

Port of Portland
Terminal 2 Economic Development Agency
NEPA Documentation
Modular Housing Manufacturing Facility



Prepared for
Port of Portland
7200 NE Airport Way
Portland, OR 97218



Prepared by
Mead & Hunt, Inc.
9600 NE Cascades Parkway, Suite 100
Portland, OR 97220

March 2022

The contents of this memo constitute the information required for the environmental narrative portion of the Terminal 2 EDA grant application. The information provided below reflects the content and structure provided in the EDA grant application materials.

A. PROJECT DESCRIPTION

1. Beneficiaries:

The Oregon Mass Timber Coalition's (Coalition) vision is to enhance and expand Oregon's established mass timber industry ecosystem, growing it into a significant regional cluster through a Build Back Better Regional Challenge Phase II EDA Grant Request. The goal is to promote economic recovery and forest management efforts in the Portland region through promoting job growth and private investment, while increasing resiliency within the region. The Coalition proposes the construction of a Modular Housing Manufacturing facility (MHM, or the project) in Terminal 2 Port of Portland that will manufacture and test prefabricated housing systems using mass timber.

As part of the overall site development (see Figure 4 Terminal 2 Full Development and Section 19 Cumulative Impacts), the Coalition will construct a Workforce Training Center that focuses on skills training in mass timber manufacturing, modular assembly and construction. A third proposed facility, the Acoustic Research Laboratory, will conduct research and development to expand commercial applications of mass timber products.

The facility will serve as a small business incubator, inclusive of women and black and indigenous people of color (BIPOC) communities, with opportunities for participants to gain experience in assembly and fabrication, manufacturing practices, and entrepreneurial skills. Beneficiaries to this proposed project are comprised of small businesses, low and moderate-income home buyers, BIPOC communities, and universities in manufacturing, acoustics research, and construction/trade/fabricator industries. The new supply of housing units benefit non-profit and commercial housing developers, jurisdictions with housing shortages (both in Oregon and Washington State), particularly in fire impacted communities such as Lyons, Oregon and ultimately individuals seeking high quality, relatively affordable housing.

2. Proposed Construction

The Port of Portland is proposing to construct a 194,000 sqft light industrial Modular Housing Manufacturing facility at Terminal 2 in the Northwest Industrial Area (detailed in the Preliminary Engineering Report). The facility consists of loading docks, parking stalls, lighting, and associated utility infrastructure (See Figure 1 Proposed Construction). The proposed project site has seven existing structures, four of which will be demolished:

- Warehouse 204, 80,700 sqtf, to be demolished;
- Warehouse 205, 94,500 sqtf, to be used as storage for operations,
- Warehouse 206, 90,000 sqtf, to be demolished;
- Gear locker (3154), 6,000 sqtf, to be demolished;
- Gear locker (3080), 9,000 sqtf, to be demolished;
- USACE Office, 36,000 sqtf, to remain with no changes.
- Terminal 2 Administrative, 9,000 sqtf, to remain with no changes;

The project is located within Township 1N, Range 1E, in Sections 20, 24, 28 and 29 in the City of Portland,

Multnomah County, Oregon. The site is flat, paved and adjacent to the Willamette River (see Attachment A Topographic map).

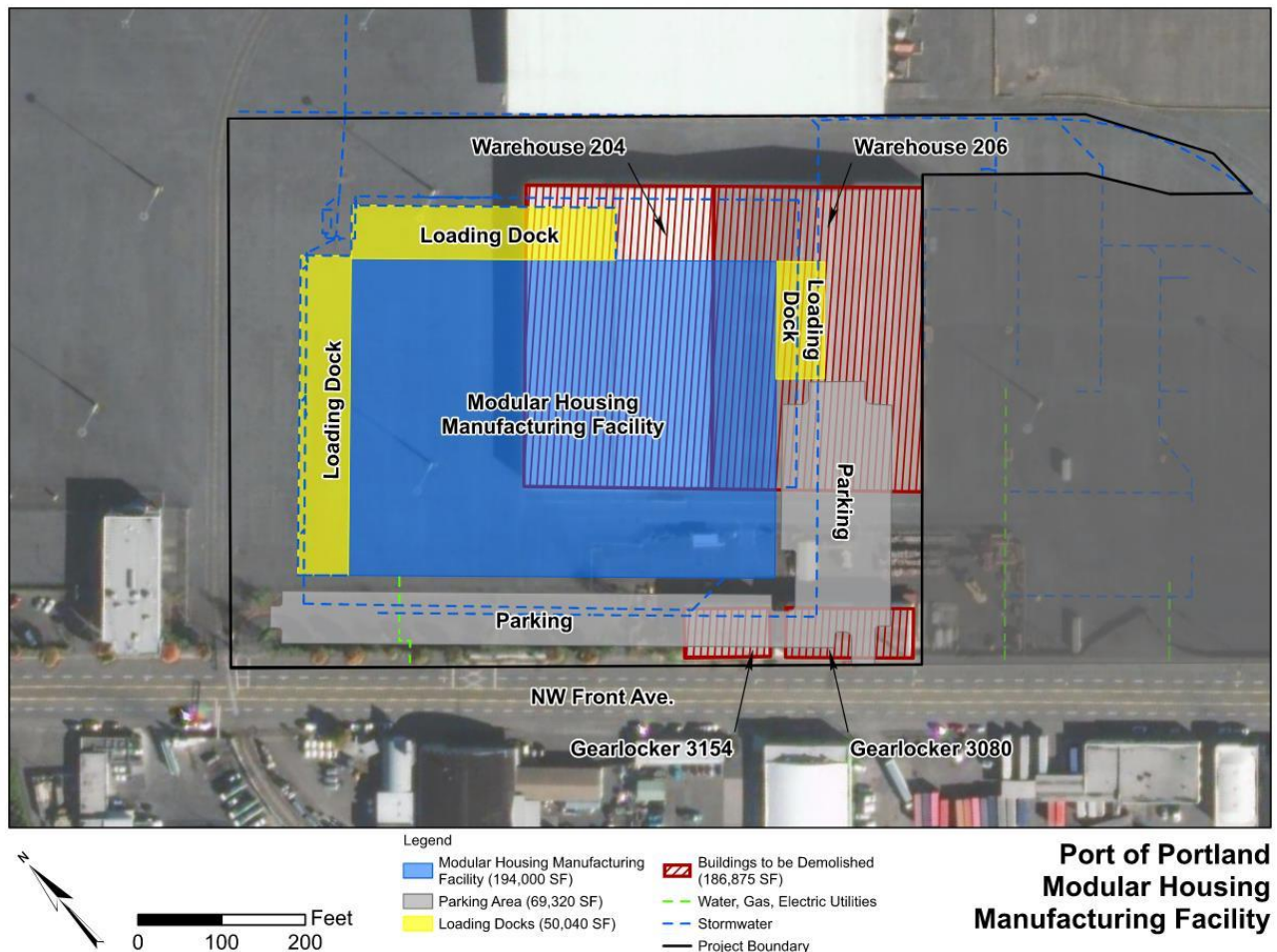


Figure 1 Proposed Construction

Planning phase work will determine specific timelines and the approximate schedule for design begins December 2022 and construction concludes by May 2026. Additional detail on the timing of project activities to be undertaken can be found in the Budget Narrative, submitted as part of the complete grant application (detailed in the Preliminary Engineering Report).

The site is fully paved, so this would include removal of the existing asphalt surface, regrading to construct the loading areas and bring the building pads up, and repaving after building construction. The depth of trenching for water utilities will be 4 feet and 9.5 feet for sewer and stormwater. Construction staging area would be located entirely within Terminal 2, and the existing driveway on NW Front Ave would provide construction access. Other project components for the full site development include:

- Facility foundation redevelopment (23,439 cut, 5,885 fill, 17,555 net (cut) cubic feet)
- Site grading for asphalt removal, gravel addition, grading, paving (552,857 sqft)
- Trenching and installation of utility connections/extensions to the proposed buildings to existing sanitary sewer, water, electrical, and natural gas:
 - 2604 ft (Water) + 2290 ft (Sewer) + 4267 ft (Stormwater)
- Modular Housing Manufacturing facility (194,000 sqft)
- Parking area (69,320 sqft) and loading docks (Approximately 50,040 sqft)

3. Need and Purpose

The purpose of this project is to develop an industrial site for mass timber panel manufacturing that does not create significant environmental or social impacts. The Port of Portland's plan for future industrial land development includes strategic goals for projects to be financially feasible, contribute to regional economic prosperity, and promote social equity. The need for a project that addresses affordable housing, forestry restoration and job creation is driven by local concerns and issues. Forestry and related industries have lost more than 14,000 jobs in Oregon since 2006 and additional impacts from wildfires are increasing. 4,000 dwelling units destroyed by the 2020 Labor Day wildfires housed low- to moderate-income households. The manufactured/plywood industry has lost 47 percent of employment since 2001 (from 12,352 to 8,383 jobs). In terms of employment since the start of the pandemic, Oregon lags the national average by 0.6 percentage points as of July 2021 (-4.4% in Oregon compared to - 3.7% nationwide).

A key goal of the initiative is to link equitable housing production and job growth to reduction of forest fire risk. Housing can be made affordable via optimization of high-volume automated manufacturing processes and the utilization of low-value wood species from salvage and restoration forest projects as input materials in mass timber products. Expanding mass timber's application can provide permanent affordable replacement housing for low income and wildfire-impacted populations, inclusive of BIPOC communities, and has further application as multi-story affordable housing in high-density urban neighborhoods. These units sequester carbon, replace energy-intensive materials such as steel and concrete, and contribute to wildfire risk reduction and rural job creation. Through the production, development, and use of new kit-of-parts mass timber housing systems the initiative can revolutionize how America builds affordable, high performance, and resilient homes, while at the same time make our communities more resilient through meeting housing needs, improving forest management, and creating well-paying skilled jobs in both rural and urban communities

4. Alternatives to the Proposed Project

Provided below is a description of alternatives that were considered during project planning. A two-part evaluation process was utilized to select the Preferred Alternative: 1) would the alternative meet the need and purpose by developing an industrial site that did not significantly impact the environment or society; and 2) is the alternative feasible and prudent. The term "feasible" refers to sound engineering principals, while the term "prudent" refers to rational judgement. This level of screening identifies and compares alternatives that meet most of the requirements and that do not have unique problems, costs, or an accumulation of impacts. The most prudent sites contained the following characteristics:

- Proximity to downtown Portland
- Road and freeway access
- Freight rail access
- Industrial zoning

- Appropriate site size

Alternatives:

1. *No Action:* No facility construction would occur to support the emerging mass timber industry. The site would remain developed as it currently exists. This alternative is required under NEPA and was not selected because does not meet the need and purpose and fails to meet selection criteria 1 to develop an industrial space.
2. *Preferred Alternative:* Develop Terminal 2 in the Northwest Industrial Area for a light industrial building and associated infrastructure for mass timber panels. This is the preferred alternative because it meets the purpose and need of the project and the site possessing no significant environmental or social impacts and was the most feasible and prudent alternative. This site was the most prudent alternative due to its proximity to downtown Portland, excellent access for freight delivery and distribution, location near rail and roadway infrastructure, as well as marine shipping terminals. The site is available, zoned for, and has the capacity for the proposed project and is the largest available industrial site in near proximity to downtown Portland.
3. *Alternative locations for Project:* The Portland area has other industrial areas that could be utilized for a similar development. While there were some locations that met the purpose and need for this project, development at other locations had environmental impacts or social impacts. Ultimately, no other location in Portland met all of the site characteristics and were less feasible or prudent than Alternative 3.

B. HISTORIC/ARCHEOLOGICAL RESOURCES

The area of potential effects (APE) encompasses approximately 51 acres within and adjacent to Terminal 2, which is zoned for heavy industrial use (Attachment B Cultural Resources Risk Assessment). The APE encompasses the following numbered parcels: R316326, R316330, R316342, R316344, and R316347, all of which are owned by the Port. The APE is bounded by Northwest Front Avenue Right of Way to the southwest, the Willamette River to the northeast, parcel R315985 to the northwest, and parcel R316362 to the southeast.

Records from the Oregon State Historic Preservation Office (SHPO) Oregon Archaeological Records Remote Access (OARRA) database and the Oregon Sites Database (OSD) for built environment resources were reviewed to determine if cultural resources have been previously recorded in or near the proposed project area and to determine if any cultural resources surveys have been conducted in the vicinity. Historic maps and aerial photography were also examined to determine the likelihood for prehistoric or historic resources to present in the area.

There are two previous cultural resources investigations overlapping with the Terminal 2 Mass Timber project area. There are no previously recorded archaeological resources that are within the project area. There are two resources within 1 mile of the project area. The Oregon Historic Sites Database lists one built environment historic resource within the Terminal 2 Mass Timber Project APE. Terminal 2 (also referred to in the evaluation as Municipal Terminal 1) was evaluated as an eligible/contributing resource in c. 1981. The survey focused on a building and dock that historically were located on the north side of the current Terminal 2 Property. This building and dock alignment are no longer extant. No other

previously recorded buildings or structures are located within the APE. Terminal 2 is currently being reevaluated as part of a separate undertaking. This updated evaluation would address the substantial changes that have occurred on the site since its establishment in the early 20th century. Warehouse 205 will be included in this survey effort.

The modular manufacturing building is located within the northern third of the APE and situated atop approximately 50 feet of dredged sand. This area is recommended to be low probability for the discovery of intact archaeological deposits. No further archaeological work is recommended for the building footprint prior to construction. Based on the architectural site plan, the modular manufacturing building will include the demolition of Warehouses 204 and 206 and SSA Gear Lockers (buildings 3080 and 3154) which currently occupy that space on Terminal 2.

The Port is prepared to initiate Section 106 consultation on behalf of EDA and has drafted consultation letters for Oregon SHPO and the appropriate Tribal consulting parties for the APE. Prior to construction, the Port would prepare an Inadvertent Discovery Plan (IDP) for the project, which would define the protocols to be followed by the Port and its contractors for inadvertent discovery of cultural resources and human remains during construction. The Port would also prepare a monitoring plan for the project prior to construction activities that clearly defines specific portions of the project likely to encounter native soils during excavation and require archaeological monitoring. The IDP and monitoring plan would incorporate feedback received from SHPO and the Tribes during consultation.

C. AFFECTED ENVIRONMENT

Potential direct and indirect impacts from the proposed project activities along with any associated mitigation for each resource area is provided below.

1. Affected Area

The proposed project site consists of approximately 49 acres along the west bank of the Willamette River amidst the City of Portland's Northwest Industrial Area in Multnomah County, Oregon in Sections 20, 21, 28, and 29 of Township 1 North, Range 1 East, Willamette Meridian (Figure 2 Terminal 2 Existing Structures). Initially developed in the late 1800's, the U.S. government later manufactured and built ships adjacent to Terminal 2 during World War II and launched. Terminal 2 became a public marine terminal after World War II. The three shipways were filled in during the 1960's and 1980's. The Port assumed ownership of the site after its merger with the Commission of Public Docks on January 1, 1971. Operations include cargo handling of lumber, plywood, pulp, and steel, storage, and equipment maintenance. The Terminal 2 site is located within a mile of the Pearl District (part of the central city) and two miles to downtown proper, within a developed industrial district. Terminal 2 has two freight rail spurs that provide access to regional and national destinations and includes a wharf suitable for barge access on the Willamette River. Existing public utilities include water and sewer, and franchise power, gas, and telecommunications. Power is provided by Portland General Electric and serves the existing adjacent industrial district from a nearby substation. Natural gas is provided by NW Natural which maintains a 6-inch gas main along NW Front Avenue. Given the existing development in the Terminal 2 vicinity, robust internet capacity is expected to be available from multiple service providers.

No State or National Parks, National Wildlife Refuges, Wild and Scenic Rivers, Wilderness Areas are located on or in the vicinity of the proposed project activities. The soils within Terminal 2 are 100 percent urban



land (USDA classification 50A), 0 to 3 percent slopes (Attachment C USDA Soils), and no prime farmland is

near the project area.

Figure 1 Terminal 2 Existing Structures

2. Coastal Zones

The project site is located on an upland location nearly 30 miles away from the nearest coastal zone. See Figure 3 below containing a map of the Oregon Coastal Zone.



Figure 1: Coastal Zone (Source: CoastalAtlas.net)

3. Wetlands

No wetlands are located at Terminal 2 as indicated by the lack of any pervious surface. The National Wetlands Inventory mapper indicates that the Willamette River, adjacent to the terminal, is classified as a Riverine, Tidal, Unconsolidated Bottom, Permanently Flooded-Tidal (R1UBV) habitat. No in-water construction is proposed that will impact the Willamette River.

4. Floodplains

The Willamette River is located along the northeast border of the site, and the floodplain for the river extends into the site. The current FIRM map indicates the "Zone AE" 100-year floodplain covers the majority of the northeastern portion of the site, including the existing Warehouse 205 building near the waterfront (Attachment D FEMA FIRMette).

However, the City of Portland has developed a more protective standard based on flood elevation information collected during the 1996 floods affecting the Willamette River. This 1996 Portland floodplain elevation of 33' roughly bisects the site, running from the western to southeast corner. The 1996 flood elevation is found by utilizing the Flood Insurance Study (FIS) river profile. The buildings on site are located at approximately river mile 10.05. The flood profile shows the base flood elevation per the NAVD 1988 datum at 31.5'. Using Morrison Street Bridge river gauge data, and the FIS river profile, the 1996 flood

was observed to approximately 1.5' higher than the FEMA base flood elevation. As such, the 1996 flood inundation elevation is equal to 31.5' + 1.5' or 33' (based on NAVD 1998 datum).

Existing elevations on site range from 23.0 to 36.35 feet. Since most of the site is within the 100-year floodplain boundary, new development is required to contribute no net fill to the floodplain. We have validated the net fill by comparing total flood storage (the volume between the ground surface and the base flood elevation) for the existing and proposed conditions. The following summarizes the floodplain analysis:

- Existing (pre-development site) flood storage.....116,209 cy
- Proposed (developed site) flood storage131,609 cy
- Net floodplain storage modification.....15,400 cy Cut
- Base flood elevation33.0 ft (NAVD 88)
- Proposed finish floor elevation34.0 ft

Recommendations for Floodplain Management

Our cut/fill analysis indicates that the proposed site grading will increase the flood storage at the Terminal 2 site through the required grading for the manufacturing facility loading docks. As a result, no additional floodplain fill mitigation is expected to be required. If the proposed site grading is modified, then the new design will need to be checked for net floodplain cut/fill volumes.

5. Climate Change

The Pacific Northwest region has warmed nearly 2°F since 1900, and this warming is partially attributable to human-caused emissions of greenhouse gases. Warmer winters have reduced mountain snowpack that historically blanketed the region's mountains, increasing wildfire risk and speeding the release of water for communities, agriculture, rivers, and soils. In 2015, record winter warmth led to record-low

snowpack in much of the Northwest's mountains as winter precipitation fell as rain instead of snow, resulting in drought, water scarcity, and large wildfires that negatively affected farmers, hydropower, drinking water, salmon, and recreation. Warmer ocean temperatures led to shifts in the marine ecosystem, challenges for salmon, and harmful algal blooms.

Rising air and water temperatures as well as changes in precipitation are intensifying droughts, increasing heavy downpours, reducing snowpack, and causing declines in surface water quality. Future climate change will augment stress on water supplies and adversely impact the availability of water in parts of the Pacific Northwest. Changes in the amount and timing of snow and rainfall are leading to mismatches between water availability and needs in some regions, posing threats to, for example, the future reliability of hydropower production in the Southwest and the Northwest (Summary Findings, Fourth National Climate Assessment, 2018)

The proposed project addresses the threats related to climate change on forest resiliency. A key goal of the initiative is to link housing manufacturing to the utilization of low-value wood species from salvage and restoration forest projects from mass timber products. Expanding mass timber's applications can provide replacement housing for wildfire-impacted populations. The panels sequester carbon, replace energy-intensive materials such as steel and concrete, and contribute to wildfire risk reduction.

While no project is exempt from risks posed by climate change, the location, scale, and components of this project inherently limit its vulnerability. This project is not located in or near the coastal zone, where the threats to infrastructure from sea level rise, erosion, and other factors pose a major threat. Similarly, the project's suburban location in the Portland Metropolitan region largely insulates it from the increasing frequency and severity of wildfires.

The 100-year floodplain covers the majority of the northeastern portion of the site and the depth to ground water is estimated to be approximately 100 feet below ground surface, the most likely risk to the project is increased flooding as a result of intense rainstorms. Historically, Portland averaged 1 intense rainstorm per year from 1961-1990. According to projections from the U.S. Climate Resilience Toolkit's Climate Explorer, annual counts of intense rainstorms – those that drop two or more inches in one day – are projected to increase between 1-5 percent from 2035-2064.

The Port of Portland has considered this risk thoroughly, and flood prevention has been a primary component of initial planning. Due its location, the project will be constructed to a local standard that is more protective than the Federal requirement and will increase flood storage on the site (see Section 4 Floodplains). Finally, during the design process the project will explore ways this project can incorporate creative solutions to reduce its carbon footprint. The manufacturing and training facilities have been enrolled in the Energy Trust of Oregon's Path to Net Zero and will pursue the goal of achieving net zero energy through the generation of on-site renewable power (PV). These facilities will pursue LEED certification, which will ensure a broad consideration of available means to minimize environmental impact and is also heavily focused on reduction of energy use and carbon footprint. Specifically, cross-laminated timber panels and low-carbon concrete will be used in the construction of these facilities to significantly reduce their embodied carbon footprint.

6. Endangered Species

The USFWS IPaC database was consulted to review endangered, threatened, or candidate species within

the project area (Attachment E, IPaC Resource List). The IPaC Resource List identified the following species that are present, or expected to be present, on or near the project area: Yellow-billed cuckoo (*Coccyzus americanus*), Northern Spotted Owl (*Strix occidentalis caurina*), Streaked Horned Lark (*Eremophila alpestris strigata*), Monarch Butterfly (*Danaus plexippus*), Nelson's Checker-mallow (*Sidalcea nelsoniana* and). No critical habitat for these species is located on the property.

Adjacent to the project area, the Willamette River is considered part of the Willamette/Lower Columbia River Recovery Domain for four ESA-listed salmon and steelhead species:

- Lower Columbia River Chinook salmon
- Lower Columbia River coho salmon
- Columbia River chum salmon
- Lower Columbia River steelhead

No aquatic features (wetlands, streams, or irrigation features) or fish habitat will be impacted by the proposed project. Indirect impacts of stormwater are addressed in Section 10 Water Resources. Based on the lack of habitat and known presence in the project area, there will be no direct or indirect impacts to ESA-listed species or their habitats.

7. Land Use and Zoning

Terminal 2 is located entirely within the city limits of Portland, Oregon. There are no “prime/unique agriculture lands” as designated by USDA either on the Site or near the Site. The Site is a former marine terminal, not in active use other than a warehouse and homeport for the US Army Corps of Engineers dredges *Essayons* and *Yaquina* and is decidedly industrial in character.

City of Portland land use and zoning designations for the Site include the following:

- 1) Comprehensive Plan: Industrial Sanctuary (IS)
- 2) Plan District: Guilds Lake Plan District (GS) - The Guild's Lake Industrial Sanctuary (GS) plan district fosters the preservation and growth of this premier industrial area adjacent to Portland's central city. The provisions of the plan district recognize that the displacement of industrial uses by inappropriate nonindustrial uses potentially threaten the integrity of this district and investments in public and private infrastructure.

3) Zoning:

- Heavy Industrial (IH) base zone
- River Industrial (i) and Prime Industrial (k) overlay zones

All neighboring properties to the Site have the same City of Portland land use and zoning designations as noted above and are currently in active industrial use.

Proposed Use:

- The proposed manufacturing facility is considered a “production of prefabricated structures” use under the manufacturing and production category, one of the categories allowed by right in the IH zone.

8. Solid Waste Management

The proposed project would support tenants to the Port of Portland who would engage in light manufacturing. Port tenants would be encouraged to achieve the Port and City of Portland standard of Zero Waste (greater than 90% waste diverted from landfill). The tenants would participate in the City of

Portland's waste collection and disposal program that includes recycling. It should also be noted that the tenants in this facility would also be regulated by the Oregon Department of Environmental Quality for any solid or liquid wastes that are generated. Each tenant agreement would require compliance with all local, state, and federal regulations related to waste.

9. Hazardous or Toxic Substances

The Port completed a Preliminary Assessment (PA) and Source Control Evaluation (SCE) at the Terminal 2 site in 2012. The primary focus was to determine if the subject site is a current source of contamination to the Willamette River (Portland Harbor Superfund site). Historical research conducted for the PA identified past activities and features that were considered potential areas of concern on the site. These potential sources included historical underground storage tanks (USTs) and general light industrial use (Attachment F OR DEQ NFA Determination).

Three USTs (1,500-gallon used oil, 2,750-gallon diesel, and 5,500-gallon gasoline) were removed from south of the gear locker building in 1997. Confirmation sampling showed no evidence of contamination beneath the USTs. Approximately 15 tons of diesel-impacted soil was removed beneath the concrete fueling pad. DEQ issued a no further action letter on May 18, 1998 (#26-97-0949). A heating oil underground storage tank (UST) was removed during demolition of Building 3060 in 1998. Approximately 108 tons of petroleum-contaminated soil were excavated and disposed off-site, and confirmation sampling resulted in closure by DEQ's Heating Oil Tank Program on October 17, 2001 (#26-98-0081).

Based on review of the file and the SCE, in 2013 DEQ concluded that the upland site is adequately characterized and does not appear to be a current or reasonably likely future source of contamination to the Willamette River. No additional upland source control work is needed, if implementation of the source control measures described in the stormwater pollution control plans and stormwater monitoring as mandated by the site's NPDES 1200-Z permits continue. No further action is required under the Oregon Environmental Cleanup Law.

During a 2002 survey for asbestos-containing materials (ACM), several buildings that will be demolished or utilized were identified to possess ACM (Attachment G Asbestos Surveys):

- Warehouse 205 - Stair coving, gypsum wallboard/joint compound, hard fittings, lay-in ceiling tiles, vinyl tile/mastic, and presumed built-up roofing material
- Gear Locker Building 3080 – Vinyl tile/mastic
- Gear Locker Storage 3154 – Vinyl tile/mastic

The Oregon Department of Environmental Quality requires Portland Metro (Metro) to screen for, and prevent the acceptance of, asbestos in materials brought to Metro Central and Metro South transfer stations. To ensure the safety of the public, Metro requires paperwork for all loads of construction, remodeling or demolition waste for materials that may contain asbestos. Two landfills close to the Portland area that can accept asbestos-containing waste are the Hillsboro Landfill and Wasco County Landfill. Licensed asbestos abatement contractors are required to remove ACM materials.

10. Water Resources

The Willamette River is adjacent to the project site, and the Columbia River is approximately 4.5 miles to the north. The nearest wetland is 2.5 miles to the north. Terminal 2 is not located near an EPA-designated sole source aquifer recharge area. The nearest recharge area, Troutdale Aquifer System Area SSA, is located approximately 5 miles north of the proposed project site in the state of Washington. The

Willamette River at Terminal 2 is Clean Water Act 303 (d) listed for bacteria, temperature, toxics, and biological criteria. A 2021 Environmental Protection Agency Final Action was completed for the Willamette Basin Mercury TMDL.

Existing storm drainage for the Terminal 2 site is provided through a system of area drains, building drains, and rail drains which connect to storm pipes (See Figure 1 Proposed Construction). The pipe system conveys runoff to two outfalls constructed at the edge of the wharf located at the north edge of the terminal and near berth 204. The existing drainage system does not include water quality treatment for the existing impervious areas at the terminal. The existing wharf drains at the water's edge of the terminal generally consist of direct-discharge drains. The proposed development is situated to avoid impact to the existing wharf drains, so it is not expected that the need to modify the direct discharge drains is required at this time. Any additional development which impacts the wharf will need to evaluate the drainage system for regulatory compliance.

The Port holds a 1200-Z industrial stormwater permit and 1200-CA construction stormwater permit applicable to the existing Terminal 2 facilities. Proposed new developments at the site would apply for a new 1200-Z permit as an operator, if triggered by the additional industrial activities listed in the 1200-Z permit table 2 (Oregon DEQ, 2022)¹. The 1200-CA is a programmatic permit issued by Oregon Department of Environmental Quality to public agencies for coverage of capital improvement construction projects. The 1200-CA permit requirements are as protective as the 1200-C construction stormwater permit required for all projects over one acre in size.

The new design will need to provide pollution reduction treatment, but flow control will not be required due to the direct discharge to the Willamette River. City of Portland typically requires vegetated stormwater facilities, which are appropriate for parking lots or pedestrian areas. In industrial areas such as truck courts, the City generally allows use of non-vegetated treatment such as filter vaults. No impacts are expected to water resources from construction or operation of the facility.

11. Water Supply and Distribution System

The local public water service is in compliance with the Safe Drinking Water Act and is available from an existing City of Portland Water Bureau 12" diameter water pipe within NW Front Ave along the western boundary of the property. The existing public water service is adequate to support additional industrial development at the site.

The fire service is expected to consist of an 8-inch connection to the public main with a double-check detector backflow protection device. On site, the fire line would loop around the buildings to provide fire sprinkler service and hydrant. Fire department connections are provided to each building.

12. Wastewater Collection and Treatment Facilities

Public sewer is provided to the Terminal 2 site by City of Portland Bureau of Environmental Services through a 15-inch diameter sewer pipe located in NW Front Ave adjacent to the property. This pipe flows north past the site to NW 26th Ave, then west to the Yeon sewer pump station at the intersection of NW Yeon Ave and NW 29th Ave.

¹ <https://www.oregon.gov/deq/FilterPermitsDocs/wqp1200zPermit.pdf>

The existing Terminal 2 on-site sewer system consists of conveyance pipes which serve each building on site and drain to an existing lift station located in the northwest portion of the site. Based on Port staff reports, the lift station was built circa 1988 and is in working order with adequate capacity. The proposed buildings and associated site improvements are not expected to generate high volumes of plumbing or process waste flow, and the existing pump station is expected to have capacity to handle the proposed additional flows.

Wastewater would be sent to the Columbia Boulevard Wastewater Treatment Plant located approximately eight miles from the project site. Sufficient capacity is available for the proposed development in the conveyance structures and at this location based upon expected discharges from this size and type of facility. No on-site wastewater treatment is expected by tenants. Should the discharge of large amounts of process water be needed by a tenant, these discharges would be in accordance with the City's Bureau of Environmental Services standards.

The Columbia Boulevard Wastewater Treatment Plant is part of a collection and treatment system that serves over 600,000 residential and commercial customers. The plant operates every day around the clock to manage, monitor and adjust the treatment process. Sewage pump stations and pipes convey wastewater to the facility 24 hours a day.

13. Environmental Justice (Executive Order 12898)

A broad area surrounding the project site was analyzed for low-income and minority populations (see Attachment H EPA EJSCREEN Report). This area encompasses approximately 3.14 square miles and is home to approximately 6,000 people. Information for this area compared to state-wide data shows that low-income and minority populations are somewhat lower in the general project area. In addition, populations of seniors and children are slightly lower in the general project area than the state.

No individuals reside within the Northwest Industrial Area boundaries. For this reason, the only possible impacts from the proposed project on minority or disadvantaged populations would be associated with traffic accessing the site. No traffic impacts are expected during construction or operation of the proposed facility and all residents in nearby areas would continue to have the same level of access to services that they currently experience. No disproportionate or adverse effects are expected from this project on low-income or minority populations.

A key goal of this initiative is to link equitable housing production and job growth to reduction of forest fire risk. Housing can be made more affordable by optimizing high-volume automated manufacturing processes and utilizing low-value wood species for mass timber products. Expanding mass timber's implementation can provide affordable replacement housing for low income BIPOC communities.

14. Transportation (Streets, Traffic and Parking)

The site has frontage on NW Front Avenue, which is classified as a District Collector and a City Walkway. The existing site public frontage along NW Front Avenue includes a 4-foot sidewalk, a 6-inch curb, and a 2-foot frontage zone between the property line and the sidewalk. Existing improvements also include two 6 foot wide and 110-foot-long public stormwater treatment facilities along the site frontage. The existing "sidewalk corridor" is between 6.5 feet without and 12.5 feet with stormwater treatments. The ROW width along the site is approximately 101 feet, and the curb-to-curb street width is 84 feet with four 12-foot travel lanes, one two-way left turn lane, and two parking lanes.

The PBOT Development Review Manual dictates that all roads classified other than Local Service Street and not within a residential zone will be designed on a case-by-case basis, but that these streets must have a width of at least 36 feet to accommodate two travel lanes and two parking or bike lanes.

A sidewalk corridor width of 12 feet is recommended for City Walkways: a 6-inch curb zone, 4-foot furnishing zone, 6 foot through pedestrian zone, and 1.5-foot frontage zone. To expand the sidewalk corridor to meet this standard on the development frontage, up to 6 more feet of ROW would need to be dedicated. Except for the added stormwater facilities, the frontage conditions of the site are consistent with those of all surrounding sites.

The site is proposed to have three driveways – two serving the manufacturing facility and one serving the lab and training facilities. City of Portland driveway standards allow for multiple driveways on sites with long frontages and when separation of truck traffic from passenger vehicles is proposed. The driveways as proposed meet City standards.

The facility will generate between 140-170 AM new peak hour trips and between 170-190 new PM peak hour trips, and between 1100-1400 daily trips. To ensure capacity and operation of the site driveways, the higher trip generation estimate presented below was used in our analysis.

Table 1: Trip Generation

Building	Condition	ITE Code	Land Use	Size		AM Peak Hour			PM Peak Hour			Daily
						In	Out	Total	In	Out	Total	
CLT/Timber	Proposed	140	Manufacturing	190	KSF	95	30	125	46	102	148	918
Workforce training	Proposed	760	Research And Development Center	20	KSF	17	4	21	3	17	20	222
Acoustics lab	Proposed	760	Research And Development Center	17	KSF	15	3	18	3	14	17	188
Total				227	KSF	127	37	164	52	133	185	1328

Front Avenue is five lanes wide providing significant capacity along the site frontage and a center left turn lane for queuing while waiting to turn to the driveways.

Driveways will operate at a level of service “A” with low delays for left turns from Front Avenue and level of service “B” for left turns to Front Avenue. The driveway serving the training and lab facilities has capacity even during peak hours to handle trips from the occasional conferences and. Site driveways will see short queues of only 1 vehicle. It is recommended driveways allow for a minimum of two passenger vehicles to be queued (50 ft) and longer where trucks are expected. The intersection of Front Avenue with NW 26th Street has sufficient capacity for the added site trips, operating at a level of service “A”.

Recommendations for Improvements

Improve the sidewalk corridor to meet PBOT standards of 6-inch curb zone, 4-foot furnishing zone, 6 foot through pedestrian zone, and 1.5-foot frontage zone, which requires up to 6 more feet of ROW dedication. Alternatively, the existing sidewalk and ROW could be requested to remain through a Public Works Alternative Review process.

Driveway operation is expected to be at level of service “B” or better for each movement. Driveway throats should be a minimum of 50’ and where trucks will be frequent, driveway throats should be 100’. No other frontage or offsite transportation improvements are anticipated with the proposed development.

15. Air Quality

The proposed project will include the following elements:

- Demolition of four existing structures at the Terminal 2 marine facility
- Construction of the Mass Timber Manufacturing Facility
- Ongoing operation of the Mass Timber Manufacturing Facility

The proposed project will generate temporary construction-related emissions as well as permanent ongoing emissions from facility operations. Project-related construction and operation emissions were estimated for six “criteria” pollutants for which the US EPA has established numerical concentration-based standards or National Ambient Air Quality Standards (NAAQS)².

Construction emissions were based on construction equipment types and activity levels derived from preliminary project design data using ACEIT³ and emission factors estimated using the U.S. EPA’s MOVES2014b model. Construction and vehicle emissions were conservatively estimated using 2023 as the base year. While it is estimated that construction will occur over a 22-month period, construction-related emissions were conservatively aggregated into a single year.

Estimated emissions from facility operations included manufacturing and employee commutes. Manufacturing emissions were estimated for a full year of facility operation using preliminary design parameters, production rates, and materials used in similar operations. Estimated annual criteria pollutant emissions from project construction and operation are shown in the following table.

² The criteria pollutants consist of carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM) which includes particulate matter with a diameter of 10 microns or less (PM₁₀) and a diameter of 2.5 microns or less (PM_{2.5}), and sulfur dioxide (SO₂). Nitrogen oxides (NO_x) and volatile organic compound (VOC) are precursors to ozone. Criteria pollutants are the only air pollutants with federal standards (NAAQS) regulated by the EPA under the federal CAA.

³ The ACEIT was developed by the Transportation Research Board (TRB), Airport Cooperative Research Program (ACRP). ACRP Report 102, Guidance for Estimating Airport Construction Emissions, 2014, <http://www.trb.org/ACRP/Blurbs/170234.aspx>.

Mass Timber Manufacturing Facility Criteria Pollutant Emissions (Tons)							
Year	Source	CO	NO _x	SO ₂	PM ₁₀	PM _{2.5}	VOC
Construction							
2023 (22 months)	On-Road Motor Vehicles	3.78	0.93	8.2E-03	0.020	0.018	0.084
	Non-Road Equipment	10.9	11.3	0.030	1.09	1.04	2.40
	Fugitives	--	--	--	0.14	--	0.37
Construction Total		14.7	12.2	0.038	1.25	1.06	2.86
Operation							
2023	Passenger Vehicles	4.33	0.15	8.0E-03	4.0E-03	3.5E-03	0.055
	Deliveries and Product Shipping	0.24	0.49	9.9E-04	8.2E-03	7.5E-03	0.017
	Facility Operation	0.43	0.79	0.15	0.78	0.78	62.4
Operation Total		5.00	1.44	0.16	0.80	0.79	62.5

The facility will exceed de minimis thresholds that require an air quality permit. Project refinement and detailed design will be completed prior to permitting and will be used to evaluate the need and/or level of emission controls required to meet federal and state regulatory requirements.

Construction and operations related greenhouse gas (GHG) emissions were estimated for carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) and are presented in the table below. The estimated project-related annual GHG emissions are also presented in metric tons of CO₂ equivalent (CO₂e) based on the Global Warming Potentials (GWPs) of 1 for CO₂, 28 for CH₄, and 265 for N₂O.

Mass Timber Manufacturing Facility Greenhouse Gas Emissions (Tons)					
Year	Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction					
2023 (22 months)	On-Road Motor Vehicles	1,565	0.019	0.010	1,569
	Non-Road Equipment	10,986	--	--	10,986
	Fugitives	--	--	--	--
Construction Total		12,551	0.019	0.010	12,555
Operation					
2023	Passenger Vehicles	1,198	0.016	9.6E-03	1,201
	Deliveries and Product Shipping	297	2.7E-03	7.7E-04	298
	Operation	38.8	1.6E-03	3.2E-04	39.0
Operation Total		1,534	0.021	0.011	1,538

The Portland metropolitan area had previously been designated as nonattainment for the 1979 1-hour ozone National Ambient Air Quality Standard (NAAQS), but that standard and the associated nonattainment status were revoked during implementation of subsequent 8-hour ozone NAAQS. Currently the area is in attainment with both the 2008 and 2015 8-hour ozone NAAQS. In addition, parts of the Portland-Vancouver metropolitan area had been designated as nonattainment for the carbon monoxide (CO) NAAQS. The area was redesignated from nonattainment to maintenance for CO on

October 2, 1997. Following 20 years of attainment of the CO standard, the area transitioned from maintenance to attainment for CO on October 2, 2017. Currently, Terminal 2 is located in an airshed that meets all the NAAQS.

The Portland, Oregon /Vancouver, Washington metropolitan area has significant topographic features that separate the airshed into distinct sections. Located at the confluence of the Columbia and Willamette rivers, much of the airshed is within a broad valley/floodplain, with a range of hills on the west separating the central city from the western suburbs. Temperature inversions can periodically occur in the winter and trap pollutants in the lower levels of the valley. However, the Columbia River Gorge to the east produces strong easterly flow that inhibit the formation of inversions. The Willamette River also increases air flow to some extent.

16. Noise

The noise generated by construction and by operations of the facility would fall within the 75 dBA noise levels allowed by the City of Portland for industrial zoned areas.

17. Permits

The following environmental permits would be required for the proposed action:

- 1200-CA Erosion Control Permit - Issued by the Oregon Department of Environmental Quality
- Water Service Request - Approval by City of Portland Water Bureau
- Sewer and Fire Connection Permits - Issued by the City of Portland Development Services
- The Modular Housing Manufacturing facility will exceed *de minimis* levels of regulated air pollutants and will require a state or federal air permit

18. Public Notification/Controversy

The community has been made aware of the EDA Phase 1 award and pending EDA Phase 2 submittal through a variety of on-line, print media, television and radio broadcasts that specifically identified the proposed Acoustic Research Laboratory, Workforce Training Center and Mass Timber Housing Manufacturing Facility as discrete projects to be pursued in Phase 2:

- Port of Portland News Release (12/13/21, posted on the Port of Portland public website)
- Oregonian/Oregonlive Article (12/14/21)
- Eugene Register-Guard Article (12/16/21)
- U.S. Secretary of Commerce Gina M. Raimondo Press Release (12/13/21)
- U.S. Senator Jeff Merkley and Senator Ron Wyden Joint Press Release (12/22/21)
- University of Oregon Campus Article (12/14/21)
- KGW Broadcast News Story (12/14/21, televised broadcast and online)
- Oregon Public Broadcasting "Think Out Loud" Program (12/15/21, public radio broadcast and online)
- Port of Portland Commission meeting (1/12/22)

No public controversy or objections have come up with any of the three discrete projects proposed at Terminal 2 (Acoustic Research Laboratory, Workforce Training Center and Mass Timber Housing Manufacturing Facility).

19. Cumulative Effects

Reasonably foreseeable projects within the Northwest Industrial Area are included in this analysis of cumulative effects. These projects are also part of this EDA grant but have an independent finding process. As part of the EDA grant process, the Port of Portland is proposing to construct a workforce training center, an acoustics laboratory, and associated infrastructure at Terminal 2.

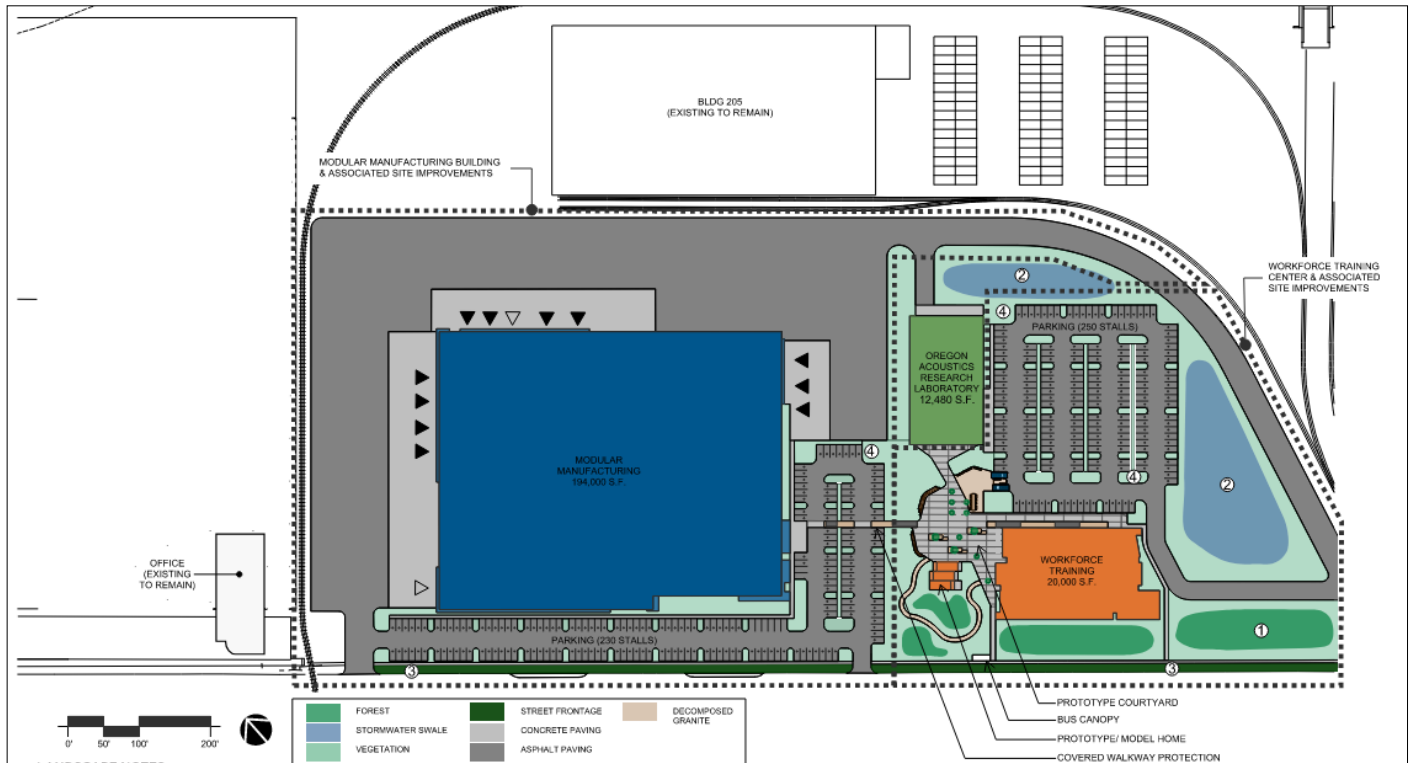


Figure 2 Terminal 2 Full Development

All project components for the currently proposed site development include:

- Modular Housing Manufacturing facility (194,000 sqft)
- Workforce Training Center is a 20,000 sqft office space for employee training for modular housing and other future manufacturing facilities.
- Proposed Acoustic Laboratory is a 12,480 sqft research facility for panel acoustics.
- Expansion and connection to the existing drainage system or infiltration areas
- Expansion of existing sanitary sewer, water, electrical, and natural gas
- Approximately 208,400 sqft of paved parking, loading docks, and sidewalks
- 480 parking spaces
- Exterior lighting for parking and loading dock areas
- Approximately 258,000 sf of foundation redevelopment
- Loading docks (Approximately 50,040 sqft)

This review of environmental categories under NEPA did not find impacts for any category for this project, or any of the associated Terminal 2 EDA projects. There are no cumulative impacts for the Terminal 2 project under NEPA.

D. MITIGATION

No mitigation is required for any aspect of this project.

E. LIST OF ATTACHMENTS

The following attachments are provided to provide additional information for the environmental narrative:

- Attachment A: Topographic map
- Attachment B: Cultural Resources Risk Assessment
- Attachment C: USDA Soils
- Attachment D: FEMA FIRMette
- Attachment E: IPaC Resource List
- Attachment F: OR DEQ NFA Determination
- Attachment G: Asbestos Surveys
- Attachment H: EJSCREEN Report for Multnomah County
- Attachment I: Air Quality Analysis Calculations