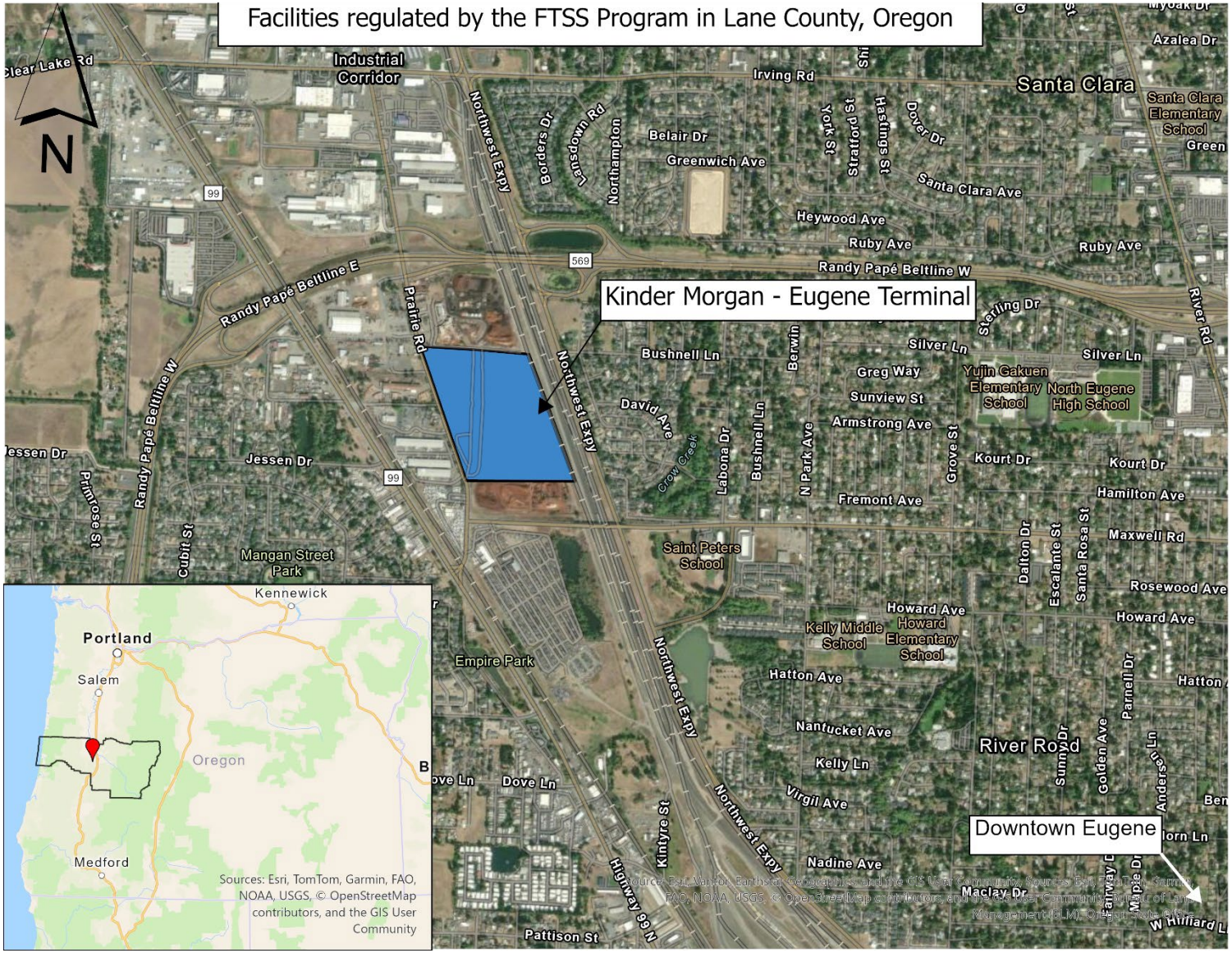
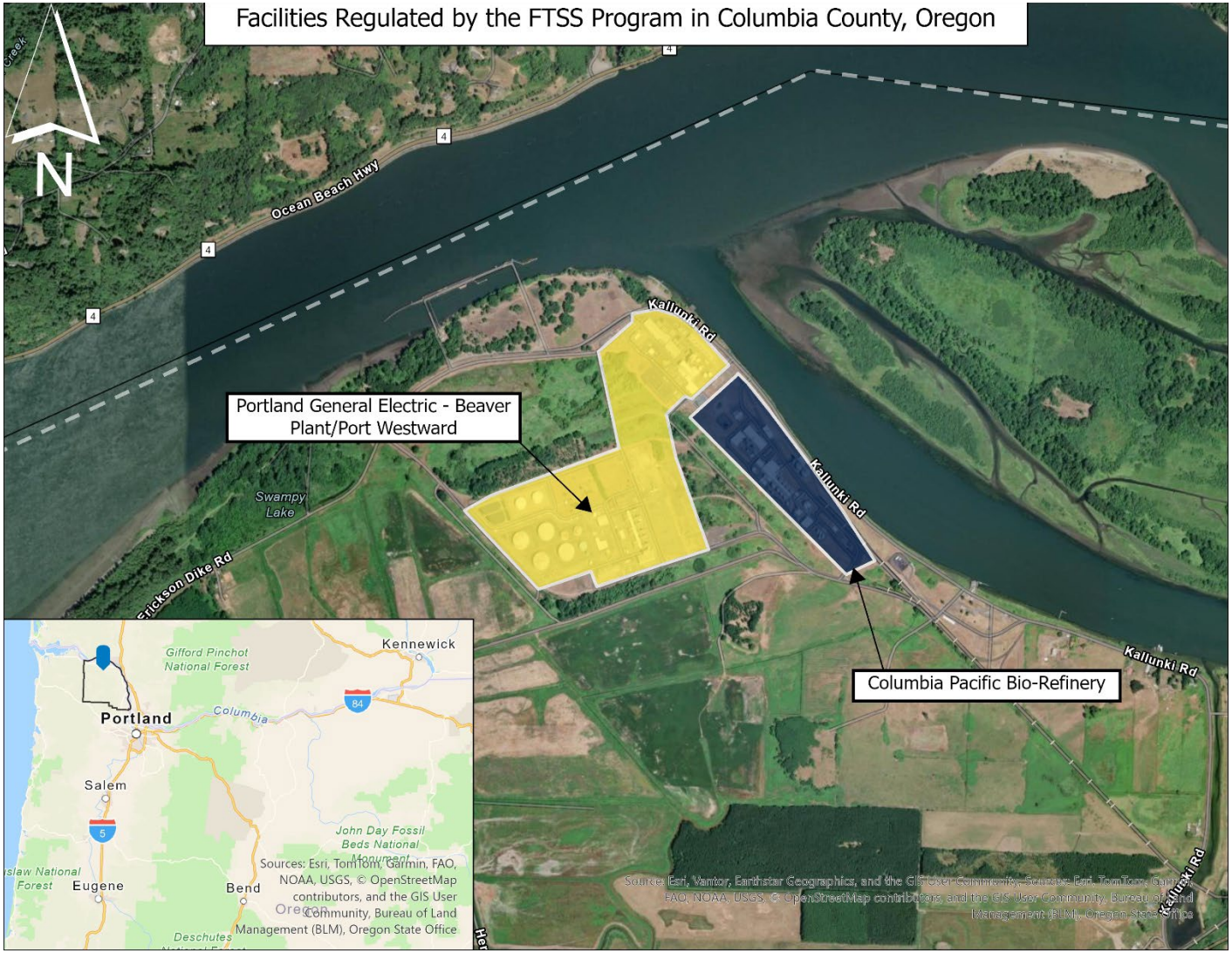
Figure 4. Map of Facilities Regulated by the Fuel Tank Seismic Stability Program in Columbia County, Oregon