Marine Services **Report**

Spring 2025

Prepared For :
Susan Yirku, Kelly Rupp,
Livable city Year

Prepared By :
Studio 507 Group
URBAN 507 Studio: Duncan Fields, John Levin, Noal Leonetti, Riah Maxim, Jocelyn Ostrowski, Yasmeen Sobaih, Hanalei Steinhart, James Stewart, Christopher Tritt, Justin Velarde

URBAN 407: Max Brooke, Peter Kelleher, Max Merchand, Aidan McQuade, Kiran Verma

LIVABLE CITY YEAR

EDC PACIFIC COUNTY

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Abstract

The 2025 Marine Services studio produced a master plan for three adjoining parcels. The client requested that our product promote economic development and determine the feasibility of the proposed educational and residential facilities in South Bend, WA. The coordination between the Pacific County EDC, Port of Willapa Harbor, and the LCY program has led to a feasible master plan with clear next steps. The plan outlines the development potential of the three parcels for a variety of mutually beneficial uses. These include marine education facilities, a boatyard, public recreation area, dormitories, and market rate housing. The master plan covers utility and zoning needs as well as phased implementation steps. While there is much development potential, it is tempered by an uncertain market. Feasibility studies are the first recommended step towards economic development.

Executive Summary

The Bendicksen's Landing Redevelopment Master Plan is a comprehensive revitalization project designed to be phased out in multiple segments across a 30 year period. The main objective is to promote economic development in South Bend, Washington through the redevelopment of an underutilized piece of land, split into 3 parcels. This master plan aims to transform a historically industrial waterfront site into a multi-use campus that includes an educational campus, a functioning boatyard for small vessel use, phased out housing projects, and additional commercial use. Our master plan proposal is driven by the goals of our client, the Port of Willapa Bay and the Pacific County Economic Development Council. Both parties have emphasized the need for economic development. Drawing upon our previous research studying educational opportunities within the marine services industry in comparable jurisdictions, including on-site research and input from the community, we believe an educational campus is a potential source of economic development for South Bend and that there is a need for more economic opportunities within the marine services sector.

Bendicksen's Landing encompasses three primary parcels (A, B, and C), each designed for specific development purposes. Parcel A features adaptive reuse of existing structures to create an educational campus with cooler storage and shared parking. This educational campus will focus on marine services that are relevant to the Pacific County economy, including boat mechanics, shellfish collection, small vessel operations, hydraulic plumbing, and other marine-adjacent tasks. Parcel A will also expand the preexisting but underutilized boatyard to enable access to in-water facilities, including dry storage that will extend into Parcel B. Planted buffers and improved stormwater management will be included within the Master Plan.

Parcel B is designated for dual commercial and industrial uses. We will present two options: a waterfront commercial district including an outlet mall or flex industrial storage, both of which are aligned with site visibility and economic needs of the region.

Parcel C focuses on public recreation and market rate housing. Residential housing will be phased out over a 30 year period, featuring five pod-style rental apartment buildings with shared gardens, natural views, and access to parks and trails. We are suggesting a public park with access to trails, seating areas, and a playground. Two routing options are presented to support connectivity to Parcel B. Sustainable infrastructure will be emphasized, with the potential to use oyster shell materials in construction.

In order to assess the feasibility of this project we have reviewed the environmental and regulatory context of this site and the surrounding area. We have confirmed that the zoning and land use proposed aligns with South Bend's Downtown Commercial zoning. As stated in the title report for this site, one of the most important regulatory requirements is to consider floodplain management and to ensure that potential easements and liens are considered throughout the process.

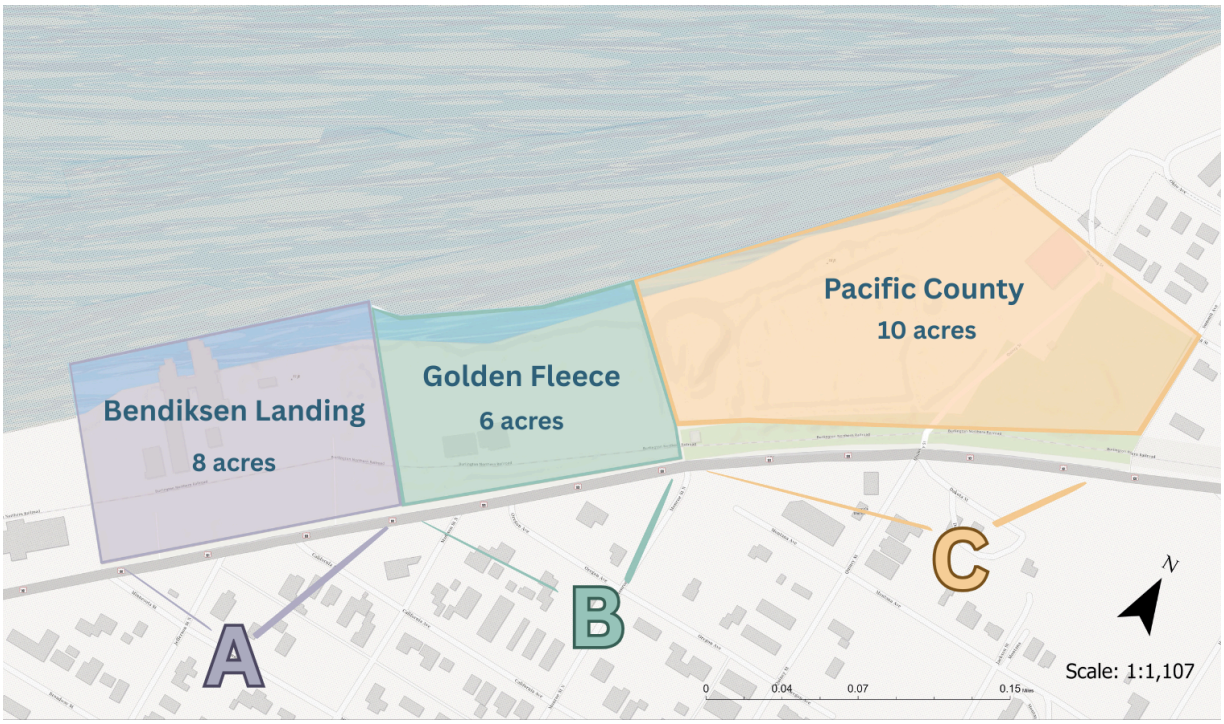


Figure 1: Master Plan Lots Identified By Owners

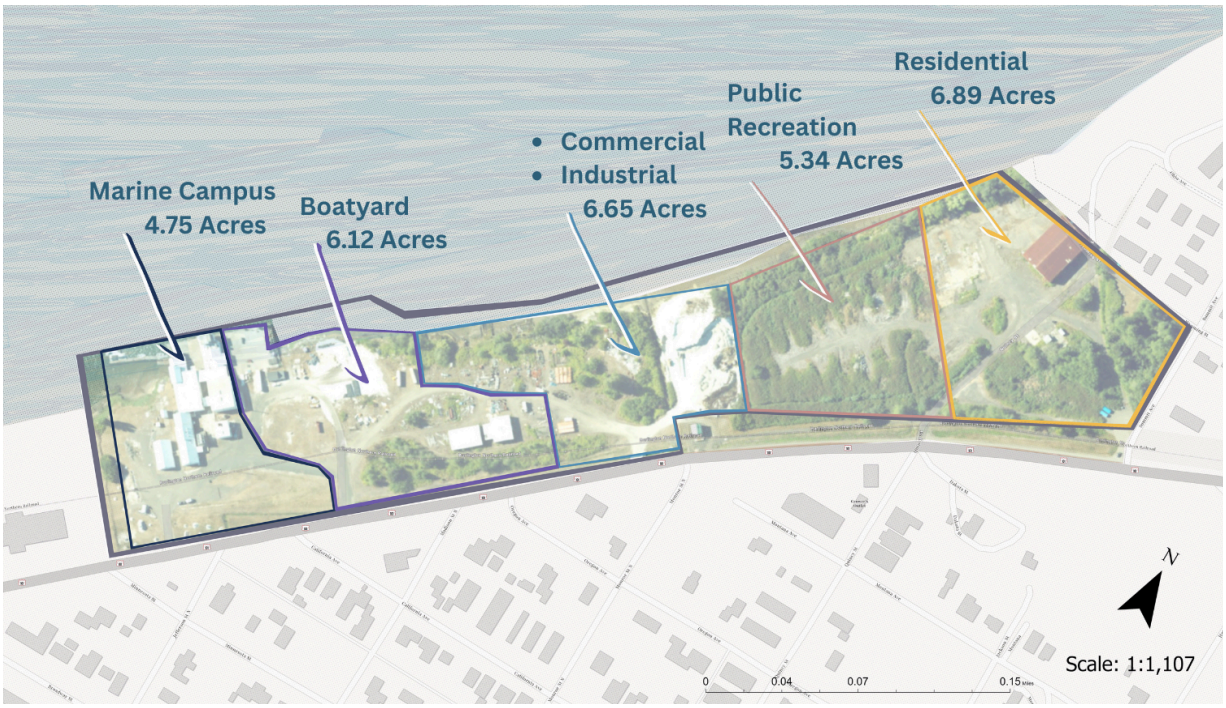


Figure 2: Master Plan Allocated Acres for Usage

Introduction

Scope of Work Overview

The foundation of this project was rooted in promoting economic development in Pacific County through strategic planning and community development. Our team was initially engaged by our client to develop a comprehensive plan that would foster economic revitalization, with a particular emphasis on supporting the county's historically significant maritime industries. The overarching objective was to create a master plan for the development of Bendiksen Landing and its adjacent parcels, as suggested by the Port of Willapa Harbor. This master plan was designed around three core pillars: land use, market demand, and public interest. These elements were synthesized into a holistic vision for both in-water and upland development, aiming to align public needs with economic opportunity.

During the winter quarter, our team conducted in-depth research into the economic landscape of Pacific County to better understand current market demands. Through this process, supplemented by community feedback, it became evident that there is a need for expanded maritime education and workforce training opportunities. We identified education as a key driver for long-term economic development. To inform our strategy, we analyzed successful maritime training programs across the United States, drawing particular inspiration from the MERTS campus operated by Clatsop Community College in Astoria, Oregon. This institution offers a range of vocational programs in marine services and served as a valuable case study. Our proposal centers on the creation of a similar educational hub in Pacific County to support young aspiring maritime professionals, while simultaneously stimulating complementary industries envisioned in the broader master plan.

Historical Context

Industrial uses were identified on Sanborn Fire Maps from 10-1 to 1929. There were 4 mills on the site that produced lumber and shingles as well as planing. The 4 companies were Siler Lumber Planing Mill, Columbia Box & Lumber Saw Mill, Cole Shingle Single Mill, and Kleeb Lumber Saw Mill. These factories all relied on steam power with fuel from sawdust, shavings, and miscellaneous refuse. They disposed of their waste in outdoor refuse fires. Due to these uses, it can be assumed that toxic materials were present at the site, including creosote for wood preservatives. Therefore, future research into soil contaminants are highly recommended.

Legal Description of Site

Parcel 1 and Parcel 2 are located in the City of South Bend, Pacific County, Washington, and comprise portions of Lot B of Tract 1 as delineated on "Plate 17" of the South Bend Tide Flats. This historic plat was originally filed with the Washington State Land Commissioners on March 12, 1895. The parcels also include a section identified as “Railroad Terminal Grounds” on the recorded plat of the South Bend Land Company’s First Addition to South Bend. These parcels are roughly bounded by the meander line of the Willapa River and extend northeast from Water Street, referencing specific bearings and distances. Parcel 1 comprises the southwesterly 600 feet of the northeasterly 800 feet of a described tract, while Parcel 2 consists of the northeasterly 200 feet of that same tract. These parcels are subject to a complex set of easements, rights-of-way, and potential environmental factors. Several easements exist in favor of the Public Utility District No. 2 of Pacific County and the City of South Bend, covering electric power lines, sewer infrastructure, and general utility access. There is also an easement granted to the Coast Seafood Company for ingress and egress purposes. Additionally, a railroad easement affects Parcel 1, as well as historical rights and limitations related to the proximity to the Willapa River, including concerns about shifting river courses, changes to the shoreline, and the regulatory rights of the United States government over navigation and commerce. There are outstanding general property taxes on several tax parcels for the year 2025, with amounts due ranging from less than $10 to over $3,000. Real estate excise tax would also apply upon any sale of the property, with varying rates depending on the transaction amount. Furthermore, if a mobile or manufactured home is located on Parcel 1, it must be formally converted to real property per Washington State law in order to be insured and included in any legal conveyance.

Overall, the parcels combine historical land designations, tidal influences, and numerous encumbrances that would require careful review by legal and planning professionals prior to development, sale, or transfer. The property is subject to several financial and legal considerations that may affect its use or transfer. A Real Estate Excise Tax (REET) lien may be imposed if REET is not paid upon the sale of the property, creating a potential encumbrance. There are multiple recorded and possibly unrecorded easements and encroachments on the site, including rights of way, drainage infrastructure, and access routes. Notably, a drainage line runs beneath the property and discharges into the Willapa River, which also places the land under the jurisdiction of public and riparian rights, particularly where it adjoins or overlaps with waterways. These rights include navigation, fishing, and public access. Additionally, general title exceptions note that certain risks, such as boundary or possession disputes, unrecorded easements or rights of way, and liens for labor, utilities, or unpaid taxes not reflected in public records may not be disclosed through the title process and could impact ownership or development.

Client Priorities

In collaboration with the client, we identified several priorities to ensure the project reflects the needs and interests of the community. In addition to the maritime education center, our plan incorporates residential development, including both dormitory-style student housing and market-rate homes. Another core element, strongly emphasized by the client, is the revitalization of the boatyard. Furthermore, our team explored potential commercial uses tailored to the county's demographic and economic profile, as well as opportunities to enhance public recreation and access to the waterfront. These initial concepts were informed by client input and community engagement, with further refinement based on land use feasibility.

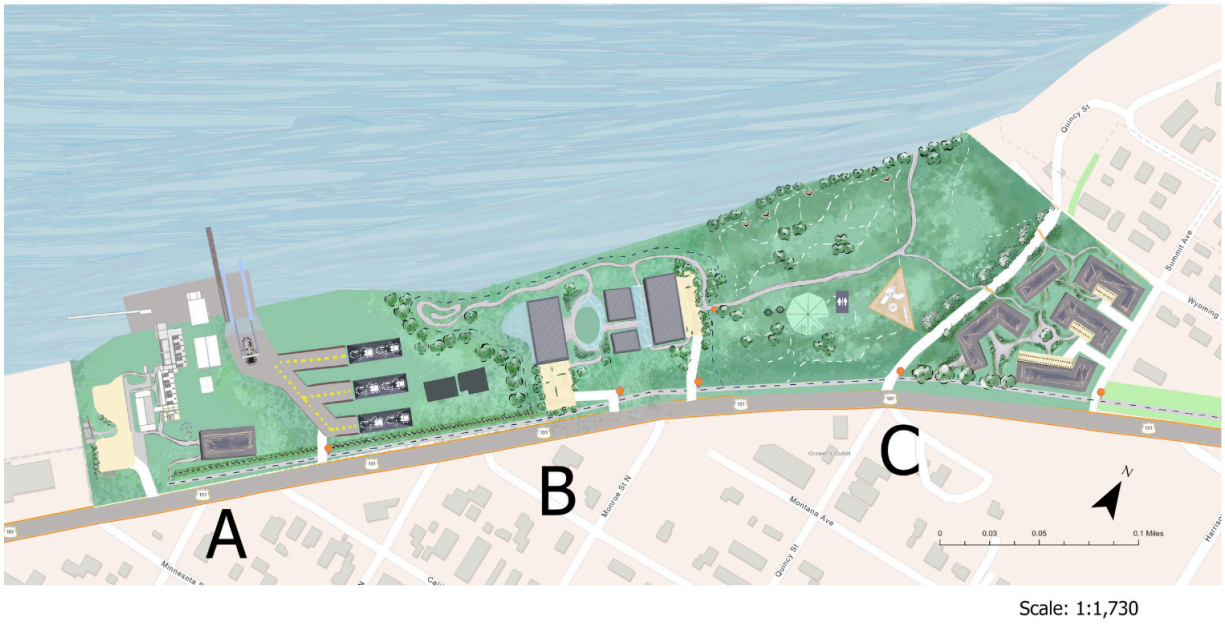


Figure 3: Overview of the proposed Master plan for further revision and in depth analysis.

Zoning overview

We examined the regulatory framework governing the proposed Bendiksen's Landing redevelopment project in South Bend, Washington. The site operates within Washington State's Growth Management Act framework and is currently zoned as Downtown Commercial, which provides favorable conditions for the proposed mixed-use development including educational facilities, commercial uses, and residential components. However, environmental constraints, particularly flood hazard areas, present significant regulatory considerations that must be carefully addressed throughout the development process.

Washington State operates under a unique growth management system established by the Growth Management Act (GMA) of 1990, which requires fast-growing cities and counties to develop comprehensive plans to manage population growth. The GMA establishes a series of 15 goals that guide comprehensive planning and development regulations, focusing on coordinated growth management rather than centralized state-level planning.

The GMA mandates that counties designate urban growth areas (UGAs) and requires all urban growth to occur within these designated boundaries. Cities cannot annex land or extend urban services beyond the urban growth area, creating a clear framework for concentrated development. This structure supports the Bendiksen's Landing project's objectives of promoting economic development within South Bend's established urban core.

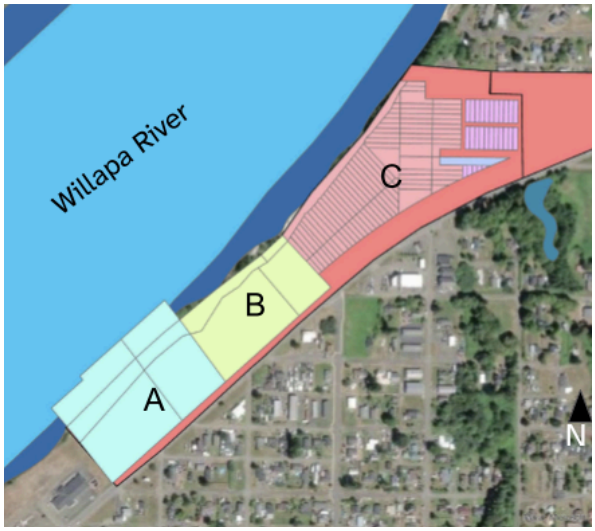


Figure 4: A, B, C Parcels along Willapa River

County and City Roles

Under Washington's zoning structure, counties and cities have distinct but complementary roles in land use regulation. The Washington State Department of Commerce serves as the primary state-level contact for GMA-related issues, providing technical assistance to help local governments comply with planning requirements. Counties are responsible for planning in unincorporated areas and establishing urban growth boundaries, while cities manage zoning and development regulations within their incorporated limits.

Pacific County has developed comprehensive planning documents that address critical areas and resource lands, including frequently flooded areas. The county's role includes oversight

of environmental constraints and coordination with municipal planning efforts to ensure regional consistency in growth management approaches.

South Bend Zoning Structure

The City of South Bend operates under a streamlined zoning code that establishes three primary zoning districts: Neighborhood district (N), Downtown and Commercial District (DC), and Environmental Protection District (EP) (See Municipal Zoning Map). This simplified structure reflects the community's small-town character while providing adequate regulatory framework for diverse land uses. The zoning code is enacted under authority granted by the Washington State Constitution, the Optional Municipal Code, the Growth Management Act, and Local Project Review statutes.

The city's zoning approach emphasizes compatibility between land uses and implementation of comprehensive plan policies while protecting private property rights. All development must comply with zoning provisions and obtain required permits before commencement, with specific attention to lot line creation and conformance with dimensional standards. The regulatory framework provides clear guidance for the proposed Bendiksen's Landing development while maintaining flexibility for innovative mixed-use projects.

Downtown Commercial District Characteristics

The Downtown Commercial (DC) district represents the zoning classification for the Bendiksen's Landing site, as it accommodates the diverse mix of proposed uses including educational facilities, commercial activities, and residential development. This district is specifically designed to support the community's commercial core and allows for higher intensity development compared to residential neighborhoods.

The DC district permits maximum building heights of 35 feet and allows lot coverage up to 65% for most uses, providing significant development capacity for the proposed educational campus and mixed-use components. Minimum setback requirements are reduced compared to residential districts, with front yards requiring only 20 feet and side yards requiring 15 feet, enabling efficient site utilization. The district's density provisions allow up to 18 dwelling units per acre for multiple-family and townhouse developments, supporting the proposed dormitory and residential housing components.

Parking requirements and circulation standards within the DC district emphasize accessibility and efficient traffic flow, which aligns with the project's goals of creating a pedestrian-friendly educational campus integrated with commercial and residential uses. The zoning framework also accommodates the proposed boatyard operations as they represent continuation of historic maritime industrial activities consistent with the district's mixed-use character.

Environmental Constraints by Use Type

Greenfield Recreation Development

The proposed public recreation areas on Parcel C face minimal environmental constraints due to their low-impact nature and integration with existing natural conditions. The site's existing tree cover and natural topography provide opportunities for trail development and passive recreation with minimal environmental disruption. Stormwater management requirements may apply to any grading or paving activities, necessitating compliance with Pacific County's critical areas regulations.

Wetland buffers and critical areas protections may limit, but do not heavily constrain, the extent of developed recreation facilities, requiring careful site design to avoid sensitive environmental features. The proposed playground and shelter facilities must demonstrate compliance with setback requirements from any identified wetlands or stream corridors. Wildlife habitat considerations may also influence recreation facility placement and design to minimize impacts on local ecosystems.

Light Industrial and Boatyard Operations

The proposed boatyard expansion represents the most environmentally regulated component of the development due to its proximity to water resources and potential for pollutant discharge. Washington State Department of Ecology regulates boatyards through National Pollutant Discharge Elimination System (NPDES) permits, which apply when facilities discharge stormwater to waters of the state or generate pressure-washing wastewater.

The boatyard must comply with specific environmental requirements including containment of wash water, proper disposal of boat maintenance materials, and prevention of fuel and oil spills. Covered repair buildings may reduce permitting requirements by limiting outdoor exposure of maintenance activities, though haul-out operations will still require environmental compliance measures. The facility's design must incorporate best management practices for stormwater treatment and hazardous material storage.

Commercial Development

Commercial development on Parcel B faces potential environmental constraints related to stormwater management and potential contamination from historic industrial uses. The site's history includes multiple lumber mills and industrial operations from the early 1900s, raising concerns about soil contamination from creosote and other industrial materials. Environmental site assessment and potential remediation may be required before commercial development can proceed.

Stormwater management requirements apply to all commercial development, with particular attention to impervious surface coverage and runoff quality. The proposed outlet mall or flex industrial storage options must demonstrate adequate stormwater treatment and

compliance with Pacific County's surface water protection standards. Parking areas and loading facilities require special consideration for potential pollutant source control.

Educational Facility Development

The proposed marine education campus on Parcel A benefits from adaptive reuse of existing structures, which may reduce environmental impacts compared to new construction. However, the educational facility must comply with modern environmental standards including stormwater management, energy efficiency, and accessibility requirements. The integration of dormitory facilities adds residential development standards to the environmental compliance requirements.

Soil contamination assessment is particularly important for educational facilities due to safety concerns for students and faculty. The site's industrial history necessitates thorough environmental testing before classroom and laboratory spaces can be occupied. Any ground disturbance for utility connections or site improvements must consider potential contaminated soil management and disposal requirements.

Housing Development

The proposed residential development on Parcel C faces environmental constraints related to stormwater management, critical areas protection, and flood hazard considerations. The phased development approach over 30 years allows for adaptive management of environmental requirements as regulations evolve.

The garden plots and shared outdoor spaces require soil quality assessment and potential amendment to support safe food production. Parking areas using oyster shell materials present innovative approaches to sustainable development while requiring demonstration of environmental compatibility. Residential development must also address wastewater treatment capacity and impacts on existing utility infrastructure.

Future Considerations

Flood Hazard Management

Flood hazard considerations represent the most significant environmental constraint for the Bendiksen's Landing development, as noted in the title report requirements for floodplain management compliance. The site's proximity to the Willapa River places it within areas subject to periodic flooding, requiring careful attention to FEMA flood mapping and local flood ordinances.

Pacific County maintains detailed frequently flooded area maps for various regions, though specific flood data for the South Bend area requires consultation with county flood control officials. Development within flood hazard areas must comply with National Flood Insurance Program requirements, including elevation standards for new construction and

substantial improvement projects. The proposed uses must demonstrate compatibility with flood hazard conditions through appropriate design and construction techniques.

Future sea level rise and climate change impacts may increase flood risks over the project's 30-year development timeline, necessitating adaptive management strategies and potential design modifications. The phased development approach allows for incorporation of updated flood risk data and regulatory changes as they become available.

Comprehensive Planning Updates

South Bend's comprehensive plan update process will likely address the Bendiksen's Landing area as a significant redevelopment opportunity requiring coordination between land use planning, infrastructure capacity, and economic development objectives. Future zoning modifications may be necessary to accommodate the specific mix of uses proposed while maintaining compatibility with surrounding neighborhoods.

The Growth Management Act requires periodic comprehensive plan updates, providing opportunities to refine zoning designations and development standards based on project experience and changing community needs. Integration of the educational campus and mixed-use development may serve as a model for other waterfront redevelopment initiatives in Pacific County.

Integration with Utility Systems

The zoning analysis connects directly to utility infrastructure capacity and requirements, as development intensity permitted under Downtown Commercial zoning must align with available water, sewer, and electrical service capacity. Pacific County PUD No. 2 provides electrical service to the South Bend area through the Henkle Street Substation, with adequate capacity projected for development needs through 2025.

Water and sewer infrastructure requirements vary by use type, with educational facilities and residential development requiring significant capacity compared to commercial or recreational uses1. The phased development approach allows utility infrastructure to be upgraded incrementally to meet growing demand while maintaining service reliability for existing customers.

Environmental constraints related to utility extensions, particularly sewer connections that may impact wetlands or stream corridors, must be addressed through the development review process. Integration of sustainable infrastructure approaches, including stormwater management and energy efficiency measures, can reduce environmental impacts while meeting regulatory requirements for each proposed use type.

Utilities Overview

Summary

The following analysis evaluates existing utility infrastructure and estimates future utility demand based on proposed uses for Parcels A, B, and C. As our historical context section indicates and local utility data shows, water and sewer infrastructure are already present within or adjacent to these parcels. Specifically, a sewer main runs along Robert Bush Drive, providing convenient access for future developments across all three parcels. Water mains are confirmed to run directly beneath each parcel, supporting straightforward connection for new uses.

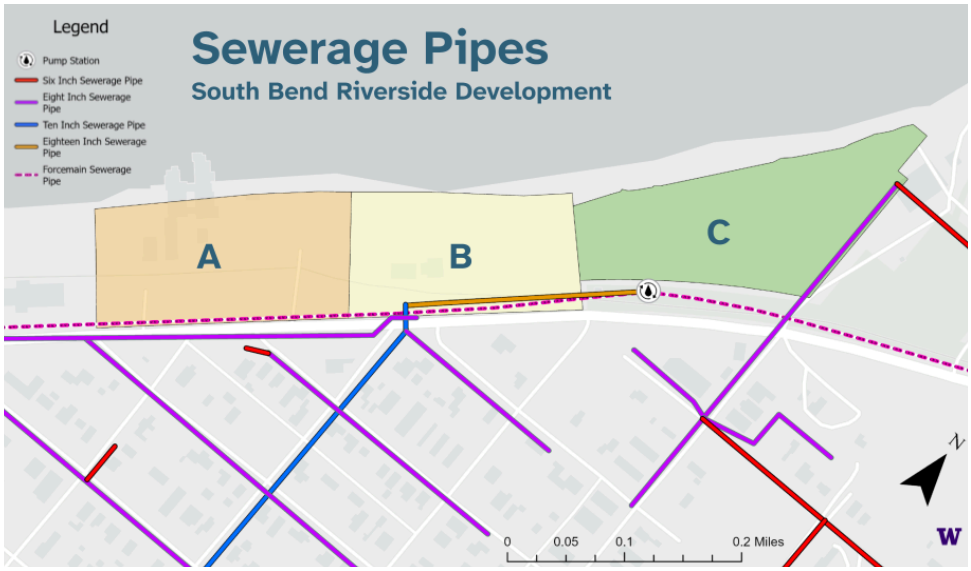


Figure 5: Sewerage Pipes

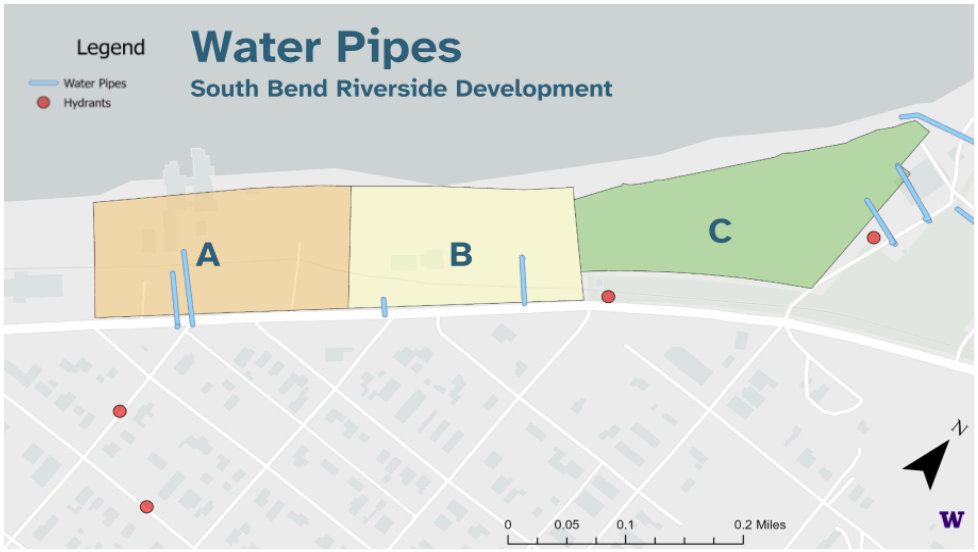


Figure 6: Water Pipes

There is no natural gas service available in the region. As a result, all electricity demand, like space and water heating, is modeled under the assumption that electricity will serve as the sole source of power.

Utility demand estimates for electricity, water, and sewerage were calculated for each parcel based on their proposed land uses. Parcel A includes an educational campus, a boatyard, and dormitories. Parcel B's demand is determined under two uses, commercial and industrial. Estimated water and sewer demand is significantly lower for industrial use compared to commercial, based on the assumption that industrial activities will center on warehouse operations with minimal water or sewer service needs. Parcel C is calculated for residential uses.

The table below summarizes the projected annual utility demands by parcel.

Estimated Electricity Demand	
Parcels	**Kilowatt-hour (kWh) per year**
A	1,373,390
B_1	511,650
B_2	580,000
C	866,910
Estimated Water Demand	
Parcels	**Gallons (g) per year**
A	1,532,392
B_1	584,000
B_2	21,900
C	2,277,746
Estimated Sewerage Demand	
Parcels	**Gallons (g) per year**
A	1,379,153
B_1	525,600
B_2	19,710
C	2,049,971

Figure 7: Parcel Specific Utility Demand
B1: Estimated demand if parcel is used for commercial use
B2: Estimated demand if parcel is used for industrial use

Methodologies for Calculating Demand

Parcel A - Boatyard, Educational Campus, Dorms

Boatyard Demand Methodology

For the proposed boatyard facility on Parcel A, utility demand estimates were developed based on assumed staffing levels and average usage benchmarks. We assumed the boatyard would employ approximately 10 workers during regular operations.

Water demand was estimated at 12 gallons per worker daily, based on data from the U.S. Department of Energy's "Estimating Methods for Determining End-Use Water Consumption." This estimate covers typical indoor uses like restrooms and handwashing. Annual demand was projected by multiplying the daily per-worker rate by the number of workers and operational days.

Sewerage demand was calculated by assuming 90% of consumed water returns as wastewater, a standard conversion from CDM Smith's methodology. This reflects dry weather and indoor water use.

Electricity demand was estimated using energy intensity per square foot. The U.S. Energy Information Administration's Manufacturing Energy Consumption Survey indicates that m manufacturing buildings focused on "transportation equipment" consume about 43.2 kilowatt-hours (kWh) per square foot annually. While not specific to maritime services, it serves as a reasonable approximation in the absence of data. We assumed each worker occupies about 720.7 square feet, based on transportation industry averages. With 10 workers, the total area is 7,207 square feet. This was multiplied by the energy intensity to estimate total annual electricity consumption. Although this method may not fully reflect the unique aspects of a maritime-focused boatyard, it provides a reasonable estimation due to limited data.

Estimated Electricity Demand
Kilowatt-hour (kWh) per year
311,342
Estimated Water Demand
Gallons (g) per year
43,800
Estimated Sewerage Demand
Gallons (g) per year
39,420

Figure 8: Boatyard Estimated Utility Demand

Educational Campus Demand Methodology

The utility demand estimates for the proposed educational campus on Parcel A are based on estimated staff and student count on similar maritime training programs in the Pacific Northwest. Our initial conditions report identified an average cohort size of 28 students for regional maritime service programs. With a 14:1 student-to-faculty ratio at Grays Harbor College, we estimate two faculty members will support the program. Using Grays Harbor College's faculty-to-support staff ratio of 1.4:1 from the 2022 IPEDS report, we estimate a total of 33 regular users of the facility, including students, faculty, and support staff.

Water demand was estimated at 75 gallons per person per day, according to the Water System Design Manual by the Washington State Department of Health. This rate covers typical uses such as restrooms and handwashing. Total annual water consumption is calculated by multiplying daily usage by the number of users and operational days.

Sewerage demand was calculated by assuming 90% of consumed water returns as wastewater, a standard conversion from CDM Smith's methodology. This reflects dry weather and indoor water use.

Electricity demand estimates were based on energy use benchmarks. The U.S. Energy Information Administration's Commercial Energy Consumption Survey states that academic buildings consume 12.6 kWh per square foot annually. We estimated the total floor area for the educational campus using an average allocation of 13,031 square feet per employee in academia. For five non-student campus users (faculty and staff), this yields an estimated facility size of 65,155 square feet. Multiplying this floor area by energy use intensity gives the annual electricity demand estimate.

Estimated Electricity Demand
Kilowatt-hour (kWh) per year
820,953
Estimated Water Demand
Gallons (g) per year
903,375
Estimated Sewerage Demand
Gallons (g) per year
813,038

Figure 9: Educational Campus Estimated Utility Demand

Dorms Demand Methodology

The proposed development for Parcel A includes a dormitory section with 40 single-occupancy units. Each room is designed for one resident, leading to an overall estimated occupancy of 40 students. The layout features shared kitchen and bathroom facilities, while each dorm room will have a private sink.

Water demand estimates were based on expected consumption of activities, including bathroom and kitchen sinks, showerheads, toilets, and washing machines. Dishwashers were excluded. We assumed all fixtures would be high-efficiency. For plumbing, guidance from Mackey Mitchell Architects recommends one fixture per six residents for shared facilities like showers and toilets. Individual sinks in each unit were part of the baseline consumption. Water consumption rates for each fixture type were sourced from the City of Portland's Water Efficiency Program and applied to the resident total for daily and annual usage estimates.

Sewerage demand was estimated under the assumption previously mentioned that 90% of indoor water use results in wastewater.

Electricity demand was estimated per unit using regional data from the U.S. Energy Information Administration's Residential Energy Consumption Survey. Pacific West data was selected to reflect climate-specific energy demand patterns. Appliance categories in the estimate include space and water heating, ceiling fans, lighting, refrigeration, cooking appliances, microwaves, televisions, and laundry equipment. Air conditioning was excluded, reflecting typical dormitory design in the region. The result is a combined daily and yearly energy demand figure from residential energy usage per unit, adjusted for the total number of dorm rooms.

Estimated Electricity Demand
Kilowatt-hour (kWh) per year
241,095
Estimated Water Demand
Gallons (g) per year
585,217
Estimated Sewerage Demand
Gallons (g) per year
526,695

Figure 10: Dorms Estimated Utility Demand

Parcel B - Commercial/Industrial

Parcel B has been evaluated under two possible scenarios, depending on the client's preferred direction: commercial use or industrial use.

Commercial Use Demand Methodology

In the commercial development scenario for Parcel B, we estimated a total building footprint of 37,900 square feet, spread over four individual structures. Each building will house a separate retail tenant, leading to four commercial storefronts.

Water demand was estimated based on typical retail needs, assuming each store has one restroom per small retail standards. Water demand per restroom comes from the Water System Design Manual by the Washington State Department of Health, capturing daily usage for handwashing and flushing, the main water uses in small retail. Total consumption was calculated by multiplying per-store usage by the number of stores and operational days.

Sewerage demand was estimated under the assumption previously mentioned that 90% of indoor water use results in wastewater.

Electricity demand estimates used a benchmark of 13.5 kWh per square foot annually for retail buildings, per the U.S. Energy Information Administration's Commercial Energy Consumption Survey. This figure was applied to 37,900 square feet to estimate annual electrical demand, capturing expected retail loads like lighting, HVAC, refrigeration, and point-of-sale systems.

Estimated Electricity Demand
Kilowatt-hour (kWh) per year
511,650
Estimated Water Demand
Gallons (g) per year
584,000
Estimated Sewerage Demand
Gallons (g) per year
525,600

Figure 11: Commercial Use Estimated Utility Demand

Industrial Use Demand Methodology

A warehouse would occupy about 100,000 square feet. Employment assumptions are based on national averages from the U.S. Census and the U.S. Energy Information Administration's Manufacturing Energy Consumption Survey, indicating one worker per 24,690 square feet. Thus, a 100,000-square-foot warehouse would support about 5 employees.

Water demand was estimated at 12 gallons per worker per day, per U.S. Department of Energy's "Estimating Methods for Determining End-Use Water Consumption." This estimate assumes minimal additional water use typical in light industrial and warehouse settings. Total annual water consumption was calculated by multiplying per-capita usage by the number of workers and operational days.

Sewerage demand was estimated under the assumption previously mentioned that 90% of indoor water use results in wastewater.

Electricity demand was estimated at 5.8 kWh per square foot annually based on the U.S. Energy Information Administration's Manufacturing Energy Consumption Survey, reflecting typical levels for low-intensity warehouses. The total floor area was multiplied by this rate to project annual electricity demand.

Estimated Electricity Demand
Kilowatt-hour (kWh) per year
580,000
Estimated Water Demand
Gallons (g) per year
21,900
Estimated Sewerage Demand
Gallons (g) per year
19,710

Figure 12: Industrial Use Estimated Utility Demand

Parcel C - Housing

Housing Demand Methodology

To estimate utility demand for the proposed housing development on Parcel C, we established planning assumptions regarding occupancy and unit mix. The development will include 100 rental units, approximately divided into 33 studio units, 33 one-bedroom units, and 34 two-bedroom units. We applied standard planning ratios for occupancy: 1 resident per studio, 1.5 for one-bedroom, and 2.5 for two-bedroom units. These ratios balance efficient space use and population density, based on housing and utility planning norms. This unit mix would support an estimated total of 168 residents.

Water demand was estimated per resident by evaluating indoor water appliance usage, including sinks, showers, toilets, dishwashers, and washing machines. We used daily per capita consumption values from the City of Portland's Water Efficiency Program. Assuming modern construction and appliances, we applied high-efficiency water use rates. Total daily water use was calculated by summing appliance-specific demand and multiplying by the estimated resident population, providing a reasonable baseline for average daily water use across the development.

Sewerage demand were estimated based on water usage. We assumed that 90% of indoor water use returns to the sewer as wastewater, a standard assumption for residential systems in dry weather. This factor aligns with engineering practices and reflects typical indoor-outdoor usage ratios, where nearly all water is sourced internally with minimal losses.

Electricity demand was assessed at the household level and adjusted based on regional consumption patterns. Appliance categories included typical residential uses: space and water heating (without natural gas), lighting, refrigeration, cooking, dishwashing, laundry, and entertainment devices. Estimates for each category came from the U.S. Energy Information Administration's Residential Energy Consumption Survey, using figures specific to the Pacific West region for alignment with local climate and energy patterns.

Estimated Electricity Demand
Kilowatt-hour (kWh) per year
866,910
Estimated Water Demand
Gallons (g) per year
2,277,746
Estimated Sewerage Demand
Gallons (g) per year
2,049,971

Figure 13: Estimated Electricity Demand

Parcel A

Intro & Site Design

Parcel A is the original Bendiksen landing site that was originally worked on by studio 507 in 2024. It is being revised to now look at the feasibility of the creation of a Marine educational center occupying the empty buildings, along with a small section being used for cooler space. The currently occupied building by a crafts owner will remain as it is, however the parking lot will be split by planted areas to delineate the rest of the parking for students and staff of the Marine Educational Center. The site has been modified to also include the integration of a larger boat ramp than was originally proposed in the 2024 project. This includes the movement of Taylor shellfish companies building to parcel B.

The boatyard's in water access will only be in Parcel A, however storage buildings for the boatyard will extend into Parcel B. This site will now include Taylor shellfish's small collection building and area for the oyster shells. Along with road ways to the storage areas and machinery buildings, as well as off the site.

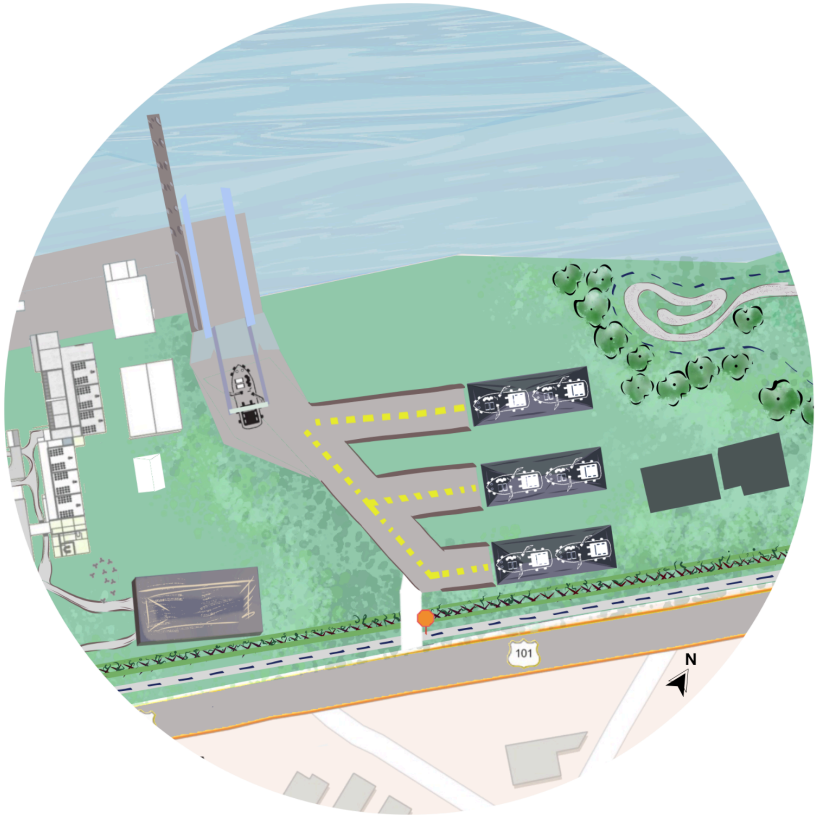


Figure 14: Photo includes covered shelter maintenance areas, holding up to two boats.

Roads leading from the 101 to the boat lyft to the maintenance areas. Current two storage buildings left on site currently, could be removed for more flexibility.

Boatyard

Port of Willapa Harbor Boatyard Overview

The Port of Willapa Harbor seeks to develop a new boatyard to serve the needs of the local commercial fleet, particularly vessels requiring extensive repairs beyond standard annual maintenance. There are over 40 boats within Willapa Bay's fleet, many of which need reliable access to long-term haul-out and repair facilities. The proposed boatyard will be capable of hauling out and accommodating even the bay's largest vessels — with haul-out capacity of up to 150 tons — and will offer storage for up to six boats at a time for extended periods.

This new facility is intended to complement the existing South Bend Boat Repair, which supports short-term work such as pressure-washing, minor maintenance, and painting. The South Bend site operates a two-way winch-pulled railway and is designed for maintenance jobs lasting only a few days.

The recommended initial design for the boatyard includes covered buildings for boat repair. This is particularly beneficial during months when weather conditions are not suitable for outdoor work. Having entirely indoor repair facilities (not including haul out) may make permitting easier and cheaper as well. While working on multiple boats within a single building is not always ideal, the design approach can be refined as the project progresses. For example, incorporating roller doors to create separable spaces within each building could improve functionality. Fortunately, the large size of the site allows for flexibility in design options, such as providing access to both sides of the repair buildings or utilizing paved or concrete pads for outdoor storage in addition to the indoor facilities if the Port desires.

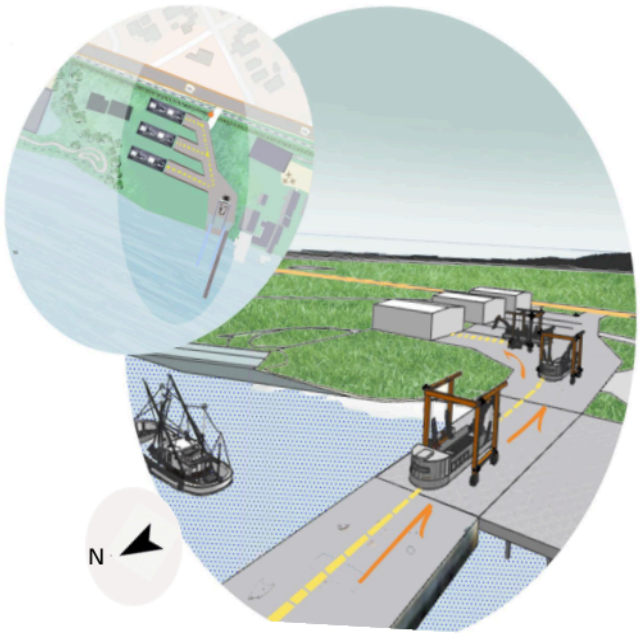


Figure 15: Haulout lift for large vessels onto the shoreline. Taylor's shellfish is not viewable as it would need removal for the size of this haul out facility.

Travel Lift Equipment

A new Travel Lift capable of hauling out the largest of the fleet's commercial vessels with a 150-ton capacity is displayed in Figure 16. Preliminary pricing for this mobile gantry crane has been provided by Kendrick Equipment, totaling approximately $1,450,000. The cost includes delivery, assembly, testing, and operator and mechanic training/certification. This does not include other substantial costs related to the project such as the repair/storage buildings, work needed to the pier, or other areas of the site.

150 TG
MOBILE BOAT HOIST
150 Metric Ton Capacity - Tier 4

MARINE TRAVELIFT

PRELIMINARY SPECIFICATIONS

	US Measure	Metric
General Information		
Rated lifting capacity	330,000 lbs	150,000 kg
Shipping weight	105,000 lbs	47,630 kg
*Machine shipped disassembled.		
Inside clear height	30'0"	9.14 m
Inside clear width	28'0"	8.53 m
Engine		
Engine make/model	John Deere 4.5L – Tier 4	
Horsepower	139 HP @ 2200 RPM / 104 kW	
Cooling	Liquid	
Service Capacities		
Oil tank capacity	57 Gal	216 L
Fuel tank capacity	50 Gal	189 L
Hoist System		
Hoist	(4) Independent Hydraulic Controls	
Hoisting speed (standard)	5 ft/min	1.52 m/min
Hoisting speed (low/high) (optional)	5/11 ft/min	1.52/3.35 m/min
Wire rope		
Number of parts of lines	32	
Wire rope	3/4" (19 mm), Compacted 8 x 26, Galvanized IWRC	
Depth below grade (standard)	5'0"	1.52 m
Depth below grade (optional)	20'0"	6.10 m
Slings		
Maximum sling spacing	31'6"	9.60 m
Powered sling adjustment	Two	
Slings	(8) Nylon 2-ply, Quick disconnect pin	
Protection	Keel pads and Chine pads	
Sling dimension	12" x 44'	0.30 m x 13.41 m
Drive System		
Drive type	Hydrostatic, closed loop	
Travel speed (standard)	70 ft/min	21.34 m/min
Travel speed (low/high) (optional)	70/140 ft/min	21.34/42.67 m/min
Gradeability		
Gradeability (standard)	5%	
Increased Gradeability (optional)	8.5%	
*Increased gradeability reduces travel speeds.		
**Gradeability shown for concrete or asphalt surfaces. For other surfaces, deduct as follows: Hard packed ground or gravel...2%; Loose gravel...2 to 7%; Mud...2 to 13%; Soft sand...4 to 13%.		
Tires		
Tire type	(8) 18.00 - 25	
Tire pressure	145 PSI	10.0 Bars
Steering type	2-WS at 90°	
2-WS inside turning radius	0'0"	0.00 m
2-WS outside turning radius	49'10"	15.19 m
Exterior Paint	**PPG Protective Coating**	
Color	Blue & Grey	
Primer	Zinc Rich Epoxy	
Paint	Engineered Siloxane	

(Machine may be shown with options)

STANDARD EQUIPMENT

- Pivot Trunnion
- Remote Diagnostics
- Intelligent Electronic Load Indicator
- Hydraulic Oil Temperature Monitor
- Hydraulic Pump Pressure Monitor
- Cab Control Direct to Valve
- Industrial Tires
- Formed Steel Structure
- Slew Bearing for Steer Wheels
- Bolting Flange in Top Beam
- Stainless Steel Tubing
- O-Ring Face Seal Hydraulic Fittings
- Cordura Hose Covers
- Parallel Groove Drums
- Chine & Keel Pads
- Greaseless Hydraulic Sling Adjustment
- Hoist 2-Block Systems
- Mechanically Synchronized Hoists

OPTIONS

- Customizable in Height and Width
- Wireless Remote Control with LCD Display
- All Wheel Electronic Steering
- 2 Speed Drive
- Increased Gradeability
- AVT Fuel Saver (Wireless Remote Control Required)
- Customized Spreader Bars Extension
- Enclosed Cab with Heater, Defroster Fan, & Wiper
- LED Work & Drive Lights
- Sound Suppression Kits
- 2 Speed Hoist
- Single tire per corner
- Tire Pressure Monitor
- Change in Block Drop (Below Pier Level)
- Cold Start Kit
- CE Compliance

Figure 16: Marine Travelift Boat Hoist -150TG T4 Pamphlet. Provided by Kendrick Equipment

Facility Use & Repair Model

The proposed boatyard will serve to handle longer term and less frequent work such as propulsion replacement/repairs, engine work, electrical rewiring, navigational equipment installations/repairs, and large painting projects. A"self-work" repair model is recommended. The boatyard would operate the hauling out and provide the facilities where the repairs can be conducted. The boat owners could then do the repairs themselves or turn to the community as a source for contractors. This would be an effective approach as the Port would not need to have specialist contractors on staff during off-seasons or when work may be infrequent. Additionally the private sector would likely be more efficient at servicing the owner's needs. This has the potential to add even more economic development to the community as this boatyard element would add incentive to bring further business to the area.

Educational Integration

Pairing the boatyard with an adjacent educational facility could create valuable training opportunities. Students would benefit from hands-on experience with real repair projects, while local tradespeople hired for work in the boatyard could contribute as guest instructors or mentors. This partnership would support both workforce development and long-term economic growth.

Recommended Pricing Model

A flexible pricing model for the boat storage is advised. This is taking into consideration that the nearby Port of Peninsula, which is located on Willapa Bay has a daily pricing model. The Port of Ilwaco receives Willapa Bay boats over Port of Peninsula occasionally due to price savings that are possible because they have weekly and monthly rates. A similar pricing approach is recommended for the proposed boatyard. After a month, cost can go-up to a daily rate to encourage efficient turnover of the space. According to the Port of Ilwaco, the Port of Peninsula has daily rates for their pads, so the more dynamic model of Ilwaco is sometimes preferred for the boat owners.

Permitting

Boatyards in Washington State are regulated by the Department of Ecology. The applicable permit is a National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge permit. It ensures that the disposal of wastewater and stormwater from boatyards complies with the federal Clean Water Act and state water pollution control laws. Details and application information for the permitting process can be found at: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Boatyard-general-permit#Apply.

A boatyard general permit from the Department of Ecology is required if the boatyard (a) discharges stormwater runoff to waters of the state, either directly or through a storm sewer system, or (b) generates wastewater from pressure-washing activities (Department of Ecology State of Washington, 2022). This boatyard would likely do both.

Typically the cost of the permit is based on gross revenue of the business, although there is an exception. According to the NPDES' Boatyard General Permit Fact Sheet, “if all activities are performed indoors, under cover, with no outside activities or exposure except haul-out, coverage under this permit may not be required.” (Department of Ecology State of Washington, 2022) In this case, the General Boatyard permit would still be obtained, just with a Conditional No Exposure Exemption, that would make the permit zero cost. As design decisions are finalized as the project progresses, this should be taken into account when determining whether to include outdoor storage pads or to perform all storage and repairs inside covered buildings.

The Department of Ecology’s permit manager for Pacific County is currently Adonia McKinzi. She has been in this role for 17 years and also oversees Clallam, Grays Harbor, Jefferson, Mason, and Thurston counties. Adonia’s contact information:

adonia.mckinzi@ecy.wa.gov
360-480-1434

Nearby Boat Repair Facilities

Port of Peninsula

Located in Ocean Park along the Willapa Bay, the Port of Peninsula has the closest boatyard that the Willapa Bay vessels can access. While this boatyard is nearby it utilizes a trailer system to get the boats out of the water and does not have a mobile gantry crane like the Travel Lift that is being proposed for the South Bend site.

Port of Astoria

Located along the Columbia River, the Port of Astoria’s boatyard currently has the biggest mobile gantry lift in the area. It can handle haul out of vessels up to 88 tons. Currently, the Astoria boatyard services the occasional oyster barge from Willapa Bay or even from Shelton. Like the Port of Ilwaco’s location, it is not recommended for boats from Willapa Bay to travel to Astoria due to the risk associated with entering the Columbia River. This is a voyage that is known to be dangerous and must be done in ideal conditions. Their repairs follow a “self-work” model. The boatyard staff does the hauling out, pressure washing the bottom of the boat, and gives a slip to store the boat. As far as repairs, they turn to the community to do the small business repair jobs. A similar model is recommended for the Port of Willapa Harbor boatyard.

Port of Ilwaco

Although located in Pacific County, the Port of Ilwaco's boatyard is situated outside of Willapa Bay, on the Columbia River side of the county. Ilwaco has haul-out capacity for boats under 75 tons. Due to its location, boats from Willapa Bay must travel out into the Pacific Ocean—an environment they are not designed for—and then enter the Columbia River to reach the boatyard. This route can be dangerous, especially under poor weather conditions.

That said, the Port of Ilwaco still receives boats from Willapa Bay. One cited reason is its lower pricing compared to the Port of Peninsula. This price difference is largely due to differing pricing models: the Port of Peninsula charges daily rates for repair pads, while Ilwaco offers weekly or monthly rates, with a switch to daily rates after the first month.

Like the Port of Astoria, the Port of Ilwaco follows a self-work model, meaning boat owners must either perform repairs themselves or contract them out. Additionally, the Ilwaco boatyard has unpaved repair pads—an approach that should be avoided at the proposed South Bend site as paved pads can help prevent runoff and provide a safer, more stable surface for the repair workers.

South Bend Boat Repair

South Bend Boat Repair shop was purchased by the Port of Willapa Harbor in 2023. While it is not a boatyard, it is a repair shop that utilizes a two way winch-pulled railway for vessels to do maintenance work for no more than a few days. This shop serves Willapa Bay vessels for annual haul-out of minor maintenance, pressure-washing, and painting.

Little Hoquiam Shipyard

Little Hoquiam Shipyard is a privately owned business located off of the North Bay in Hoquiam, Washington just north of Willapa Bay. This shipyard can serve as an option for Willapa Bay vessels to travel to for repairs due to proximity. The Little Hoquiam Shipyard repairs and builds new boats. Repair services include lengthens, sponsons, re-powerings, and re-work/re-paints.

SWOT Analysis of the Boatyard

Strengths

The proposed boatyard's location along the Willapa River offers a significant advantage in serving the local Willapa Bay commercial fleet. Currently, vessels must travel to haul-out yards at the Port of Ilwaco or the Port of Astoria for extended repairs. This journey requires crossing a bar to exit into the Pacific Ocean—a dangerous undertaking, especially for vessels not designed for open-ocean travel, as is the case with many in the fleet. After navigating the coast, boats must then cross the notoriously hazardous Columbia River bar, which presents substantial

risks and logistical challenges. And this does not account for the return voyage. Establishing a boatyard along the Willapa River (adjacent to Willapa Bay), would eliminate these dangers, shorten repair turnaround times, and reduce costs associated with towing and bar pilot services.

The proposed boatyard will complement the Port's existing South Bend Boat Repair facility, which supports only short-term work (e.g., pressure-washing, minor maintenance) via a winch-based railway system. In contrast, the new facility would have full haul-out capabilities through a Travel Lift and could accommodate multiple vessels for extended repair projects.

A self-work model is recommended, minimizing the need for full-time specialized staff. This model keeps labor costs low, which is critical given the seasonal nature of haul-out work. Most activity is expected to occur during favorable weather months. Based on similar boatyards in the region, a staff of 2–5 workers is recommended.

The covered boat repair buildings is a great advantage, especially in an area such as Western Washington where the weather is not ideal for outdoor repair activities for much of the year.

Weaknesses

One of the most significant challenges is the upfront investment. The estimated cost of a new 150-ton Marine Travelift alone is approximately $1,450,000, including delivery, assembly, testing, and operator/mechanical training. However, this does not account for additional infrastructure costs such as pier improvements, storage pads, or support buildings.

Although the model requires limited staff, qualified personnel will still be needed to operate the Travel Lift, manage scheduling, and maintain safety standards. Hiring and training staff could pose logistical challenges.

Oversight of any independent contractors or boat owners who conduct repairs at the do-it-yourself boatyard must still occur. This is to ensure that the work being done is in compliance with state and federal standards. Streamlined processes such as check-ins, licensing requirements, and regular inspections can be enacted to ensure compliance is met.

Opportunities

The boatyard presents a strong opportunity to stimulate local economic activity. Its self-work model allows local contractors and marine technicians to take on more projects, encouraging the growth of small businesses in the repair and service sector. The convenience and cost-savings for Willapa Bay vessels would also support a more efficient and competitive commercial shellfish industry.

With the proposed educational facility located adjacent to the boatyard, there's an excellent opportunity for collaboration. Students could gain hands-on experience in marine repair, creating a direct pipeline for skilled local workers. This partnership would reinforce the Port's role as a hub for both workforce development and industry support.

Another opportunity is for the South Bend boatyard to serve as a haul-out facility for vessels outside of Willapa Bay, such as the Westport fleet, thereby attracting additional business

beyond the local fleet. The Westport fleet would have an incentive to use the South Bend facility due to its closer proximity compared to other comparable boatyards, such as Ilwaco.

The presence of covered repair buildings on site could also be a major draw for vessels from outside the Willapa Bay area—particularly during non-summer months—by offering amenities not available at other facilities.

Threats

Nearby boatyards in Ilwaco, Astoria, and the Port of Peninsula already serve Willapa Bay vessels. These facilities benefit from proximity to specialized repair technicians, particularly for aluminum boats and jet-drive systems common in the fleet. Some vessel warranties require work to be completed by certified technicians, which may currently be concentrated near those established yards.

Attracting and retaining specialized repair workers in South Bend may be difficult without a consistent flow of projects year-round. Without enough demand, it could be challenging to build a stable labor force.

Educational Campus

The Bendiksen's Landing Educational Campus draws inspiration from what we learned about MERTS in Astoria. The Educational Campus and its facilities will mainly be using existing repurposed structures on the site. Of the facilities, the main educational buildings will take up 23,978 square feet. There will be a 1,424 square foot storage facility included near the educational center. In addition, there will be a newly constructed dormitory building that will be 10,671 square feet.

The educational center will consist of an admin area, classrooms, a technology center with a computer lab, staff rooms, bathrooms, and a shower area. Drawing from MERTS, we propose a confined space fire and rescue safety facility that will allow for students to train for emergency response. A large industrial cooler will be located adjacent to the water. A garage is also proposed, which will be used for vessel building and repair training, and will include a spray cleaning area in addition to the storage facility. The education center will be conveniently located adjacent to the boatyard on the site, allowing for easy access between the campus and the boatyard.

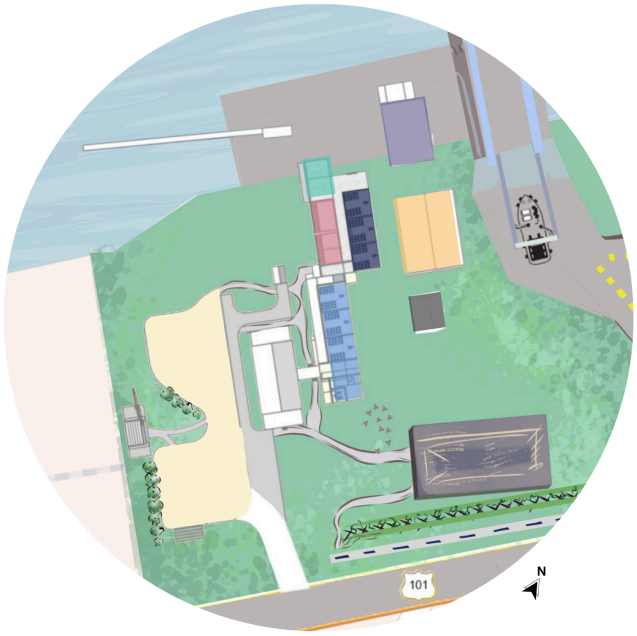


Figure 17: This shows the educational center, parking that would ideally be split between the current business and the educational center. Parking to be labeled. As well as the dorm and some seating for students and staff outside in the grass.

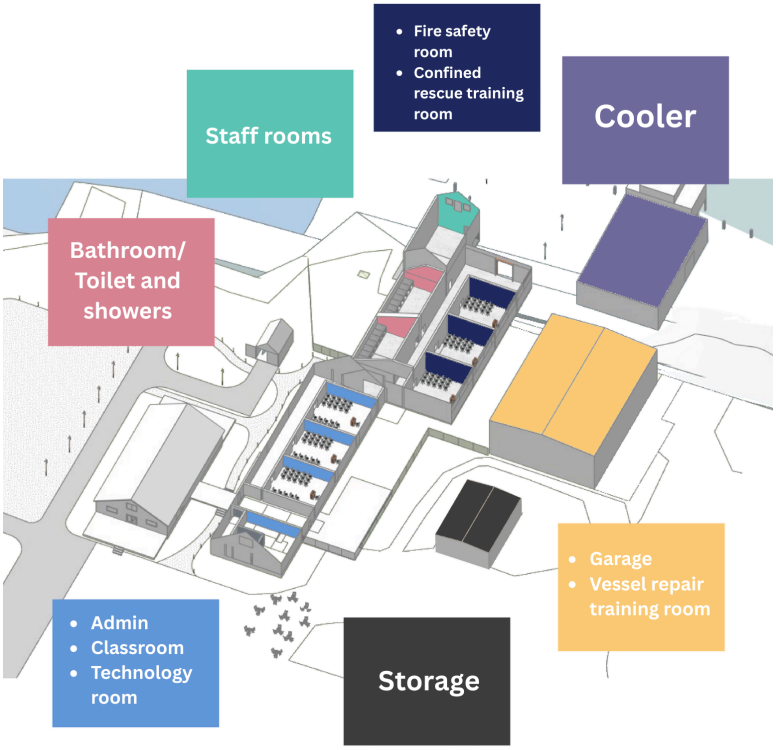


Figure 18: This visual shows a split of how the educational campus would be used.

Dormitory

We've looked to the MERTS campus in Astoria, Oregon as a reference for our proposed marine service campus. While MERTS offers a variety of technical programs including maritime, fire science, criminal justice, welding, and automotive, with class sizes ranging from 6 to 20 students, it lacks on-site student housing. As a result, most students must commute long distances to attend classes, often struggling to find affordable housing nearby. To address this issue in our own plan, we're proposing to set aside 2 acres for dormitory-style student housing on Parcel A. This development would include approximately 40 single dorm-style apartments, putting the density at about 20 dwelling units per acre. The units would provide private bedrooms for students, with shared amenities such as kitchens and common areas, creating a cost-effective and community-oriented housing solution for students enrolled in similar technical training programs.

Parcel B

Intro & Site Design

Parcel B has two options for viability of the site, one is a small commercial area that holds an outlet mall with paths along the waterfront. Covered areas for outdoor seating and an area for rental as a small event space for small shows in the center is included in the design. Parking will be on either end, hidden from the road by green walls, berms and trees, allowing for shade and influencing more walking or biking to the site. Visibility of the water from the 101 will be intermittent, allowing for glimpses. The second option for this site will be industrial storage areas for fishing companies in the area. With an outdoor waiting area for commercial drivers and staff near the water.

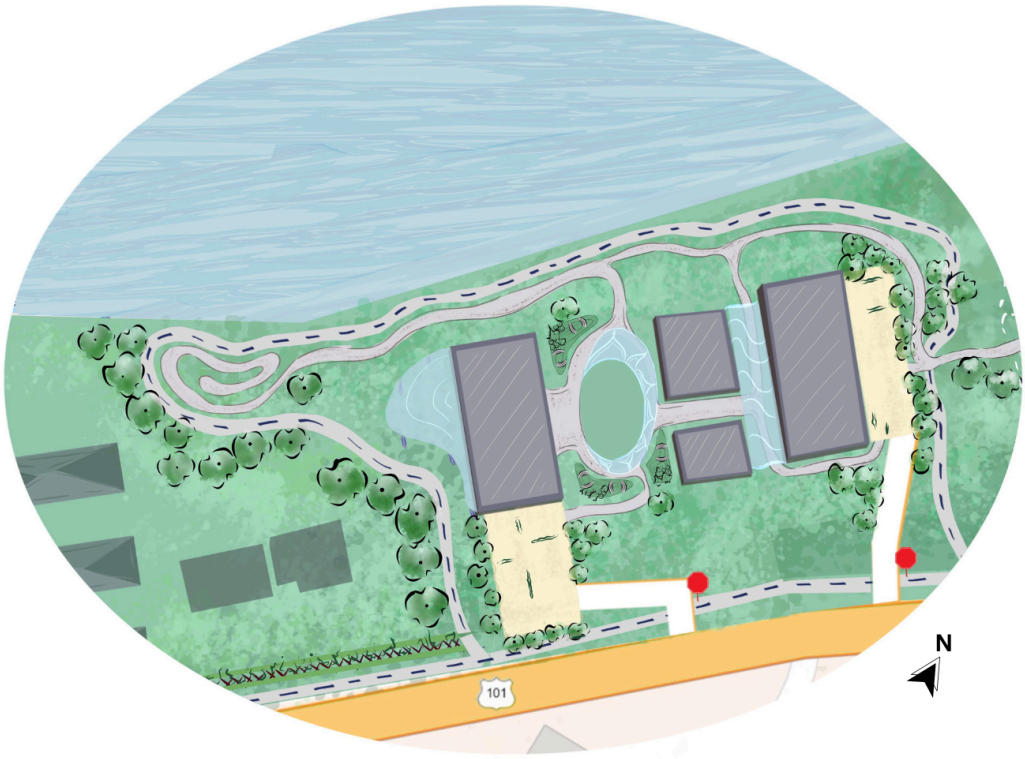


Figure 19: Parcel B

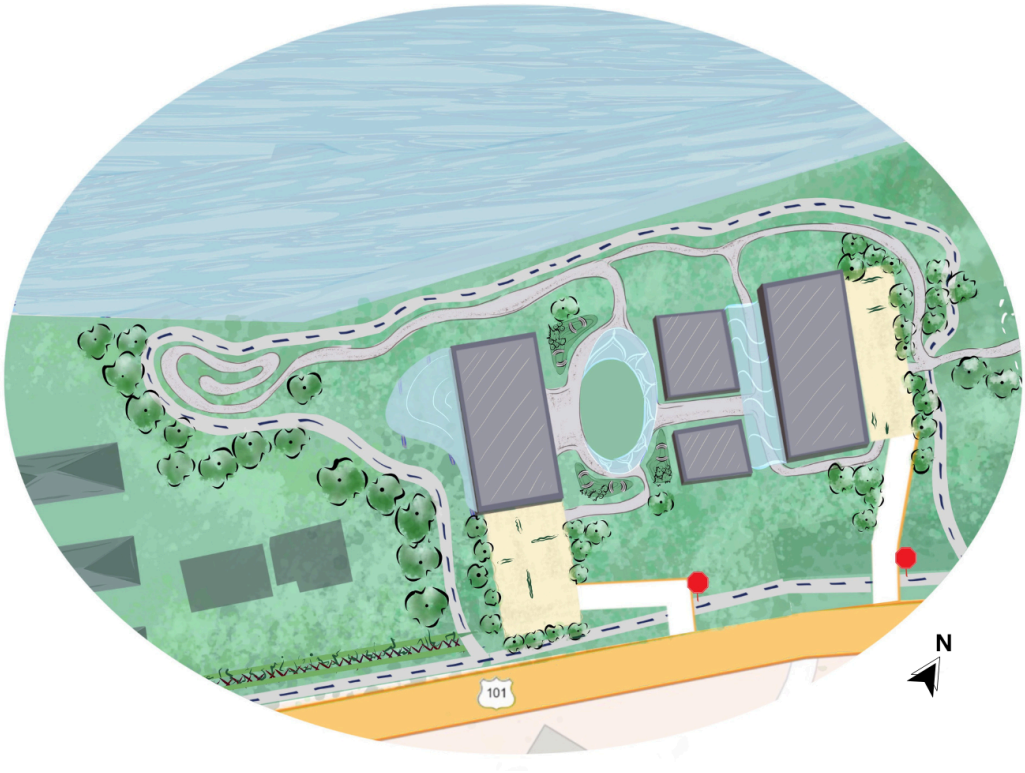
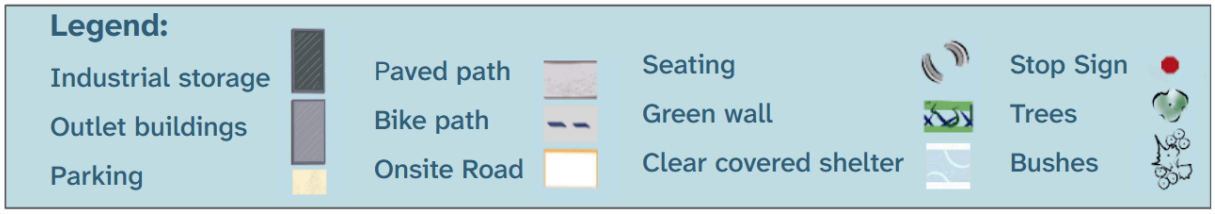


Figure 20: This visual shows 3 storage areas with trucking loading areas, with a smaller parking lot for workers.



Market Research

South Bend's census data points to the city being one the most under-resourced places in the state of Washington. The median household income of the city is $43,333 compared to the Washington state median income of $94,605. Population growth is low and the median age of 45.5 is almost seven years older than the state median age of 38.6. The implications of these numbers in the long term is that South Bend's tax base will stagnate as the population continues to age and young people are forced to look for jobs in other areas. This will make it more difficult for local officials to find the funds to pay for schools and make necessary infrastructure investments. These challenges call for an economic intervention which is why Pacific County is looking at our site as a place to spur commercial activity.

We can look at labor market data within Pacific County to provide a picture of what challenges South Bend faces. The region is considered the shellfish extraction capital of the

country and accounts for $25 million of the county's annual revenue (pacific county ed.org). According to Bureau of Labor Statistics data, the natural resources and mining sector, the sector encompassing shellfish extraction, has seen a 31% decrease in employment since 2017. Experts from the nearby MERTS campus suggested this change was due to technological changes in the industry but also noted that a lack of technical skills amongst the local workforce has forced local companies to fill roles with workers from outside of the county. Officials within Pacific County are eager to see this trend reversed and hope this site could bolster the local job market.

The clients at Pacific County tasked us with identifying potential commercial, industrial, and commercial uses on parcel B of the site. Below is a SWOT analysis of this site and how it could potentially create commercial opportunities for the area.

Strengths

The site has a couple of aspects that could foster commercial development in the future. The site is located at the end of the Willapa Bay State Park Trail. This could direct recreational tourists to the site which in the future could lead to a market for retail development. This development could be further bolstered by the site's waterfront location and scenic views of the Willapa River.

Weaknesses

As mentioned previously, South Bend has one of the lowest median household incomes in the state which makes the opportunity for new commercial development to be limited at this point in time. This is coupled with the fact that the population is older and a limited access to educational opportunities will perpetuate this problem in the future. Furthermore, traffic volumes around the site stand at 7,000-8,000 AADT (average annual daily traffic). This volume is comparable to the neighboring Raymond, but is unlikely to be attractive to potential tenants. Another issue with the site is that there has been a decline in local market activity. Retail tenants on the site have yet to tap into a strong local market and industrial tenants such as canneries have looked to other locations in the county. The lack of current commercial activity on the site makes it difficult to predict what potential commercial opportunities could present themselves in the future.

Opportunities

The success of commercial activity on the site may be contingent on how well other aspects of the site's redevelopment are followed. If the educational campus is developed on parcel A, this could provide an opportunity for young people to stay in the area which could help with the problem's created by an aging population. Moreover, the boatyard being completed could provide a greenlight to prospective industrial tenants which could make something like a marine related storage facility a possibility on the site. Housing created on parcel C could lead to a market for retail uses on the site. These uses are difficult to predict which is why we have provided scenarios for industrial development on the site and for retail/commercial development.

Threats

Threats to commercial development on the site come from uncertainty surrounding population growth and local job market instability. There is a scenario where South Bend's population continues to age and efforts to attract younger people to the area fall short of what the county wants. This will have negative impacts on local tax revenues and weaken long term demand for commercial activity on the site. There is also a possibility that local job market uncertainty continues to drive people away from the area. This could be the result of employers continuing to invest in other areas around the state limiting the amount of jobs that are available to local residents. It is also possible that key industries like shellfish extraction make technological strides that create less of a need for human labor. This is more speculative but points to the danger of relying on one industry to provide employment for the local population.

Parcel C

Intro & Site Design

Parcel C will hold a recreational buffer area that encompasses park trails, a playground, seating and covered areas with grills. The recreational area has two layout options, one that coordinates with the commercial district in parcel B by allowing a bike path to run through it, rather than through the recreational area. The second layout coordinates with the industrial storage usage of parcel B, by moving the bike path through the recreational area. Both bike paths will be loops that round back to the original bike path, extending on the outer edge near 101.

It will also include residential housing that accommodates the area's market research. This housing will be split into 5 pod buildings to be built over a 30 year period. 3 different layouts of the housing have been created to formulate different views and interactions with the site. All of the residential housing will be rental apartments that accommodate 1 to 2.5 people, each building being 3 stories. The residential housing section includes a large access park that connects to the water, that allows enough separation for the neighboring communities to use the space without feeling they are burdening residents. The Residential units will have garden plots shared by 5 units with interconnecting pathways through the site and their garden units to allow for communal responsibility and interaction. All building units will have some view of nature from their window, either being the park or the water or the communal garden spaces. Outdoor, uncovered parking will be available using oyster materials for the parking lot creation. Crosswalks and stop signs will be integrated for safe bicycle and walking travel past the site and into the site.

Public recreation

In order to develop a plan for the proposed public recreation space on 5.34 acres on Parcel C, an inventory of facilities was conducted on parks within a ten mile radius of the parcel, and the South Bend and Pacific County Parks Plans were analyzed to determine needs of the community and gaps in the parks system. To summarize, the analysis found a specific need for more children’s play areas, natural areas/trails, and covered recreation spaces. The parcel is already grown over with trees, rewilding after years as an industrial site. With a still-barren section in the middle of the parcel, this proposal can easily be implemented within the existing natural conditions, with minimally invasive trail and recreation development. An overview of the analysis and design processes is provided below.

First, the inventory of the park spaces and facilities near the site was conducted, to determine the facilities the community already has access to. Parks operated and maintained by the cities of Raymond and South Bend, and Pacific County, were included. There are 16 parks in the study area.

Each park and its facilities are shown in the table below:

Park	City/County	Facilities
Mary Rogers Pioneer Park	South Bend	Restrooms, ADA Path, picnic tables
Helen Davis Memorial	South Bend	Boat launch, RV parking, Pit toilet, picnic table
South Bend Water Park	South Bend	Grassy space, garden, pond, covered bridge
Cheney Community Park	South Bend	Baseball field, playground, bathrooms, basketball court, Tennis court, swings
Robert Bush Park	South Bend	Waterfront, dock, picnic benches, grassy space
South Bend High School	South Bend	Track, football/soccer field,
Mill Pond Creek Park	South Bend	Fishing dock
Riverfront Park	Raymond	Kayak Dock, Outdoor Amphitheater, picnic tables, restrooms
5th Street Park	Raymond	Swings, playground, picnic area
Willapa Landing Park	Raymond	Skatepark, boat launch, restrooms, wetland trail for birdwatching
8th Street Park	Raymond	2 softball fields, playground, tennis court, basketball court, picnic tables, restrooms
Case's Pond	Raymond	Fishing dock
Lincoln Ave Park	Raymond	Playground, basketball court
Lion's Club Park	Raymond	Baseball fields, basketball court
Raymond High School	Raymond	Track, football/soccer field,
Bruceport County Park	Pacific County	Campground, RV accommodations, Restrooms with showers, Day use shelter

Figure 21: Inventory of parks systems of Raymond, South Bend, and Pacific County within a ten mile radius of the site.[1]

A count of each facility category is shown below:

RV Parking	1
Garden	1
Skatepark	1
Amphitheater	1

[1] Source: (City of South Bend, Washington 2022), (City of Raymond Public Works, Accessed May 30, 2025), (Pacific County Public Works Accessed May 30, 2025).

Swings	1
Shelter	1
Pond	3
Football/soccer	2
Track	2
Baseball	3
Dock/Boat Launch	5
Picnic Tables	5
Basketball	4
Restrooms	8
Tennis Court	3[2]

Figure 22: Number of facilities total within a ten mile radius of the site.[3]

While this inventory may help us understand which facilities there are fewer of, it does not tell us how much demand there is for each. Fortunately, the South Bend Parks Plan (2022) provides community input. Top park Activities, Most Popular Parks and Park Needs are summarized in the table below:

Top Activities at South Bend parks	Percent	Popular Parks	Percent
Walking	73	Willapa Hills	54.2
Family Picnics	59.5	South Bend Boat Launch	45.8
Children's play	59.5	Robert Bush	44.4
Walking dog	37.8	Carnegie Library	37.5
Wildlife viewing	33.8	First Street	34.7
Bicycling	25.7	Pioneer Park	30.6
Baseball	24.3	Cheney Park	25
Basketball	23	Mill Pond	18.1
Boating	21.6	Helen Davis	11.1
Fishing	18.9	A Street	11.1
Soccer	13.5		
Tennis	12.2		
Skateboarding	6.8		
Football	5.4		

[2] South Bend plans to removal tennis courts to make way for playgrounds, per the South Bend Comprehensive Parks Plan (2022)

[3] Source: (City of South Bend, Washington 2022), (City of Raymond Public Works, Accessed May 30, 2025), (Pacific County Public Works Accessed May 30, 2025).

Figure 23: Percentage of respondents listing top activities at South Bend Parks and their favorite parks in the city's system.[4]

In written comments, residents also expressed specific interests in more children's play areas, more natural areas (as opposed to grass lawns), and trails (City of South Bend 2022, 19-22). This is backed up by the five most popular park activities: Walking, family picnics, children's play, dog walking, and wildlife viewing. Additionally, 66 percent of respondents had children or grandchildren and 81 percent supported extending the Willapa Hills Trail to Bendiksen Landing (City of South Bend 2022, 23-24). Furthermore, in the Pacific County Parks plan, residents expressed interest in additional community gathering spaces, trails, playgrounds, and picnic shelters (Barnkow and Aljadani 2023, 14) While residents expressed interest in docks and boat launch facilities as well (Barnkow and Aljadani 2023, 14), unfortunately the feasibility of building an additional in-water structure is unclear due to permitting constraints. After discussing the project with the South Bend Public Works Director, it was clear that, as it rains frequently in Pacific County throughout the year, it made sense to provide covered facilities for year-round enjoyment.

After completing this needs assessment, a list of needed facilities were compiled. This public recreation space will include:

- Covered Playground
- Shelter
- 2 Picnic Tables
- 2 Barbeque grills
- A paved multi-use path running east-west through the park
- A trail system looping through the forest section of the parcel
- Bathroom facilities
- Willapa Hills Trail Extension to Bendiksen Landing

A ballpark budget and scale for these facilities is shown below. These are not meant to be exact scale and costs, but rather around the number that the client should expect to pay. Once a feasibility study is completed a final number could be determined. These prices were determined through research of similar projects or from the websites of potential facilities suppliers.

Facilities	Square footage (if applicable)	Cost ($)
Playground	3,000	60,000
Swingset	7'8" W x 16'11" L x 8' H.	1,500
Trails	36 in wide	3-7 per ft

[4] Source: (City of South Bend, Washington 2022).

Shelter	16'x24', 20'x24', 24'x34', 30'x44'	20,000
Grills (2)	n/a	800 (total)
Picnic Tables (2)	Picnic table Dimension: 6 ft in length, benches 17 inches high, table 28 inches high	2,000 (total)
Paved Path	10 ft wide	700,000 per mile
Bathroom	n/a	200,000

Figure 24. Cost breakdown of proposed park facilities[5]

The team produced two visualizations of the recreation space with facilities shown, along with a cross section of the space. Existing natural conditions were incorporated into the design to minimize destruction of greenery in the construction process. This park space would likely be owned and operated by Pacific County Parks, given the size of the space and the regional draw of the facilities.

There are a few funding options for this park. First, the Washington Wildlife and Recreation Program provides up to 1 million dollars for recreation projects around the state, with the next funding application due in April 2026 (Recreation Projects–Washington Wildlife and Recreation Program 2025). The Land and Water Conservation Fund provides funding up to 2 million dollars for conservation projects around the state, with the next application due in April 2026 (Land and Water Conservation Fund 2025).

[5] Sources: (Halladay, 2013), (Products from 2500 to 3000 sq. feet 2025), (2 Seat Standard Swing Set 2025), (*Costs,* Trailism 2025), (Steel Shelters 2025), (Park Grills 2025), (Picnic Table Dimensions 2025), (Wood Picnic Tables 2025), (Accessibility Guidebook 2025), (Shared Use Paths 2025), (Luecke and Loughran 2019).

Figure 25: This visual is one layout option for the recreational buffer area.

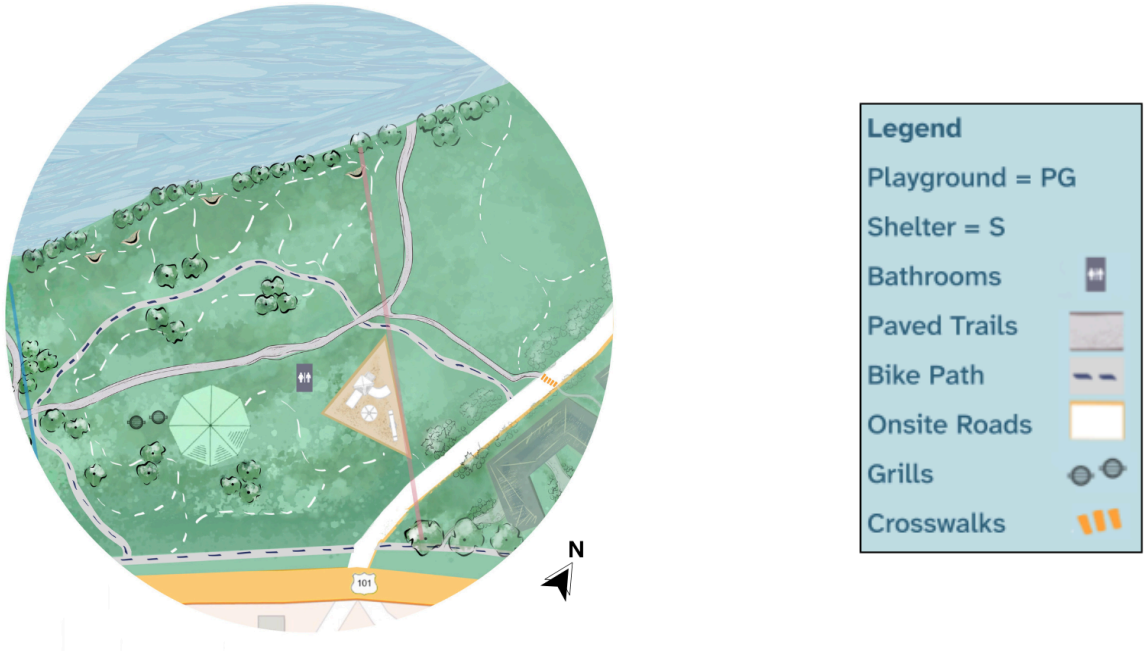


Figure 26: This visual is the second layout option for the recreational buffer area.

Housing

This research focuses exclusively on the rental housing market for Parcel C, where we are evaluating the potential for a new multi-family rental development. The goal is to identify housing demand, market gaps, feasible densities, and appropriate typologies for the site. South Bend is characterized by a stable but aging population, with a median household income of approximately $43,000 which is significantly lower than the 2023 state median of nearly $95,000 (U.S. Census Bureau, 2023). Demographic data reveals that 56.2% of households include individuals aged 60 or older, with 36.1% over 65, and an average household size of 2.4 people (U.S. Census Bureau, 2023). A notable share of non-family households earns between $10,000 to $14,999, pointing to the need for modest, affordable rental units, particularly one- and two-bedroom apartments. Roughly 40% of households in the city are renter-occupied, with the existing rental stock skewed toward one- to three-bedroom units (U.S. Census Bureau, 2023).

South Bend's population has grown modestly from 1,732 in 2013 to 1,856 in 2023, indicating a stable but not rapidly expanding market (U.S. Census Bureau, 2023). The vacancy rate in Pacific County is around 4.2%, which falls within a healthy range for maintaining a competitive rental market (Washington Center for Real Estate Research, 2024). Local rental data show average rents at around $850, with the 2023 Fair Market Rent for a one-bedroom at $798 and a two-bedroom at $1,050 (U.S. Department of Housing and Urban Development, 2023). These figures suggest South Bend's rents remain below state averages, reinforcing the opportunity for affordable rental housing development. One relevant precedent is the Pacific Place Apartments, a 1.29-acre complex with 24 one-bedroom units (plus one larger unit), built at a density of approximately 18 units per acre (see Figure 28). This example helped inform our proposed density target for Parcel C.

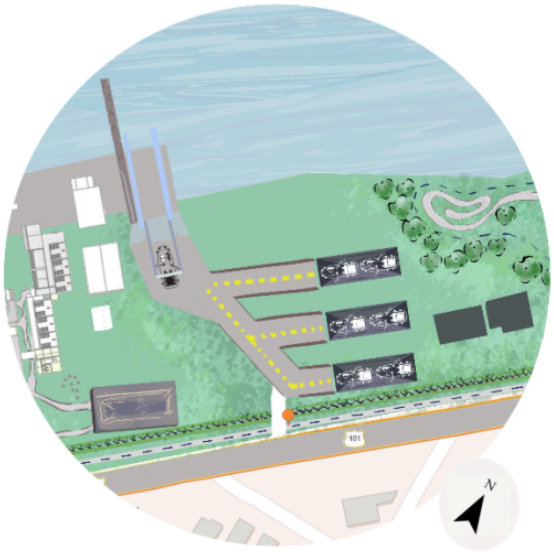


Figure 27: Pacific Place Apartments Density Example

Our proposal outlines a five-acre multi-family rental housing development on Parcel C, targeting a density of 20 dwelling units per acre, totaling 100 units. The design concept consists of five pods of 20 units each, built to approximately three stories in height. A phased development plan is envisioned, building one pod every five years over a 20-year absorption period, beginning from the street and extending into the site. The proposal assumes an average household size of two people per unit, aligning with the area's existing demographic profile and allowing flexibility for both workforce and senior renters.

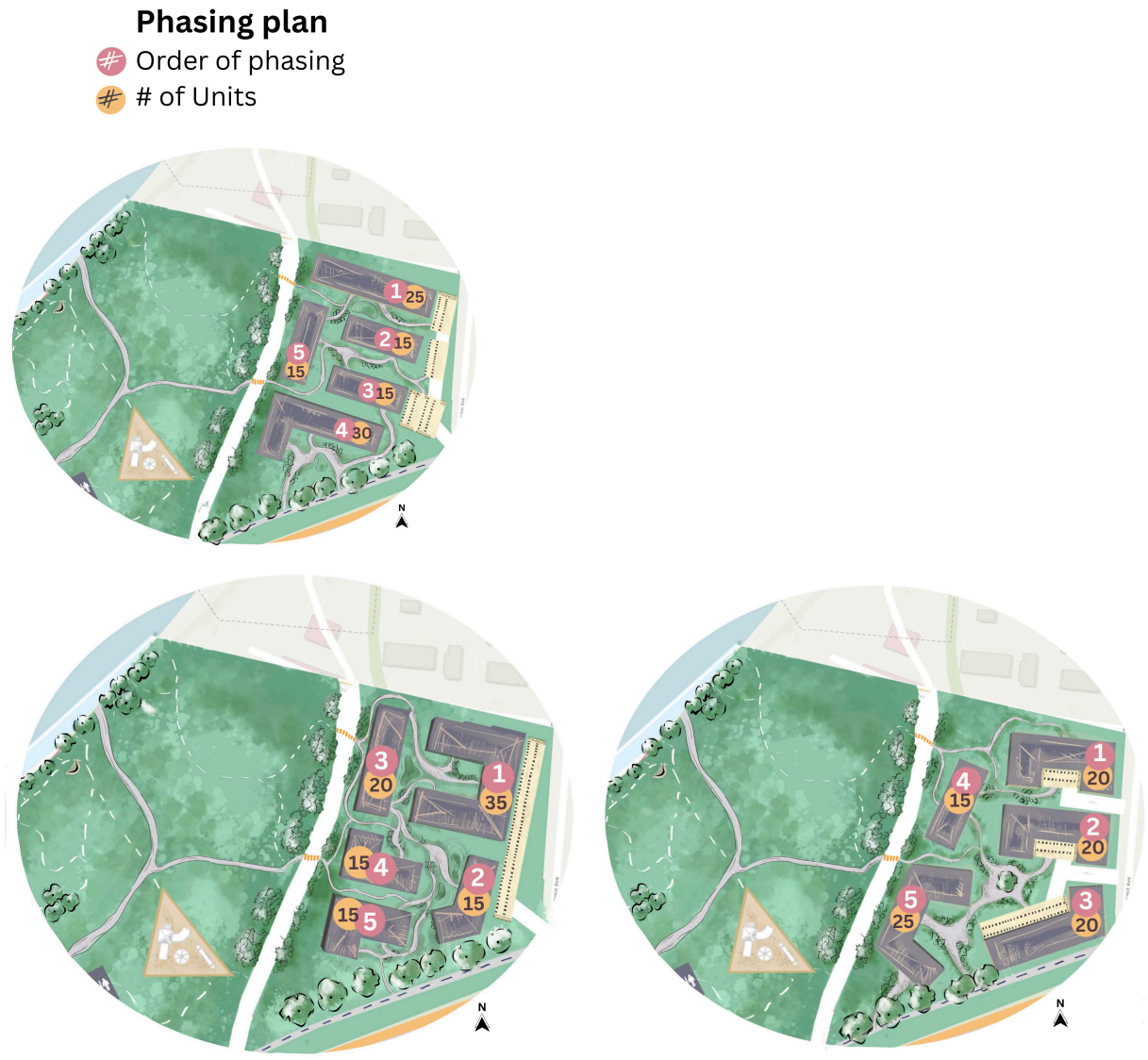


Figure 28: Housing Phasing Plan

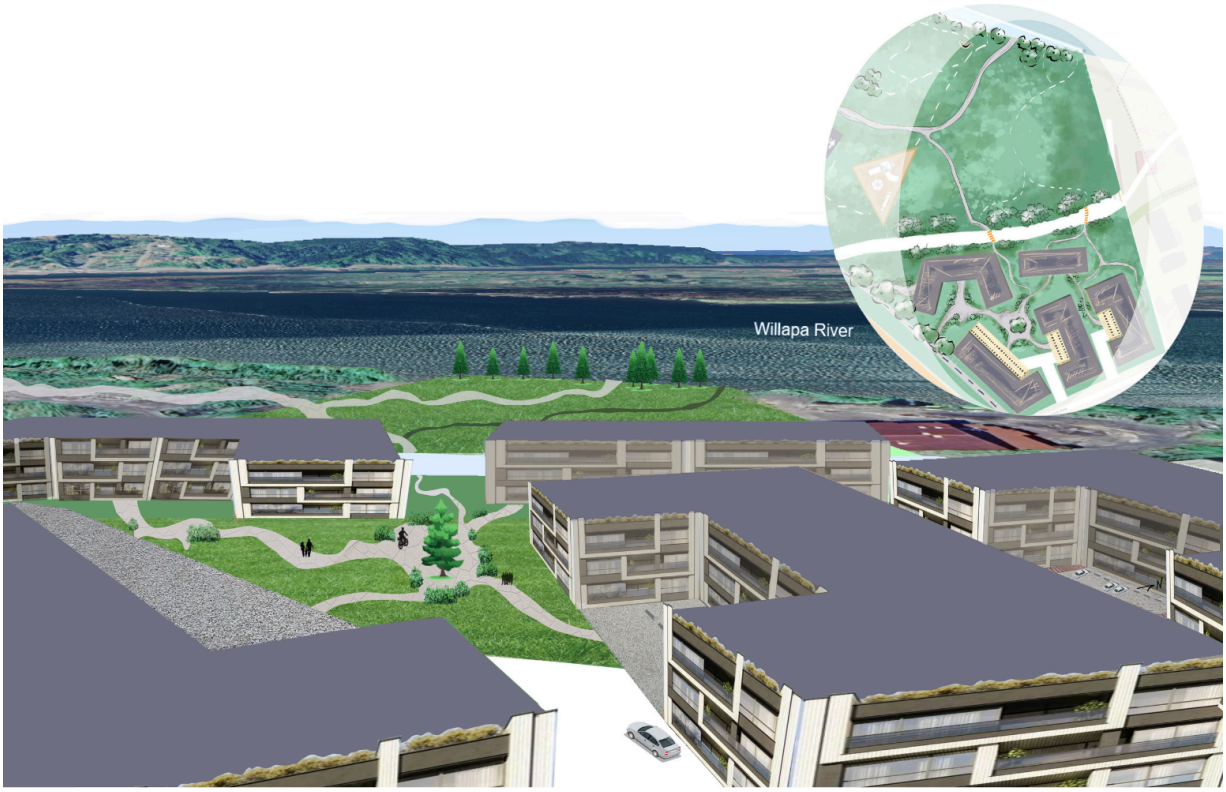


Figure 29: This is a brief speculative perspective of the third proposed layout. A beta free Google Earth software called Delve was used to find accurate sizing on the parcel. This software is used by larger companies on a larger scale. Each proposed layout has approximately 50% split between 1 bedroom and 2 bedroom units. Large portion of the site was left open to green space for easy access to the water.

Recommendations

If you choose to proceed with this project, we recommend the following next steps: First, the basis of this project assumes the acquisition of parcel B, owned by Golden Fleece, and parcel C, which belongs to Pacific County. We recommend that this project is built out from West to East, which would start at the educational campus at Bendiksen Landin on Parcel A. However, the state of this project is incredibly dependent on market forces, many of which are unknown to us at this time. Because the concept of a new educational center is so robust, it is essential that a sponsor is identified to attach its name onto the center. We recommend beginning to discuss with local community colleges and vocational schools in the surrounding area, such as Grays Harbor College which hosts several marine and maritime adjacent programs already in the Aberdeen, Raymond, and South Bend areas.

Second, an economic feasibility test is a key component of evaluating whether a proposed development project makes financial sense and can be sustained over time. When scoping out new development, this test helps determine whether the project will generate sufficient economic returns to justify the initial investment, operational costs, and potential risks. It typically involves analyzing factors such as construction and infrastructure costs, land acquisition, potential revenue streams (from rents, sales, or leases), and ongoing maintenance expenses. It also considers market demand, whether there is a need or desire for the type of development being proposed, and compares that against current and projected economic conditions in the area.

Lastly, an environmental feasibility study is a critical step in evaluating whether a proposed development project is practical, financially viable, and aligned with environmental and regulatory requirements. When considering development on a large brownfield site in South Bend, Washington, a feasibility study becomes especially important due to the complexities associated with previously used or potentially contaminated land. Brownfields often have environmental concerns, such as the presence of hazardous substances, which can significantly affect both the cost and timeline of a project.

Appendices

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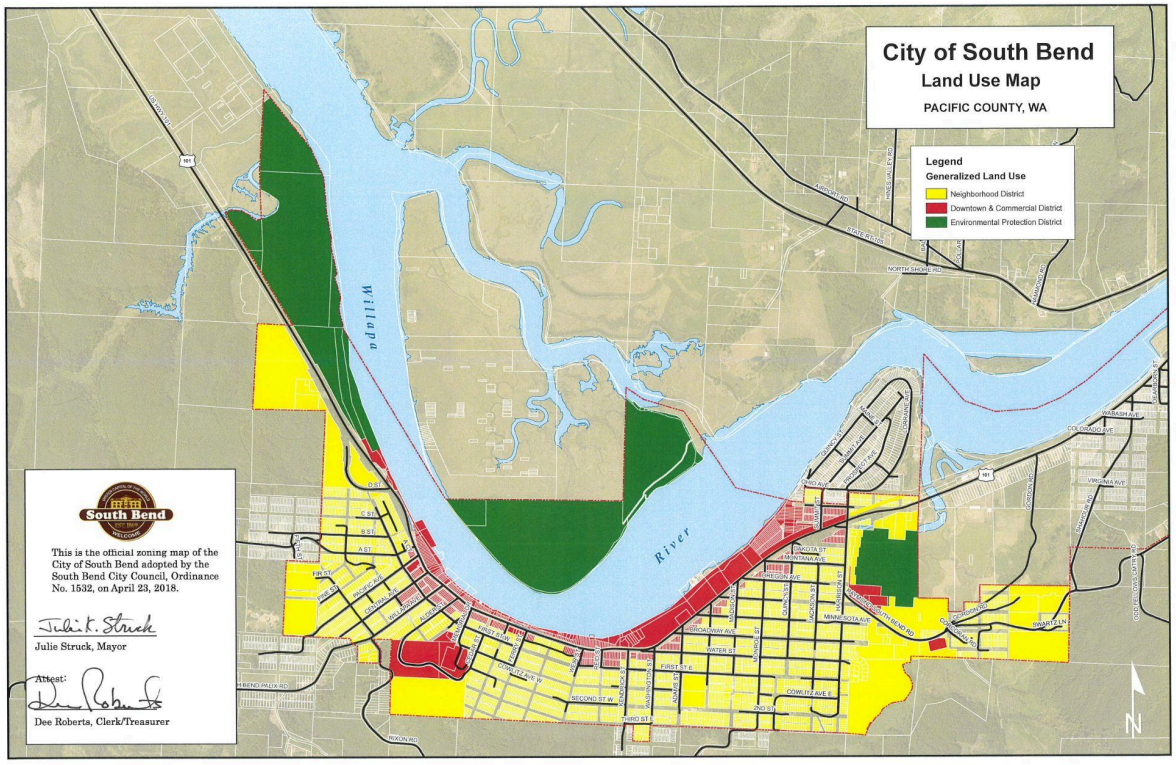
Municipal Zoning Map



506 Scope of Work

During the 506 Studio Prep class, each sub team prepared individual scopes of work for the quarter. These are compiled below.

Marine Project Scope of Work

Objective (1 paragraph)

- Make contact (week 4-5)
- Determine goals (week 6)
- Collaborate with other sub-groups (week 7-8)
- Shape them into deliverables for spring (week 9-11)

Project Description (1-3 paragraphs)

- Build relationship with stakeholders/507 instructors (weeks 4-11)
- Determine which site is best for education campus (spring quarter)

Deliverables

1. Introduce liaison to clients (week 4)
2. David is looking for market analysis, ask clients where they suggest data analysis sources? (community engagement) (week 4)
    a. Discuss with educational institutions on program output/use/success
3. Review county and state comp plan, port regulations/plans, any relevant municipal comp plans (week 4)
4. Identify forward looking projects/goals (week 4-5)
5. Ask clients about criteria for choosing between sites (week 4-5)
6. Initial meeting with clients (week 5)
7. Divide sub team further based on stated client needs (week 5-6)
8. Who does the client recommend as ideal contacts for each site are, do they have an existing preference? (week 5)
9. Discuss impacts of site choice on local communities (week 5)
10. What does the client want from a feasibility study? (week 5)
11. Who are the main stakeholders for each site? (week 5)
12. Does any site face restrictions? What are operative regulatory forces for each site? (town, county, state, federal regulations) (week 5)
13. Interview transcript/minutes of meeting with client (week 5-6)
14. Investigate other resources as provided by client (week 6-7)
15. Visit client suggested sites to determine relevance to end goal (week 7)
16. Formulation of specific objectives (week 6-11)
17. Written description of goals (week 9-11)

Market Research, Population, and Economic Development Scope of Work

Summary:

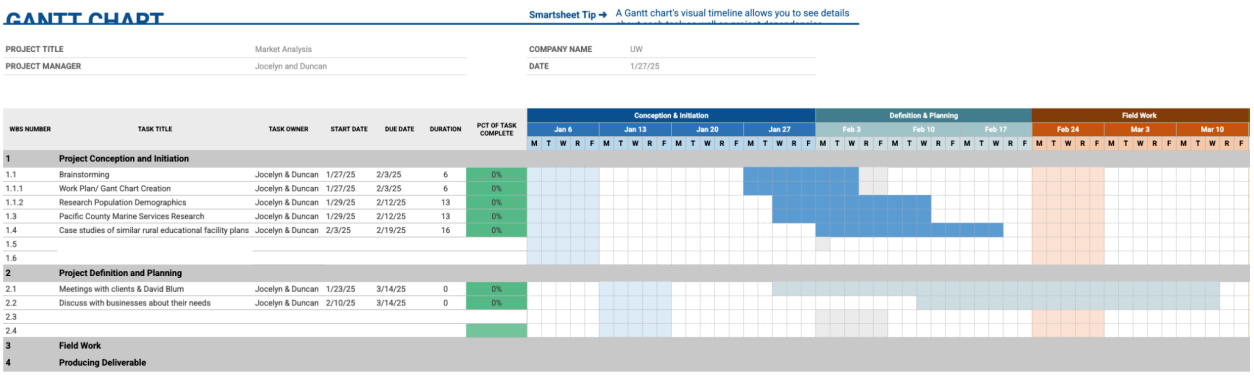
Our group will focus on performing market research in Pacific County focusing on population and economic development potential. By the end of the quarter, we will compile an Initial Conditions Report (ICR) describing the specific market research techniques and deliverables that will be provided to the client.

Initial Research Categories:

- Workforce population Demographics of Pacific County: gender, age, race, and income
- Fish and Seafood Market (is oysters the main driver?): consumer preferences, market trends, any threats to this market, population growth
- Education - What studies and institutional resources are available. Education - HS, 2 year or 4-year college programs? How does it work? Should we look into the programs the High Schools offer?
- New Technologies: Effects of SMP Policy 6.2(A)(12), which requires the county to address new information and technologies regarding aquaculture, what kinds of emerging technologies can address workforce challenges?
- Research on business clusters - will it be beneficial in this case? What are characteristics of successful clusters?
- Tourism: Is the industry growing or shrinking?

Deliverables

- SWOT chart of Pacific County economic conditions
- Data collection and analysis
- Cross tabulations of key variables
- Detailed report of key findings and recommendations



GANTT CHART

Smartsheet Tip → A Gantt chart's visual timeline allows you to see details

PROJECT TITLE	Market Analysis	COMPANY NAME	UW
PROJECT MANAGER	Jocelyn and Duncan	DATE	1/27/25

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	**Project Conception and Initiation**					
1.1	Brainstorming	Jocelyn & Duncan	1/27/25	2/3/25	6	0%
1.1.1	Work Plan/ Gant Chart Creation	Jocelyn & Duncan	1/27/25	2/3/25	6	0%
1.1.2	Research Population Demographics	Jocelyn & Duncan	1/29/25	2/12/25	13	0%
1.3	Pacific County Marine Services Research	Jocelyn & Duncan	1/29/25	2/12/25	13	0%
1.4	Case studies of similar rural educational facility plans	Jocelyn & Duncan	2/3/25	2/19/25	16	0%
1.5						
1.6						
2	**Project Definition and Planning**					
2.1	Meetings with clients & David Blum	Jocelyn & Duncan	1/23/25	3/14/25	0	0%
2.2	Discuss with businesses about their needs	Jocelyn & Duncan	2/10/25	3/14/25	0	0%
2.3						
2.4						
3	**Field Work**					
4	**Producing Deliverable**					

Conception & Initiation: Jan 6, Jan 13, Jan 20, Jan 27 | Definition & Planning: Feb 3, Feb 10, Feb 17 | Field Work: Feb 24, Mar 3, Mar 10

Environment, Land Use, & Climate Scope of Work

The Environment, Land Use, & Climate Team aims to identify the state of Pacific County's environmental health, the land use policies shaping impacts, and how future climate

scenarios will be affected and affect marine services. The first component of this work is to produce three reports, each focused on a different component of the natural world–water, land, and air. Each report will consist of an analysis of related existing policies at each level of government, and notable policies that don't direct the actions of Pacific County or the Port of Willapa Bay. In addition to policy analysis, an assessment of native flora and fauna will be made to better showcase the state of their relationships with marine services and with each other. The end-of-quarter report will consist of a stitched-together and enhanced product based off of intersectional insights gained along the way.

Environment, Land Use, & Climate Gantt Chart

WBS NUMBER	TASK TITLE	START DATE	DUE DATE	WEEK 4 Jan 27	WEEK 5 Feb 3	WEEK 6 Feb 10	WEEK 7 Feb 17	WEEK 8 Feb 24	WEEK 9 Mar 3	WEEK 10 Mar 10
				M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F
1	**Water : State of the Bay**									
1.1	Policies and regulations	Week 4	Week 6							
1.1.2	*County*	Week 4	Week 6							
1.1.3	*State*	Week 4	Week 6							
1.1.4	*Federal*	Week 4	Week 6							
1.1.5	*Out of Juristiction*	Week 5	Week 6							
1.2	Species	Week 5	Week 6							
1.3	Plants	Week 5	Week 6							
2	**Land: State of the Shoreline**									
2.1	Policies & Regulations	Week 6	Week 8							
2.1.1	*County*	Week 6	Week 8							
2.1.2	*State*	Week 6	Week 8							
2.1.3	*Federal*	Week 6	Week 8							
2.1.4	*Out of Juristiction*	Week 6	Week 8							
2.3	Species	Week 7	Week 8							
2.4	Plants	Week 7	Week 8							
3	**Air: State of the Atmosphere**									
3.1	Policies & Regulations	Week 8	Week 10							
3.1.1	*County*	Week 8	Week 10							
3.1.2	*State*	Week 8	Week 10							
3.1.3	*Federal*	Week 8	Week 10							
3.1.4	*Out of Juristiction*	Week 8	Week 10							
3.3	Species	Week 9	Week 10							
3.4	Plants	Week 9	Week 10							
4	**End-of-Quarter Deliverable**									
4.1	**Executive Summary**	Week 10	Week 10							
4.2	**Policies and regulations**	Week 4	Week 10							
4.2.1	***County***									
4.2.1.1	Water	Week 4	Week 6							
4.2.1.2	Land	Week 6	Week 8							
4.2.1.3	Air	Week 8	Week 10							
4.2.2	***State***									
4.2.2.1	Water	Week 4	Week 6							
4.2.2.2	Land	Week 6	Week 8							
4.2.2.3	Air	Week 8	Week 10							
4.2.3	***Federal***									
4.2.3.1	Water	Week 4	Week 6							
4.2.3.2	Land	Week 6	Week 8							
4.2.3.3	Air	Week 8	Week 10							
4.2.4	***Out of Juristiction***									
4.2.4.1	Water	Week 4	Week 6							
4.2.4.2	Land	Week 6	Week 8							
4.2.4.3	Air	Week 8	Week 10							
4.3	**Species**	Week 4	Week 10							
4.3.1	Water	Week 4	Week 6							
4.3.2	Land	Week 6	Week 8							
4.3.3	Air	Week 8	Week 10							
4.4	**Plants**	Week 4	Week 10							
4.4.1	Water	Week 4	Week 6							
4.4.2	Land	Week 6	Week 8							
4.4.3	Air	Week 8	Week 10							

This group will focus on the financial modeling and assessment of each site identified by Pacific County clients. The objectives of this quarter include GIS maps of each site, cost assessments of each site, and a report of our findings and recommendations.There are a few

funding options for this park. First, the Washington Wildlife and Recreation Program provides up to 1 million dollars for recreation projects around the state, with the next funding application due in April 2026 (Recreation Projects–Washington Wildlife and Recreation Program 2025). The Land and Water Conservation Fund provides funding up to 2 million dollars for conservation projects around the state, with the next application due in April 2026 (Land and Water Conservation Fund 2025).

Deliverables

1. Gather preliminary information on each site
2. Work Plan/Gantt Chart
3. Gather Data Sources
4. Contact Stakeholders?
5. GIS base maps
6. Compare/Contrast Site Research
7. Collaborate with Market Research subteam to combine findings
8. Draft of Site Analysis Findings Report

Sites

Site #1: MERTS Campus | Clatsop Community College
- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities

Site #2: Port of Willapa Harbor Facilities (Bay Center Marina, Bendiksen Landing, Dick Taylor Industrial Park, Raymond Port Dock, Stan Hatfield Energy Innovation District, Tokeland Marina and RV Park, Willapa Harbor Airport)
- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities

Site #3: Riverview Education Center (Grays Harbor College)
- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities

Site #4: Tech Center at Port Main Dock (Port owned), operated under a 3-school agreement. Covid really impacted it coming online.

- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities

Site #5: Nettleton's in South Bend and near Bendiksen. Former Heavy equipment repair-machine tool. Port owned.

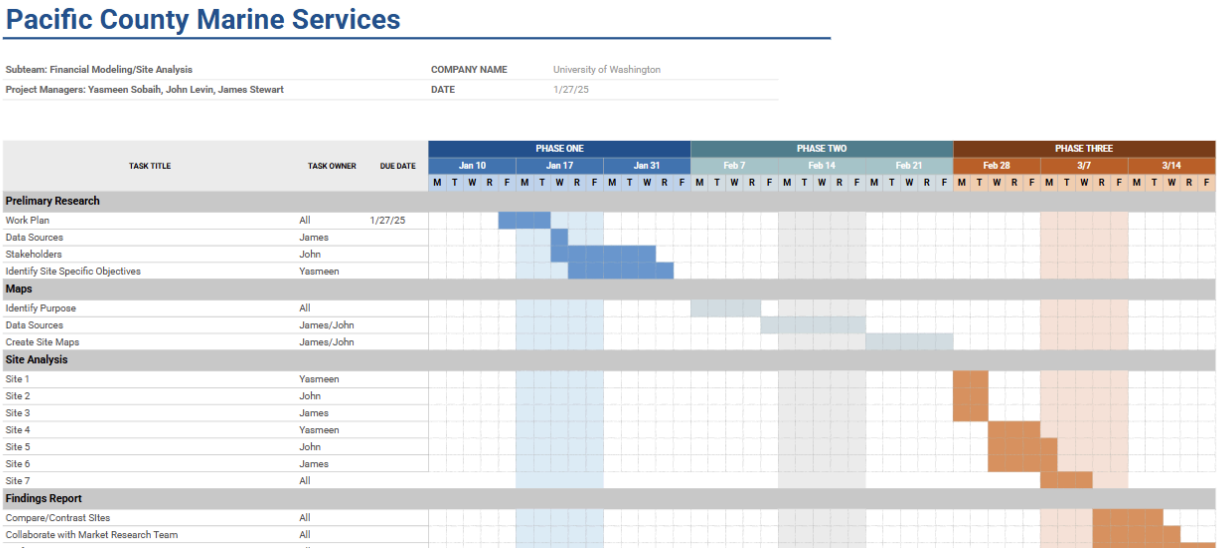
- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities

Site #6: South Fork site (at the Port) for consideration of its wharf and possible expansion for a pier and travel lift. The federally railbanked trail is a bit of a challenge but all can be woven together. The Energy Innovation District Concept is the most important aspect of South Fork. The site has soil bearing challenges that structural fill would solve. We recently had Tidal Visions put in bladder tanks for their fish waste.

- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities

Site #7: There are other sites that have potential purposes. Those require strategy based on a buyer-seller relationship. Sites near or next to Bendiksen are an example. (county and private party).

- Costs (sitework, construction, taxes, repairs, etc)
- Work that needs to be done
- Elements it has/doesn't have to accommodate marine education institution
- Utilities



Pacific County Marine Services

Subteam: Financial Modeling/Site Analysis — COMPANY NAME: University of Washington
Project Managers: Yasmeen Sobaih, John Levin, James Stewart — DATE: 1/27/25

TASK TITLE	TASK OWNER	DUE DATE
Prelimary Research		
Work Plan	All	1/27/25
Data Sources	James	
Stakeholders	John	
Identify Site Specific Objectives	Yasmeen	
Maps		
Identify Purpose	All	
Data Sources	James/John	
Create Site Maps	James/John	
Site Analysis		
Site 1	Yasmeen	
Site 2	John	
Site 3	James	
Site 4	Yasmeen	
Site 5	John	
Site 6	James	
Site 7	All	
Findings Report		
Compare/Contrast Sites	All	
Collaborate with Market Research Team	All	

PHASE ONE: Jan 10, Jan 17, Jan 31 — PHASE TWO: Feb 7, Feb 14, Feb 21 — PHASE THREE: Feb 28, 3/7, 3/14

507 Scope of Work

Project Description:

This studio project will create a master plan joining the three identified parcels at Bendiksen Landing and two neighboring sites in the city of South Bend, Washington. It will then determine the feasibility of an education facility and housing developments as well as other uses based on current market conditions.

Objectives:

1. Create a master plan for the identified parcels.
2. Develop a proposal for housing and educational development specific to Bendiksen Landing and adjacent properties
    a. consider local market conditions, preferences, and development codes.
3. Provide high quality analysis and recommendations including graphics for public engagement and outreach.

Overall Deliverables:

1. A master plan of the three identified parcels into one project.
2. The master plan will include the marine services educational facility, housing, and other uses as appropriate for market conditions.
3. Analyze current conditions, regulatory controls, and market factors at the site.
4. Housing
    a. Conduct market research to determine the feasibility of a development based on zoning, adjacency studies, financial modeling, population analysis, and demographic analysis
5. Entitlements & Scheduling
    a. Determine feasibility of proposed educational and housing developments based on permitting requirements and environmental constraints. Ensure proposed developments meet all initial zoning requirements.
    b. Draft critical path schedule including pre-development tasks.
6. Master Plan Site Design
    a. Draft master plan including in-water and uplands development potential.
7. Master plan report and presentation with recommendations for the Port of Willapa Harbor including relevant case studies, detailed local research, maps, and graphics.

Deliverables by Subgroup:

1. <u>Housing, Yasmeen:</u> The housing subgroup will evaluate the potential for new rental housing development. The research will focus exclusively on the rental housing market, with an emphasis on identifying demand, market gaps, appropriate housing typologies, and feasible densities for the site based on the zoning code and comprehensive plan requirements. There will also be an analysis of a potential new rental housing demand generated by the development of a marine sector service campus.
2. <u>Site Design, Riah & Max:</u> The site design subgroup is responsible for creating an overall visual site plan that includes adjacency studies analyzing the 24 acre site of interest in comparison to the surrounding area. The design group will lead on the creation of the

deliverable of a model that shows the proposed plan of the site on a quarter acre scale. The site plan will include relevant utilities, zoning, and permitting information.

3. Archival Research, Hanalei: Determine all previous land uses on the eighteen identified parcels. Once prior land uses and improvements have been identified, the potential impacts of those uses must be analyzed. The impacts on water, air, and soil quality are most relevant to future developments on this site. This analysis will draw on relevant archival sources in Olympia, Pacific County, UW, and online databases. A framework will be created to research the impacts of prior land improvements on the existing site. The final product of this section will be synthesized research effectively for use by other subteams and integration into the final product.
4. Utilities, James: The utility subgroup will evaluate existing electricity, natural gas, water, and sewer infrastructure to assess the feasibility of the proposed development. This includes mapping main supply lines, coordinating with South Bend Public Works and Pacific County PUD #2 to fill data gaps, and analyze capacity against projected demand. Deliverables include GIS utility maps and a Utility Capacity and Conditions Report.
5. Educational Campus, John: The Educational Campus group will analyze the educational facilities at the MERTS campus and put together a plan for the educational part of the Bendiksen's Landing site. Information from the MERTS campus includes the different buildings and amenities they include, what each building is used for, square footage and acres of each building, and a map of the educational facilities. This information will be used to create a plan for the redevelopment of Bendiksen's Landing based on existing structures and the need for educational facilities. Deliverables will include existing buildings and structures, buildings with information on facilities, components and space, and a map of the educational campus.
6. Commercial Market Research, Justin & Kiran: The commercial market research team will analyze federal and state data sources to provide a clearer understanding of what industries are growing, and which are shrinking within South Bend and Pacific County. Providing this analysis will provide the clients a clearer answer for potential industrial commercial tenants on the site. This may include outreach to industry experts and local business owners to get a better picture of what market needs exist for South Bend. A SWOT analysis here could be a good way to present which industrial commercial uses can exist on the site.
7. Boatyard, Duncan: The Boatyard subgroup will conduct research of boatyards in a rural Washington setting and examine how a boatyard land use element can be integrated into the site. Comparable boatyards will be analyzed to reveal metrics such as data on boatyard customers, number of vessels repaired, and turnaround time. Information on similar boatyards will allow contextualization of the boatyard within South Bend and Pacific County, WA. Big picture expectations of the boat yard's capacity, layout, and relation with the rest of the site will be formed.
8. Public Recreation, Noal & Aidan: The Public Recreation subgroup will research parks and recreation needs for a site plan for 4 acres on the Pacific County owned site. This research will involve case studies of rural parks developments in coastal Washington and buffer projects protecting housing from industrial uses; a survey of the parks system within a 10-mile radius of the site to determine gaps in facilities offered and the opportunities that this site provides (including potential discussions with South Bend and/or Pacific County officials about parks priorities); and a SWOT analysis of the site

addressing Strengths, Weaknesses, Opportunities, and Threats to Public Recreation on the site. Upfront concerns to be addressed include soil contamination, sea level rise impacts, shoreline hazards and regulations, Subsidence, and the shell pile being removed. Other concerns that come up during the research process will be addressed.

9. Zoning and Environmental Permitting, Christopher, Peter & Max: The Zoning & Environmental Permitting subgroup will be researching for and producing two deliverable components: a written report with quantitative analysis, and informative maps backed by the data. By June, the team will have identified all zoning and permitting agencies related to zoning and environmental concerns, what their regulations are, and how they apply directly to the site. The team should also have made significant progress in exploring what actions each regulation will implore the Port of Willapa Harbor to make. Deep research into GIS data will be conducted, sourcing shapefiles from federal, state, and local sources to create effective evaluation and visualization tools for both the Port and for community members. These maps should complement and be part of the subgroup's component of the presentation and report.
10. Program Management, Jocelyn: The project manager will be responsible for monitoring the progression of tasks assigned for each individual subgroup, including the assistance of 5 undergraduate students who are assigned to various subgroups. They will maintain a database which keeps track of regular status reports of deliverables that each subgroup is responsible for completing. The project manager will also be responsible for being the main person of contact with the client and keeping them informed of progress, as well as forwarding any relevant feedback or new information from the client to the rest of the group.
11. Final Presentation Production, Justin, James & Yasmeen: Team of three students will develop a presentation consisting of approximately 45 slides supporting 1.5 hours of verbal presentation. Minimally two students will present this information.
12. Final Paper Production, Hanalei, Jocelyn, & Duncan: Team of three students will synthesize the final report from all subteam findings. This report will contain all research and recommendations gathered by the 507 studio and be presented to the clients upon completion.

Timeline and Key Milestones:

1. Scope of work and schedule: April 14, 2025
2. Summary of Initial Research and Outreach: April 21, 2025
3. Outline of Graphics: April 28, 2025
4. Draft Recommendations: May 2, 2025
5. Final Recommendations to be approved by client: May 27, 2025
6. Draft Graphics: May 30, 2025
7. Final Presentation, Graphics, Report Due: June 4, 2025

Project Reports:

1. Final presentation: Wednesday June 4 2025 at 2:30pm, on Zoom
2. Final report: June 13, 2025

Communication Plan:

Students meet on Mondays, Wednesdays, and Fridays from 1:30PM-4:20PM. Meetings should be scheduled with client contacts or stakeholders during class time.

Responsibilities:

- **Client, Port of Willapa Harbor:** Provide resources to students and communicate client needs. Provide feedback on draft findings, graphics, and recommendations.
- **Pacific County EDC:** Provide feedback to students on draft findings, graphics, and recommendations. Provide contact information for stakeholders and connect students to available resources.
- **UW Studio:** Conduct research and feasibility analysis of housing and educational facility development opportunities, summarize and present work through a report, maps, and a presentation. Provide consistent communication and updates to clients.

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