

APPENDIX 1: TECHNICAL MEMOS

Economic Considerations

Structural: Conditions Assessment

Architectural: Conditions Assessment

Civil: Infrastructure Assessment

Civil: Utility Improvements Exhibit

Transportation: Background & Existing Conditions

Transportation: Background Transportation Information

DATE: September 3, 2021
TO: Calder Gillen, Walker Macy
FROM: Emily Picha, Lorelei Juntunen, Ariel Kane, and Isabel Tapogna
SUBJECT: Economic Considerations – Astoria Waterfront Master Plan - **DRAFT**

The purpose of this memorandum is to summarize trends, issues, and constraints related to demographic changes, tourism development, economic barriers, and small business needs in the City of Astoria. We have organized this document into a series of strategic questions for the project team to consider as we move forward with the planning process for the waterfront study area.

As part of this work, ECONorthwest evaluated the following documents:

- Port Strategic Business Plan, 2019
- Advance Astoria Economic Development Strategy, 2017
- Advance Astoria Economic Opportunities Analysis (EOA), 2017
- NW Oregon Comprehensive Economic Development Strategy, 2018-23
- North Coast Economic Recovery Strategy, 2020
- Civic Dossier – Civilis Consultants

The remainder of this document presents the strategic questions along with key considerations. We have included footnotes that point to the document we sourced the information.

Strategic Questions

How might demographic changes impact our thinking about development trends on the site?

- **New development should consider the needs of an aging population.** Clatsop County is attracting retirees, and the fastest growing age group has been in the 65 years and older age group. Walkability and aging in place are important factors that Baby Boomers consider when thinking about a place to live.
- **To attract younger workers, Astoria should focus on how it provides urban amenities, like a vibrant waterfront and housing that is affordable to workers entering the workforce.** Since 2000, the number of residents 24 and younger has declined. Most members of Generation Y are interested in living in a place with urban amenities. If the area is unable to attract enough young workers, the region's economic resiliency is in jeopardy. Additionally, retirements will affect workforce development and training needs in the coming years.¹²

“Lack of workers is already limiting expansion and development of North Coast fish processors and staffing restaurants and retail in the visitor industry. Trucking and the construction trades, two vital industries to NW Oregon's economic sustainability are losing workers to retirement.”

NW Oregon 2018–2023
Comprehensive Economic
Development Strategy (CEDs)

- **Incomes are lower than in other areas.** Therefore, to be viable, new offerings on the waterfront may need to serve visitors as well as locals. Additionally, higher wage jobs may be an important priority.
- **Resident incomes have fallen and are stagnating at 80% of the median income in Oregon.** As the region’s economy experiences growth in certain industries, the regional median income (\$47,337) has fallen below Oregon’s median income (\$50,521).”³
- **The area continues to attract new residents and is forecast to grow.** In Astoria, nearly 12% of all residents lived outside Clatsop County or outside the State of Oregon 12-months prior. These new residents will be a source of demand for housing and retail uses.⁴
- **The waterfront could contribute to local workforce training efforts as employment is forecast to continue growing.** Employment in Astoria will grow by about 1% annually, adding about 1,400 net new jobs by 2040, with the largest number of new jobs in health care and social assistance.⁵
- **Educational attainment is lower in NW Oregon than statewide, but community colleges help fill in workforce skills gaps.**⁶ Development at the waterfront could build on Clatsop Community College and Small Business Development Center efforts to coordinate apprenticeship programs with local employers and high school youth.⁷

Based on studies to date, how can the Waterfront best serve Astoria’s small business community?

- **The Waterfront district can help fill the gap on needed affordable commercial space.** As businesses scale up, local economic development plans to date have cited that it is extremely difficult to find available and affordable commercial space. Small businesses occupying less than 1,800 square feet can help activate the waterfront district.⁸
- **Centralized business resources, such as a maker space, resource center or incubator may help develop a supportive entrepreneurial ecosystem.** The Advance Astoria Plan cites turnover and high failure rates among small businesses downtown, and indicated that “a testing ground (e.g., a maker space), programs or city-sponsored or supported business training could improve the prospects for entrepreneurs.”⁹
- **Provide flexibility in zoning regulations to bolster Astoria’s existing business base, which provides a strong foundation to promote local industries.** The waterfront could provide spaces to showcase the City’s existing makers and producers, combined with the existing service delivery system in NW Oregon.¹⁰ However, many of these uses span both retail and industry, which is not always compatible with current zoning.

There are 139 identified entrepreneurial establishments in Astoria. They report average revenues of about \$70,000 annually for a total of more than \$9.5M in 2015, and on average they occupy less than 1,800 square feet of space to operate, which means that the entire sector leases nearly 250,000 square feet of space within the City. -

- **Specific physical improvements can help to activate business districts, including better active transportation connections from Uniontown to downtown and a greater focus on Astoria’s gateways into town.**¹¹
- **Build on the energy from the proposed food hub in downtown Astoria.** The Astoria Food Hub is seeking to redevelop the former Sears Hometown Store as a food hub that would retail, processing, storage and distribution hub for local food producers.¹² There could be an opportunity for a complementary use on the waterfront, with a focus on seafood.

First, focus on encouraging growth in local companies over recruitment. And second, create new opportunities that add value to current industries.
- Civic Dossier, Civilis Consultants

What are key tourism trends that the Plan should account for?

Continued increase on tourism, with tight labor markets

- **Tourism/service industry already account for a third of the region’s employment and are likely to continue to be key industries.**¹³
- **Labor shortages have been creating tighter markets, even with job growth approaching three percent.**¹⁴

Focus on experiential travel

- **With new trends in visitors seeking interpretive and educational experiences, the plan should consider how to incorporate these elements into the developments in the district.** This site could serve as an anchor for these experiences, alongside other key sites like the Columbia River Maritime Museum, Tillamook Forestry Center, Tillamook Creamery, and a planned Estuary Discovery Center in Garibaldi.¹⁵
- **Craft brewing, distilling, and other specialty manufacturing can offer unique opportunities to leverage existing industries and opportunities that attract visitors, take advantage of the traded sector and provide employment opportunities for residents.** There are nearly a dozen breweries operating in the region that are exporting products all over the Pacific Northwest distribution.

The growth of craft brewing in NW Oregon is also benefiting the region’s tourism industry, providing an attractive amenity for visitors to the area.” - North Coast Economic Recovery Strategy

A changing cruise industry

Astoria is a natural port-of-call for the Pacific Northwest cruise lines. An additional competitive advantage is having an accessible and supportive local/regional tourism community to greet passengers.

- **The Port has seen a continued rise in the number of cruise ships docking in Astoria over the last 10 years, which was halted by the COVID-19 pandemic.** Prior to the COVID-19 pandemic, the Port was expecting 31 cruise ships for 2020, carrying close to 100,000 passengers and crew members.¹⁶

- **While the number of ships is not expected to increase over the next decade, the number of passengers is expected to double, and the size of ships is expected to increase** The Port also expects an increase in riverboat cruises. The Alaska to Pacific Northwest cruises were the second most popular routes in 2017.¹⁷

What economic barriers should the plan account for?

- **Existing seafood processors are expanding their Astoria facilities, outside of Astoria, due to worker shortages and infrastructure limitations.** Like with other industries, the seafood processing industry is going through a restructuring. Astoria remains a strategic location for commercial fishing fleets because proximity and contracts with the local fish processors.
- **The seafood processing industry is going through restructuring and may not be stable over time.** However, while this is a core industry, it may be less stable over time for a few reasons. An important challenge for fish processors located at the Port is having a stable workforce. While this work is well-paid, it is seasonal and physically demanding. The industry is trending toward more automation which over time will replace some of the manual labor. In addition, the Economic Opportunities Analysis points to a potential decline in seasonal commercial fishing, with a transition of existing fishery infrastructure to support other industries through post-secondary research opportunities.¹⁸
- **Lack of affordable housing will impede the city's ability to attract and retain its workforce.** Already, many of the city's planning efforts have uncovered that the lack of affordable housing for the County's workforce is limiting business expansion and recruitment.
- **The ability to manage cruise ship infrastructure demands may impact Astoria's ability to compete for passenger ships.** Per the Port's Strategic Business Plan, the Port's existing docking infrastructure cannot accommodate the larger ships that are forecast. Even if the number of ships remains stable, doubling the number of passengers will require changes in how the city provides transportation and services.¹⁹
- **An aging population and a shortage of labor is limiting industry cluster growth and expansion for North Coast fish processors and tourism industry.** In addition, the CEDs cited trucking and the construction trades are losing workers to retirement.²⁰
- **While planning for redevelopment and new industry, the plan needs to consider its resilience to acute and chronic economic supply shocks related to earthquakes and severe**

Direct competition from other ports or fish processing facilities is probably less of an issue than the shortage of seafood processing workers and the aging of Port infrastructure." - Port of Astoria Strategic Business Plan 2019

"Housing in Astoria is a huge barrier to attracting and maintaining professional caliber talent." - Advance Astoria Economic Opportunities

"In Oregon's coastal communities, lack of population growth coupled with the aging of the population, will impact the size of labor force available for sustained business development." - NW Oregon 2018-2023 Cohesive Economic Development Strategy

winds and flooding related to climate change. These events have the potential to displace residents, some of whom will never return to the region.²¹

How does the county’s economic recovery planning play into the waterfront plan?

- **The four overarching clusters identified in the recovery plan with immediate opportunity for development are timber and value-added forest products, fisheries and seafood processing, agriculture and food processing and tourism.**²² Several of these are relevant to opportunities at the waterfront, Astoria should consider the regional opportunities and support for development. Additional emerging clusters may also find support in development at this site.
- **Targeted services or recruitment can take advantage of already present industries such as in the marine sciences or in manufacturing.**
- **Marine infrastructure improvements are critical to the economic recovery of the region, including:**
 - **Pier-related business activity and the private development at Tongue Point.**²³ These projects will include cold storage; boat construction, repair and maintenance; marine construction and repair; log export shipping and barging; and expanded seafood processing. New projects will have to account for the effects of climate change, water resource constraints in the south may push agricultural production north and lead to increased demands on inland ports.
 - **Reliable, high speed internet access** to ensure continued growth in target industries, company relocation, or allowing for new workers from large metros to telework.²⁴

Manufacturing, one of the better paying occupations in NW Oregon, has the third highest number of jobs. One of NW Oregon’s 2018–2023 strategic areas of emphasis is expansion of the manufacturing sector.”- North Coast Economic Recovery Strategy

What role should the site play in the broader regional economy, and what are the implications for potential uses on the site?

The Astoria waterfront is at a crossroads of several major industries in Astoria and Clatsop County: tourism, fishing, and seafood processing. The site is also witnessing transition from being natural resource-based too accommodating more tourism and recreation.

Providing a space for Astoria’s batch production

This site has the potential to serve as a proving ground for businesses across several key “batches,” identified in the Advance Astoria Economic Development Strategy, including:

“The breweries and other related businesses can contribute to the City’s brand, and the City should work to strategically support what the brand is; what’s critical is an evolving attitude about the City’s identity, which is no longer fixed to timber and canning.” - Advance Astoria EOA

Craft Beverage and Fermentation

Astoria features several renowned breweries, most of which are clustered near downtown and on the waterfront adjacent to downtown. A western anchor brewery or distillery could be a viable option for this site, which could help to draw visitors to the site and develop a further brand identity, sense of place and provide extended shoulder season work for residents. A key challenge to this development type will be the provision of water to the site.

Microenterprises

A key challenge to starting a business is finding the right space. This site could provide spaces for businesses at multiple scales, potentially in the form of an incubator facility that could provide subsidized rents for startup and other businesses.

Seafood Processing

Seafood processing at the Port is expected to remain a core industry sector as commercial fishing remains strong. The Port's availability of deep-water piers and access to the Columbia River and Pacific Ocean meshes well with the trend toward industry consolidation of both the fishing fleets and fish processing. Fish processing is expected to remain a key industry on Port properties, especially given demand from China, which has increasingly demanded high value foods, including seafood sourced in the U.S.²⁵

Building upon the existing presence of Bornstein Seafoods, the site could provide additional seafood processing space, and additional retail spaces to showcase the area's bounty. The seafood exports industry will likely continue to be an economic driver from the port. Clustering related business at the site could take strategic advantage of existing uses.

Supporting Area Tourism

While tourism is critical to the economy, consideration should be taken for how the site can meet local residents' needs, at the city and regional level. *Uses that allow for* cultural and educational experiences may be an opportunity to leverage and expand existing resources to further develop a sense of place and capitalize on new tourism trends, including an expansion of festivals and special events. The site could provide a western anchor the to the Riverwalk, with other anchors including the Columbia River Maritime Museum in Astoria.²⁶

Providing Housing

Housing is a critical component to ensuring that Astoria remains competitive for new companies and residents.

Visitor Amenities

Recreational uses factor into the city and region's economic development toolkit. This site has the potential to provide recreational and service uses that make Astoria a pleasant place to live, including

"Tourism is essential for retailers, and probably is inevitable as well, but we don't want to become a monoculture of tourism; we want to be a good place to live that serves residents well." - Advance Astoria EOA

"Astoria's powerful sense of place is one of greatest single assets to economic development and must be maximally leveraged; sensitive cultivation of Astoria's brand, and linkages with façade and public realm improvements, signage and wayfinding projects, social media outreach and other placemaking efforts are important to future economic development." - Advance Astoria EOA

recreational pathways, access to marina infrastructure, gathering spaces, and outdoor eating areas.

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² North Coast Economic Strategy, 2020

³ Port of Astoria Strategic Business Plan, 2019

⁴ Advance Astoria EOA, 2017

⁵ Advance Astoria Economic Development Strategy 2017

⁶ NW Oregon 2018-2023 CEDS

⁷ NW Oregon 2018-2023 CEDS

⁸ Advance Astoria EOA, 2017

⁹ Advance Astoria EOA, 2017

¹⁰ North Coast Economic Recovery Strategy, 2020

¹¹ Civic Dossier, Civilis Consultants

¹² https://www.dailyastorian.com/news/local/astoria-food-hub-raises-700-000-for-sears-building/article_3d083840-8b5b-11eb-9f49-b7a5d5dba622.html

¹³ North Coast Economic Recovery Strategy, 2020

¹⁴ North Coast Economic Recovery Strategy, 2020

¹⁵ North Coast Economic Recovery Strategy, 2020

¹⁶ Port of Astoria Strategic Business Plan Update, 2019

¹⁷ Port of Astoria Strategic Business Plan Update, 2019

¹⁸ Advance Astoria EOA, 2017

¹⁹ Port of Astoria Strategic Business Plan, 2019

²⁰ NW Oregon 2018-2023 CEDS

²¹ NW Oregon 2018-2023 CEDS

²² North Coast Economic Recovery Strategy, 2020

²³ North Coast Economic Recovery Strategy, 2020

²⁴ Advance Astoria EOA, 2017

²⁵ Advance Astoria EOA, 2017

²⁶ 2018-2023 NW Oregon CEDS

Memo

Date: September 13, 2021

To: Calder Gillin, Walker | Macy

From: Craig Totten, PE, SE

Re: Port of Astoria Waterfront Master Plan

The following summarizes observations made during our site visit on August 4, 2021 to the three buildings included within the Master Plan. Also, our review of available information for each of the buildings.

Riverwalk Inn

Structure

The structure is constructed partially on-grade and partially elevated over water. It consists of light wood framing superstructure on a pile and timber cap substructure. The overall structure appears to be in Poor to Fair condition. Decay of load carrying structural elements and settlement of floors and walkways was observed at numerous locations throughout the building superstructure. However, at the time of visit there was no visible deterioration or settlement of the timber piles and bracing supporting the superstructure.

The building appears to have been constructed in three phases. The original construction parallels Hwy 101 and was constructed prior to 1972 (actual construction date unknown.) The southern portion of the N-S orientated leg was constructed circa 1972. The remaining northern portions were constructed circa 1976. Repair drawings, dated 1995, show strengthening of the central (N-S orientated) leg of the building with piles and a new buried concrete dead man. This strengthening appears to be related to concerns with slope stability and/or building movement.

Structural Considerations and Recommendations

A significant amount of repair and retrofit is required for the building superstructure. A detailed inspection to document the extend of repairs is recommended. While no visible distress was observed in the building substructure, a detailed inspection of the substructure is also recommended to verify the condition. Timber structures in marine environments often decay from the inside-out. Creosote and pressure treatment of timber provide very good protection for the surfaces, however, cut ends, bolt holes and surface damage can provide a pathway for water and insects to enter the more vulnerable centers of the timbers and deterioration can then progress with no visible indications on the surface until sudden failure of the timber occurs.

The costs and viability of repairs cannot be determined until comprehensive inspections are completed and the extents of the necessary repairs are fully understood.

Seismic Considerations

A change in use for this building to a higher risk category would trigger the requirement for a seismic upgrade. In addition to strengthening of the superstructure, upgrades to the pile supported foundations would be required that would involve significant in-water-work. Complicating the foundation retrofits, the soils along the waterfront are likely susceptible to seismic liquefaction and lateral spread. Ground improvements to mitigate liquefaction and lateral spread in an existing building are difficult and expensive to install.

Chinook Building

Structure

The superstructure consists of a mix of light wood framing and heavy timber with diagonals and tension rods visible. The substructure consists of heavy timbers supported on pile stubs that likely date from a previous dock in this location. The superstructure appears to be in Fair Condition with some settlement noted at isolated areas around the building and areas of decay likely in the vicinity of roof and wall leaks. The substructure appears to be in Fair to Poor Condition with several areas of decay, crushing and settlement visible.

No structural drawings were located for the building. The structure was reportedly moved to its current location from elsewhere on the Port's property where it was used for net storage and repair. As part of the move a second story was added within the exterior shell of the original construction. In its current location it is supported partially on-grade and partially over water.

Considerations and Recommendations

A 2019 inspection report by Domuspect Property Inspections LLC lists numerous areas of concern in both the superstructure and substructure. Many of these concerns may not affect the primary load carrying elements of the superstructure, however, much of the superstructure is concealed by architectural ceilings and finishes and therefore a full understanding of the critical structural load path is not possible without a detailed structural evaluation including the removal of select finishes. This detailed evaluation along with a detailed inspection of the critical structural elements is recommended to fully understand the extent of the required retrofits and repairs for the superstructure. The substructure has clear indications of structural decay and deterioration and a detailed evaluation is required to fully understand the condition and necessary repairs.

The costs and viability of repairs cannot be determined until comprehensive inspections are completed and the extents of the necessary repairs are fully understood.

Seismic Considerations - See Discussion For Riverwalk Inn

Bornstein Building

Structure

The structure consists of precast or tilt-up concrete walls with steel joists supporting the floor and roof. Foundations are supported by piles and concrete pile caps. The structure appears to be in Good condition. Light corrosion of the roof deck and joists over the processing area was observed however it does not appear to be a significant area of concern.



Architectural plans for the building dated 2006 were provided, however, structural drawings were not.

Structural Considerations and Recommendations

Future additions to the building should be constructed with seismic joints separating them from the existing building to avoid triggering seismic upgrades of the existing building.

Seismic Considerations

A change in use for this building to a higher risk category would trigger the requirement for a seismic upgrade. Code changes from 2006 are relatively small, however, some structural seismic retrofits to the building would likely be required. It is likely that the building piles were designed to mitigate seismic liquefaction and lateral spread effects.

Disclaimer

Our evaluation was based on limited site observations during a team walkthrough and our review of the documentation outlined above. It was assumed that the original structural drawings accurately depict existing conditions since it was not practical to verify member sizes and details during our site visit. The opinions we have presented are consistent with our best engineering judgment, but in no way warrant or guarantee the existing construction of the buildings, that concealed problems do not exist, or the future performance of the structural systems.



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01 | EXECUTIVE SUMMARY

SUMMARY

SITE OBSERVATION

The purpose of this phase of the Port of Astoria Master Plan is to conduct an existing conditions assessment of the Bornstein seafood processing plant, Astoria Riverwalk Inn, and Chinook buildings primarily through site observation. The review of existing documentation along with observation of the site and buildings will serve as the basis of this report.

BUILDING DESCRIPTION

The Bornstein building was built in 2005 as a new seafood processing plant. The primary materials are steel and concrete. The large open floor plan allows for the plant to process a wide range of different types of seafood.

The Astoria Riverwalk Inn appears to match the existing record drawings, however, the building has undergone multiple repairs over time and there are many instances of disrepair and unsafe areas of the building.

There are no record documents of the Chinook building since the original open frame structure was moved to its current location. The main first floor structure is a post and beam structure that does not appear to comply with current seismic detailing considerations. It has gone through a number of additions and renovations. It is currently uninhabited and is in extreme disrepair.

BUILDING SITE CONDITION

The Bornstein building appears to be in overall good condition as an actively

used Seafood processing plant. It appears to be maintained and capable or continuing operations for the foreseeable future.

The Riverwalk Inn and Chinook structures are built half on fill and half over the water, creating a range of complications with environmental, envelope, and structural concerns. Both structures have consistent signs of decay and moisture intrusion extending into the building envelopes floor, walls and roof systems.

SCOPE OF ASSESSMENT

Our evaluation was based on limited visual site observations during a team walk-through and our review of the available existing documentation. It was assumed that the original architectural drawings accurately depict existing conditions since it was not practical to verify wall assemblies, utilities and details during our site visit. The opinions we have presented are consistent with our best judgment, and therefore in no way warrant or guarantee the existing construction of the buildings, the extent to unsafe conditions, that concealed problems do not exist, or the future performance of the building systems. To determine the viability of these structures a more thorough series of invasive and destructive tests must be performed to rule out concerns and give a more accurate economic impact to potential solutions.



A: Building locations within the existing conditions assessment report.



02 | BORNSTEIN SEAFOOD

SITE HISTORY

The Bornstein seafood plant was built in 2005 and has been a vital part of Astoria's seafood industry.

CURRENT USE

The Bornstein Seafood processing plant is currently in use, with sales and distribution locally and internationally. Private fishing vessels off-load their catch along the north pier and is distributed to specific processing stations throughout the building. There are ideas from the owners group to expand the current building area to provide an educational and dining experience.

CONCLUSION

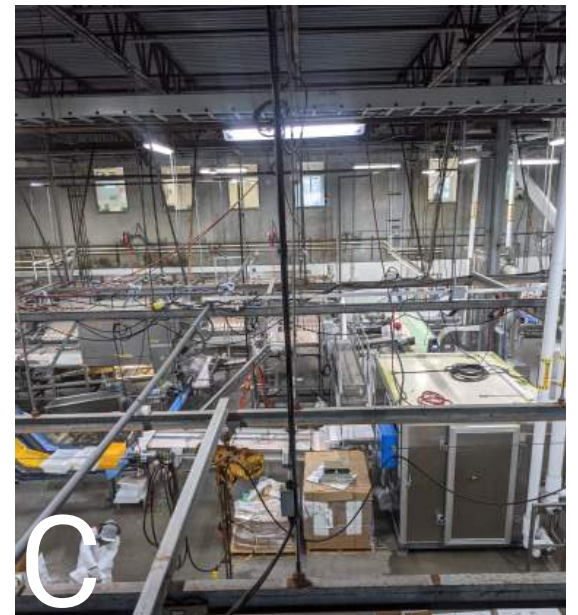
The Bornstein food and processing plant is operating well and appears to have a stable large site for future growth. Within the current zoning for the city of Astoria development code Article 2, it is allowable to have eating and drinking establishment with a view of the waterfront.

A planning study was conducted by the owners to expand the

facility. The goal is to create a more expansive experience for the public around the plant and the water front, including more generous dock areas that could support more public as well as private fishing fleets. Tours of the facility could be conducted with a dedicated circulation route through the facility along with areas dedicated to informal and professional educational offerings. The outdoor areas could be upgraded to provide recreation in proximity to a newly formed public fish market, restaurants and commercial areas. This design concept has yet to be implemented and is still of interest to the Bornstein owners.

RECOMMENDATION

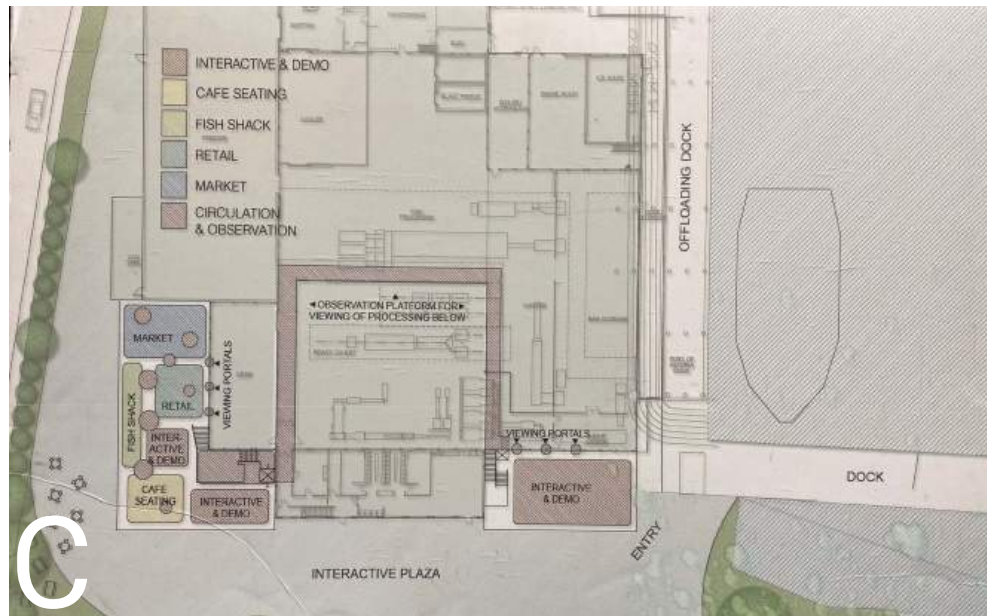
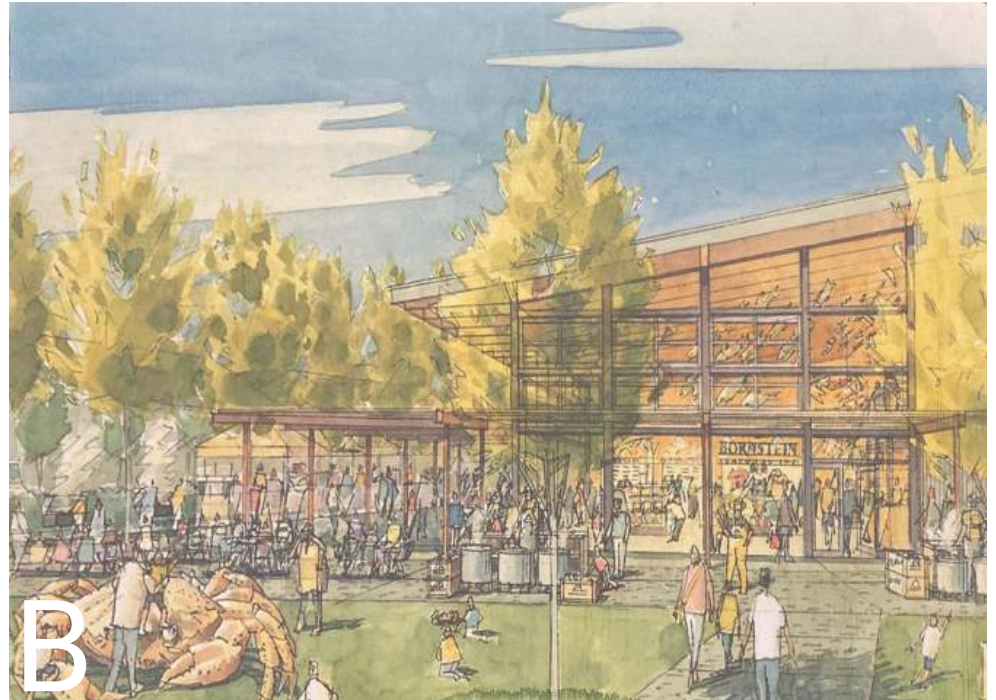
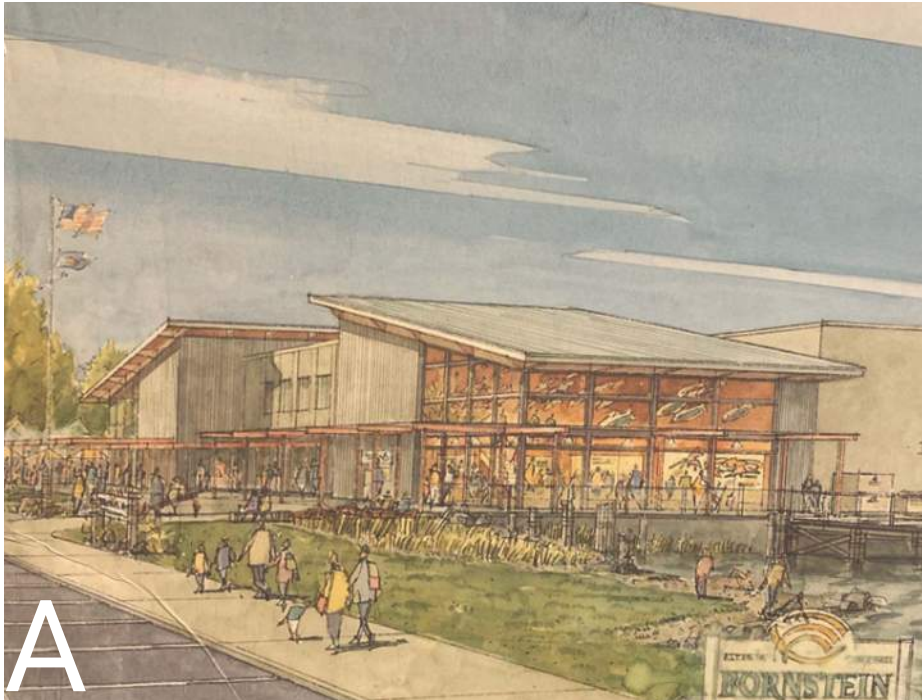
The Bornstein company, the local area and the community would all benefit from adding public amenities such as those previously studied such as an education, eating, and drinking establishments. These and other possible ideas will be studied in conjunction with the Master Plan in a comprehensive approach.



A: East elevation Bornstein main entrance
B: North West corner service area for the seafood waste process and loading
C: Elevated walk way overlooking seafood processing.



A: North Dock, boats unloading shrimp and reloading with ice to head back out to sea.
B: North Dock, Bornstein infrastructure to load and unload seafood from boats and into the processing plant.



A: 2004 perspective concept indicating building expansion with indoor, outdoor public amenity spaces with refurbished dock area, Architect Unknown
 B: 2004 perspective concept of new entry for the Bornstein commercial, restaurant and education addition. Architect Unknown
 C: 2004 Plan concept of building addition., Architect Unknown



03 | ASTORIA RIVERWALK INN

SITE HISTORY

The Astoria Riverwalk Inn was constructed in 1972. It is arranged with a single-loaded corridor open to the exterior environment to one side with rooms located adjacent. The original building had 87 rooms to rent with each room having a balcony overlooking the water. An additional 39 rooms added in 1976. The majority of the structure is located over the water on a series of wood piers. At the time of construction this was not an environmental concern, today this poses many challenges.

CURRENT USE

The Astoria Riverwalk Inn is currently an operational motel. It has 126 rooms. Not all rooms are available for use due to safety concerns.

The motel has a long list of deferred maintenance issues with decay and settling foundation conditions that are causing failures for the building. There are long stretches of failing gutters not diverting water away from the building, rusted flashing, and splash guards. Some rooms have holes in the floor and flexing floors that are vulnerable to failure due to moisture and decay. The transitions from the grade to floor

level show concrete sinking and settling in these areas. Large structural beams around elevated walkways show visible decay.

CONCLUSION

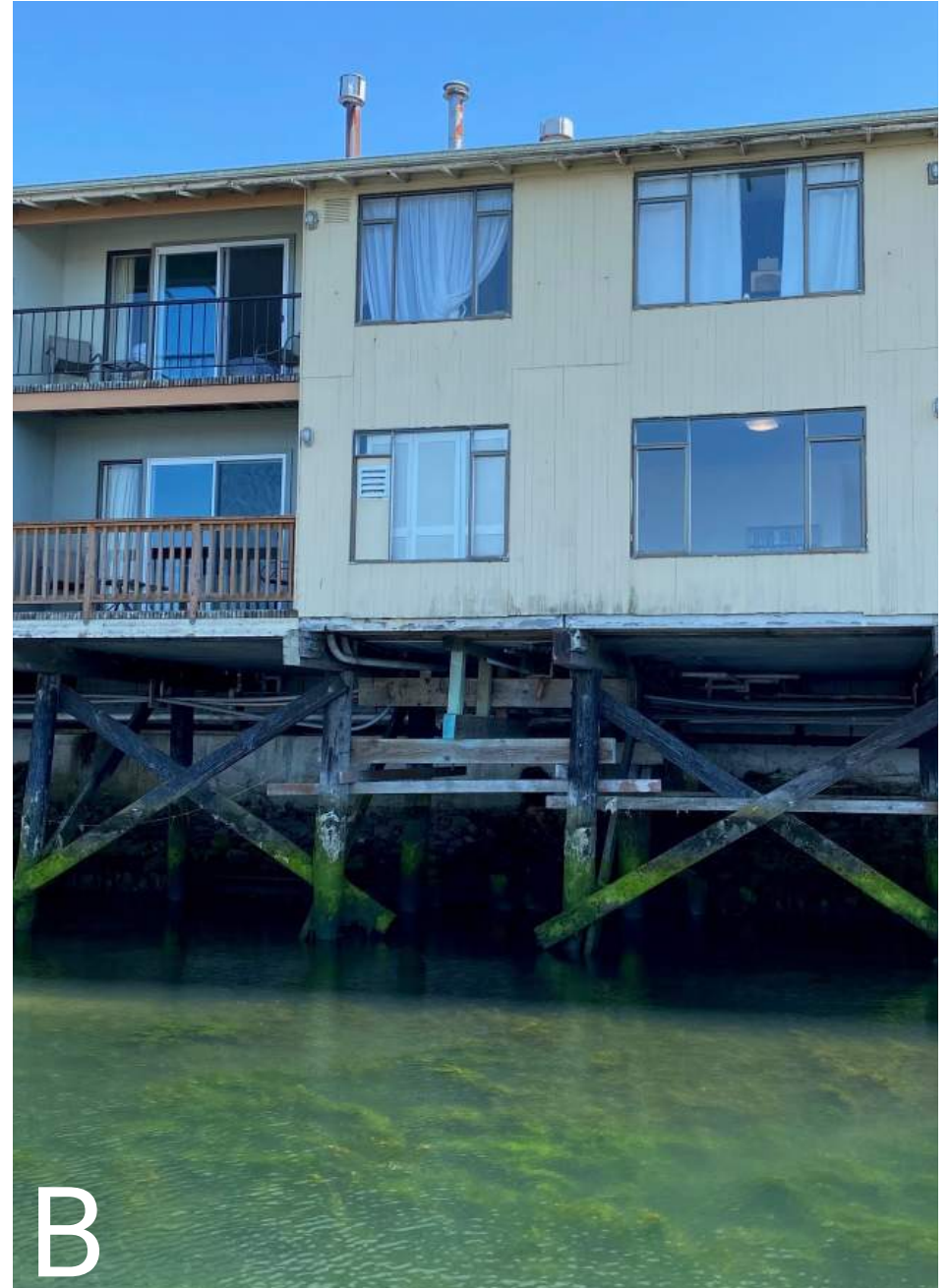
At our site walk we observed numerous health, safety, fire code and accessibility issues were present. There were also operational concerns with the utilities. Without significant rehabilitation or renovation, the building will soon fall into disrepair.

RECOMMENDATION

The motel provides a unique experience with every room having a water view. It is unclear if building a new structure over the water is viable under current code, and therefore a more extensive study is needed. One option would be to do a large renovation to maintain the viability of the site. Overhauling the support structure would be complicated and expensive, may be less costly to build a new structure, with the prospect of a new configuration along with adding new and more tailored program elements.



A



B



C

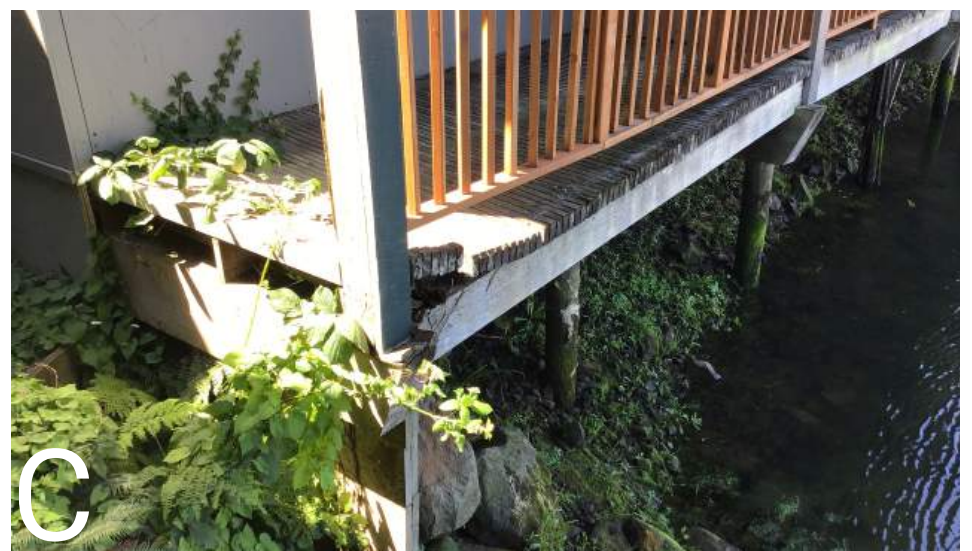
A: The original 56 unit built in 1972, showing large portions of gutters missing, decaying exposed structure, failing paint, and broken wood railings in many locations.
B: Laundry and office built over the water with signs of moisture and decay. Unsatisfactory repairs to the foundation pilings with unsecured and irregular timber layout.
C: West expansion showing missing siding, failing paint, and gutters that will cause moisture intrusion issues in the building envelope.



A: Foundation settlement has caused some rooms to be unsafe.



B



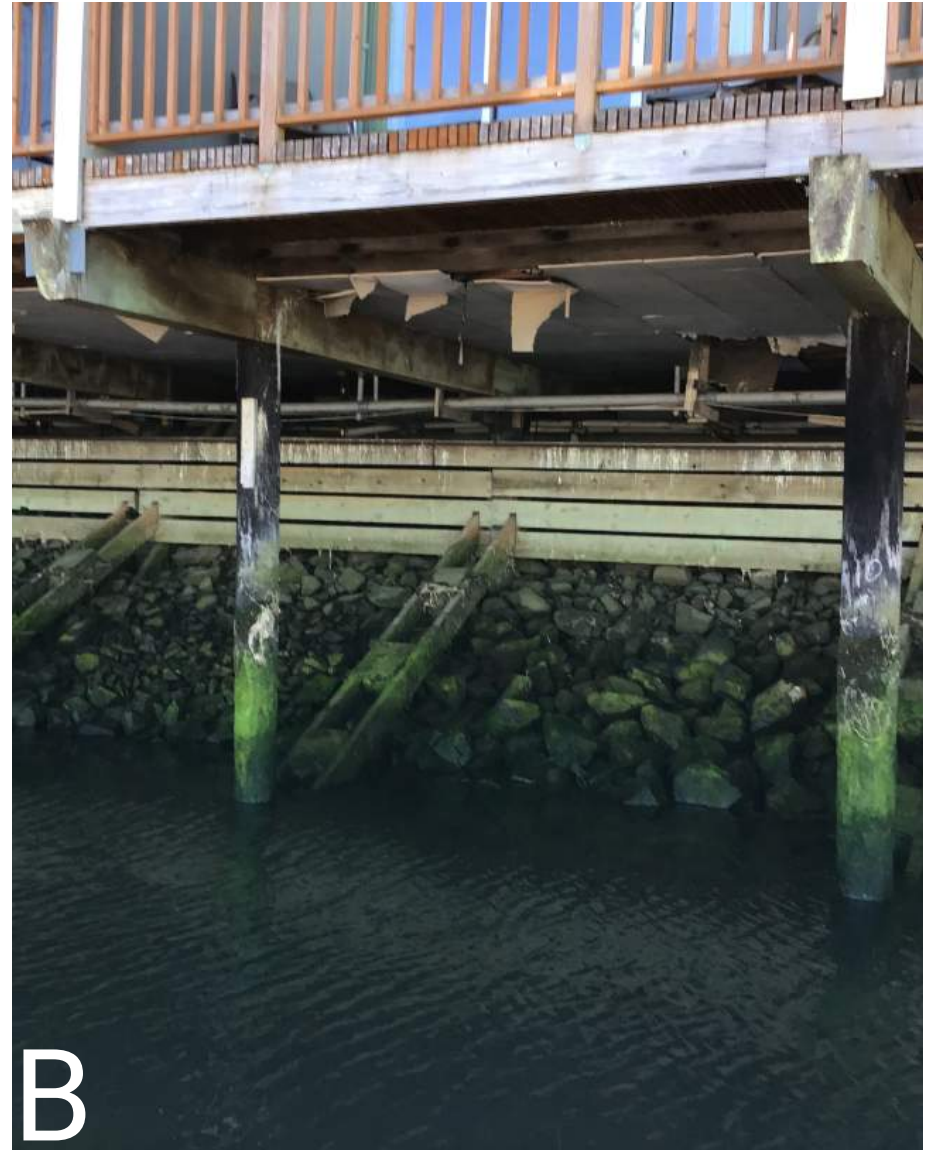
B: Large sections of fascia board and gutters are missing on the building causing large amounts of moisture issues and deteriorating railings.

This photo indicates three different railings for the balconys and different heights causing safety issues.

C: Foundation settlement has caused the balcony to be in an unsafe position.



- A: Utility room has moisture issues and inadequate ventilation for the space.
- B: Hole in concrete floor exposed to the exterior below
- C: Settling concrete floor causing trip hazards at the door thresholds
- D: Floor material chipped away and crumbling around the exposed hole in the floor.



A: Piling and foundation structure has a mixture of new and old timber supporting the building; ceiling tiles are deteriorated, peeling apart and causing moisture intrusion on underside of the floor.
B: Pile foundation with marine growth evident and indications of newly replaced pressure treated beams above.



A: Visual beam decay and crushed wood fiber at the primary metal connection
B: Visual corner column decay at beam and porch connection



04 CHINOOK BUILDING

SITE HISTORY

The original construction date of the Chinook building is unknown. Its original location was at the north west end of the pier and it was used as a fishing net drying structure. In the early 1980's the structure was moved to its current location and enclosed to become a mixed-use commercial use building. For the local community and visitors, the Chinook building became a gathering spot for many activities. This place provided a public fish cleaning station, markets for buying and selling, and a restaurant.

CURRENT USE

Currently the Chinook building is vacant. The building has been empty since November of 2020. The building has suffered from a long life near salt water and deferred maintenance. The elevator is in disrepair, there are leaking pipes, and the restrooms are dismantled. Individuals from the city expressed interest in rehabilitating the structure so the original tenants can move back in as the location provides essential needs for the local and tourist community.

CONCLUSION

Our walk-through revealed extensive challenges that indicate the building will need a full renovation of the envelope, structural assessment and repair. The mechanical, electrical and plumbing systems require upgrade and there are numerous health, safety, and fire code issues are present. The building no longer meets accessibility requirements.

RECOMMENDATION

The building would likely require extensive renovations, and at this point it could be less expensive to demolish the current building and build new rather than work around the poor existing conditions. Like the Riverwalk Inn, it is unclear if building a new structure over the water is possible under current code, and therefore a more extensive study is needed. A new structure would allow for alternative program elements with a greater range of possible uses aimed at the needs of the community.



A: West elevation over the water with crane to unload fishing boats and equipment.
B: South elevation (left) shows 1980s construction removed and rehabilitated, (right) is 1980s renovations showing deteriorated gutters, flashing, and drip edges that help to keep the building envelope dry.



A: Pier foundation elements indicate possible failures in many locations.

B: Decaying pier foundation under the Chinook building, some areas do not have continuous load paths to piles with minimal connections.

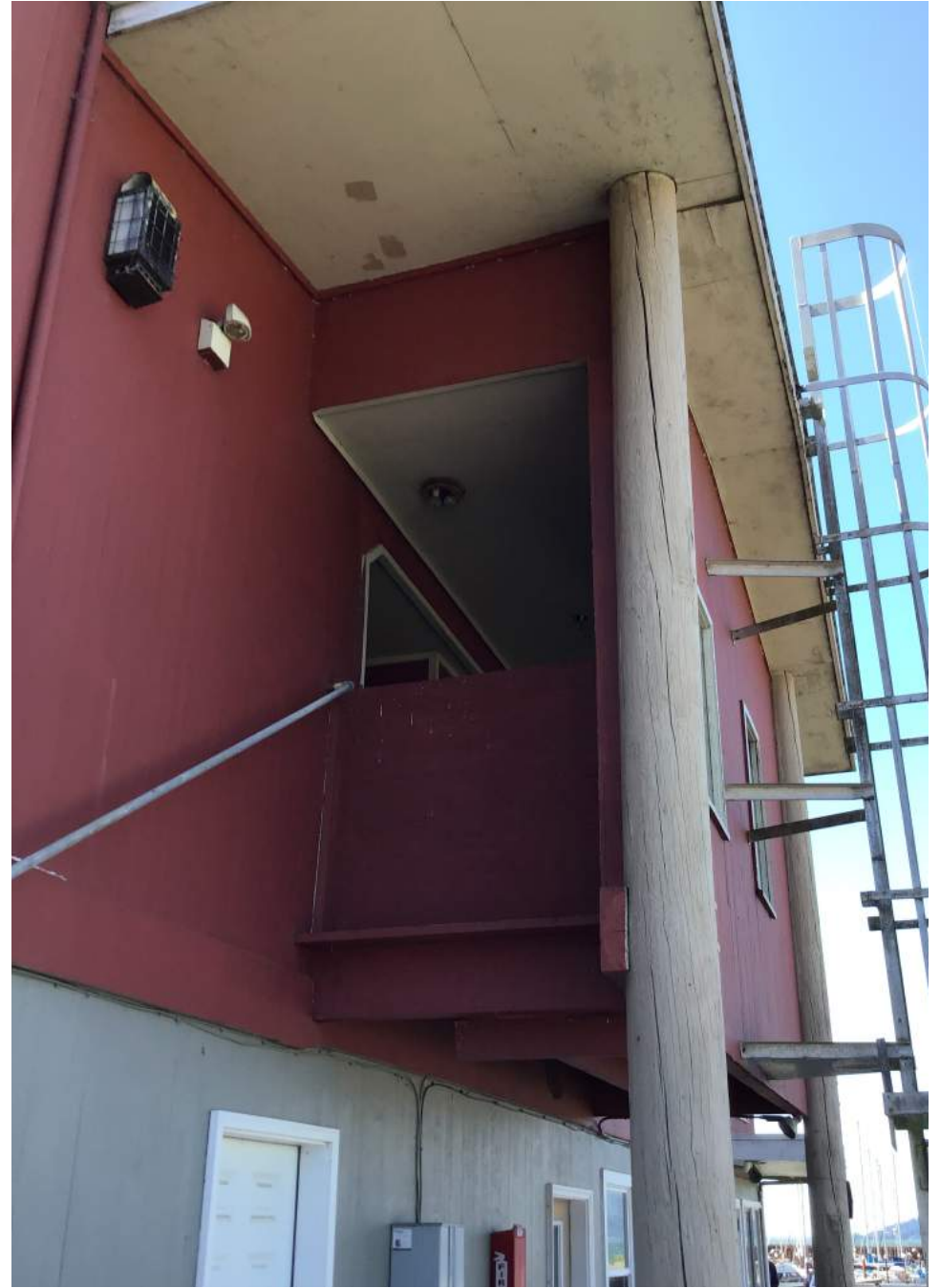
C: Visual decaying pile foundation with cross bracing fully detached is an example of long term deferred maintenance and decay



A: Typical wall construction (2x4 walls 24" O.C. with Fiberglass batt insulation)
B: Typical roof construction (2x12 joists 24" O.C. with Fiberglass batt insulation)



A: Nonoperational elevator
B: Bathroom in disrepair with failing fixtures
C: Typical Bathroom stall



A: Typical primary beam connection, loose and potentially unsafe structural system.
B: Egress exit leading to no longer existing stairs causing a life and safety and unsafe egress issue.

Civil / utilities

Infrastructure Assessment

Astoria Waterfront Master Plan

Prepared for: City of Astoria

Prepared by: Wyatt Morris, PE

Project Engineer: Matt Keenan, PE

January 2022 | KPFF Project #2100124

KPFF'S COMMITMENT TO SUSTAINABILITY

As a member of the US Green Building Council, a sustaining member of Oregon Natural Step, and a member of the Sustainable Products Purchasers Coalition, KPFF is committed to the practice of sustainable design and the use of sustainable materials in our work.

When hardcopy reports are provided by KPFF, they are prepared using recycled and recyclable materials, reflecting KPFF's commitment to using sustainable practices and methods in all of our products.

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 Utility Maps

Introduction

The Port of Astoria has contracted with the design team to create a set of comprehensive master plan recommendations and analyses that will provide a complete existing conditions evaluation in support of the Port of Astoria Waterfront Master Plan project. KPFF used existing condition maps and reports provided by the Port.

The study area consists of a portion of the Astoria Riverwalk between Bay Street and Portway Street, north of the Oregon Coast Highway and west of the Astoria-Megler Bridge crossing the Columbia River. The study also consists of Pier 1 of the Port of Astoria and the accompanying marina infrastructure, including the west mooring basin. There are 6 existing buildings within the study area and multiple parking areas.

FIGURE 1: Master Plan Site Layout



Access and Constraints

The site has access from the Oregon Coast Highway (HW-101) via 3 streets, including Portway Street, Basin Street, and Bay Street. Access to the area is also available from the west via Gateway Avenue and Industry Street. Pedestrian and bicycle access is also a key feature of the area with the Astoria Riverwalk Multiuse path running through the site adjacent to a dead-end BNSF railway spur. The rail line ends just west of the study area and serves a single business, meaning rail traffic can be assumed to be infrequent.

Ingress and egress via HW-101 is convenient from the signalized intersections of Portway Street and Basin Street. Both are 2-lane streets connecting into the 4-lane HW-101.

Utility Assessment

The information below provides a brief description of the sizes, layout, and availability of critical utilities for the Astoria Waterfront district. Data was taken from utility posters provided by the Port of Astoria.

Domestic Water

Water service is currently available throughout the study area in trunk sizes of 6-8 inches. The main water source is a 12-inch cast-iron main in HW-101. Three main connections are made to the site from the 12-inch main line, two 8-inch lines, and one 6-inch. Each water connection from the 12-inch in HW-101 appears to be non-lopped, dead-end lines. The 8-inch line on the west side of the study area is looped with a 6-inch connection from the west, which also stems from HW-101.

The Pier 1 area is fed with an 8-inch line that runs the length of the pier. This line serves five fire hydrants, three of which are within the pier area, and the services to each of the boat slips, ranging from 4-inches down to 1-inch.

It is our judgment that the sizes of lines are sufficient for future development. However, the system would be healthier as a whole if the system was updated to be looped. This is done to avoid water stagnation in pipes, aid in increasing potential fire flow, sustaining water quality, and reducing pipe corrosion.

Storm Water

The storm system in the study area has five main basins, each with one or multiple discharges into the Columbia River. The main discharge points include a 24-inch PVC, 16-inch corrugated metal pipe, a 21-inch corrugated metal pipe, and five others of unknown size and material. In order to ensure sufficient capacity is met, these lines with unknown sizes and material should be scoped and investigated. The age and condition of each of these discharges is unknown.

One 24-inch line coming from HW-101 and collecting drainage from the ramp for the Astoria-Megler bridge discharges through the Waterfront site, showing a discharge point underneath the Astoria Riverfront Inn. No onsite drainage is collected by this line to the best of our knowledge.

Based on the maps provided, there appear to be several catch basins that don't connect or drain to a storm main. It is unknown if these basins have a history of flooding. If these catch basins are infiltration or evaporation sumps, we recommend that any new developments include storm improvements to collect and treat/discharge these basins.

The western area of the Astoria Waterfront district, which is outside of the study area, appears to have a large regional stormwater facility, consisting of a large pretreatment forebay and settling pond, followed by 4 parallel vegetated biofiltration swales. The stormwater is pumped to the stormwater facility via 3 force mains. The capacity of the storm facility is not known, any additional treatment capacity should be identified and investigated for use within the study area. If no capacity is identified, a similar regional facility can be planned for an area within the study area, as there appear to be potential under-utilized areas within the site.

Sanitary Sewer

The Astoria Waterfront sanitary system is served by several force mains serving the far ends of the piers. At least 4 pump stations are existing in the study area, each of them leading to one of two trunks heading out to the main trunk in HW-101.

The first collection basin discharges into the HW-101 trunk near the bridge on/off ramp via a 10-inch line collecting the east portion of the site. The second is a 15-inch line connecting underneath Portway Street. It appears that this area is necked down near the intersection of Portway and HW-101 to a 12-inch line. It is unclear if this would limit the capacity of the district, but it is recommended that to allow for any future build-out that this line be verified and increased to at least a 15-inch line.

Overall, the sizes of the existing sanitary system appear to be large enough to accommodate future development, however, it is recommended to collect data on each of the pump stations and ensure each is sized properly and insufficient working condition.

Franchise Utilities

Overhead Power

Power lines are served from HW-101, with service mainly coming via power poles in Portway Street. The existing power poles along Portway Street diagonally cross the street with large transmission lines serving Pier 1 and presumably most of the buildings within the study area, while the remaining few buildings are being served from poles at the east end of the site between the Chinook Building and the Red Building. If future development is planned, undergrounding these utilizes when appropriate would be recommended.

Gas Lines

Three main gas line trunks are serving the area. The largest is a 4-inch line just east of Basin Street. There is also a 2-inch line stemming out of the Astoria-Megler Bridge that currently serves the Astoria Riverfront Inn. Finally, there is a 2-inch line from Portway street that serves Pier 1 and the buildings east of the study area. Each of these lines have existing crossings underneath the BNSF rail line.

KPFF Storm Damage Assessment

In 2018, KPFF finalized a storm damage assessment regarding the damage that occurred between December 6, 2015, and December 23, 2015. KPFF conducted site investigations of 14 areas within the Port of Astoria that sustained damage from those events and provided estimates for the cost of the repairs.

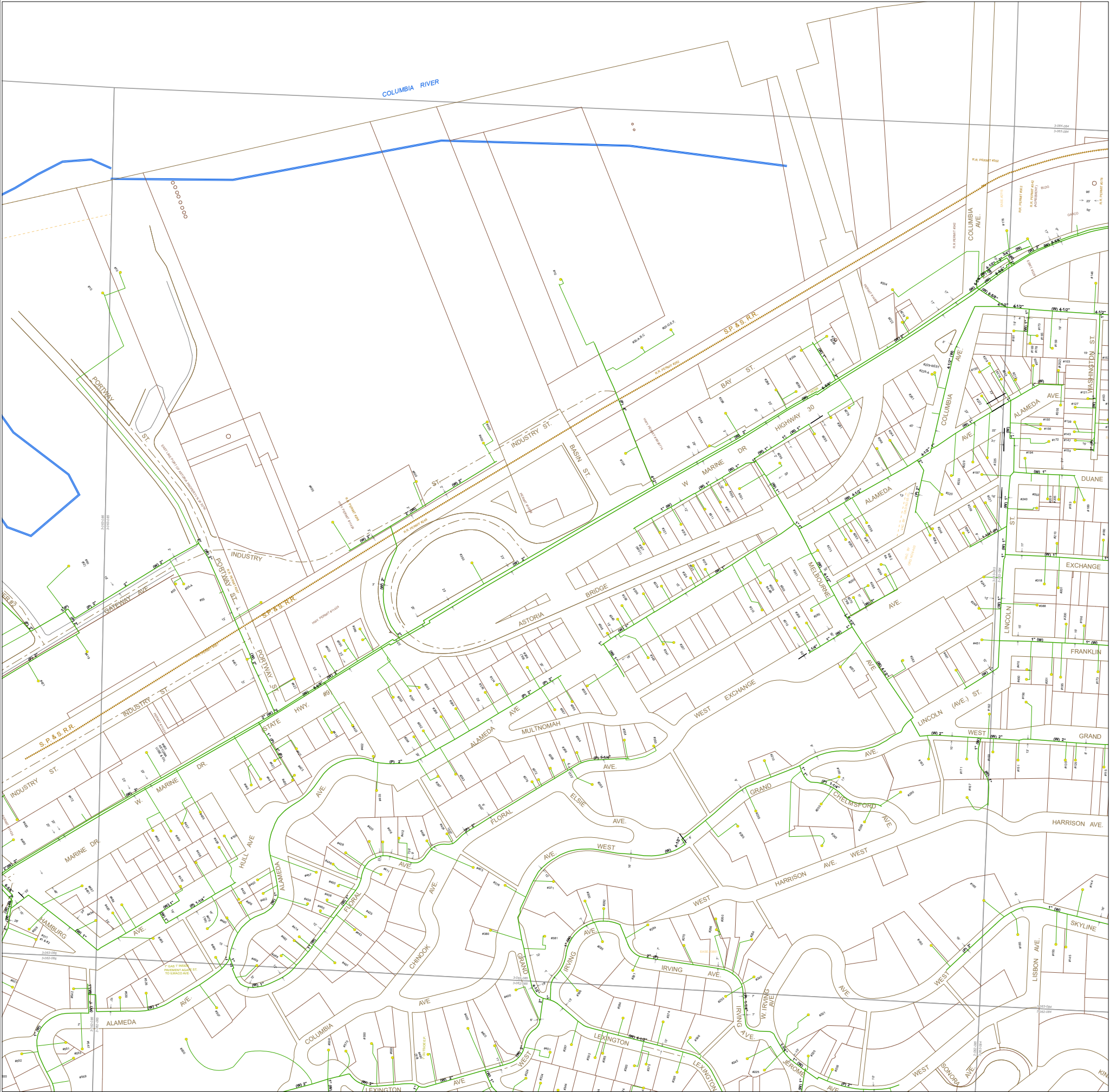
Damaged sites within the study area and the status of repairs are listed below:

- West Mooring Basin. Winds and storm surge caused damage to floating docks and piling. Repairs have been completed.
- Bornstein Seafoods Building. Winds and storm surge washed out riprap and fill material, undermining the north end of the building. Repair status unknown.
- Site 16, East of Red building. The storm surge washed away fill and asphalt. Repair status unknown.
- Pier 1 North Face Seawall/Embankment. The storm surge caused a washout of the seawall and embankment along the north face of Pier 1 behind the elevated dock. Repair status unknown.

2100124- sb

Appendix

Utility Maps



NW Natural does not warrant the accuracy of this map.
 It should be used for informational purposes only.
 For a current and exact location of facilities,
 call your local utility locate center.

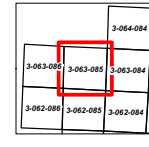


NW Natural
 250 SW Taylor Street, Portland, Oregon 97204
 (503) 226-4211



Legend

- Meter Location w/Address
- Gas Pipe
- City Limit
- Plat Index



Legal Location: T08N R09W Sec7 SW
 State: OREGON
 County: CLATSOP
 City: ASTORIA
 Wallmap: ASTORIA

Plat ID: 3-063-085
 Plot Date: 2/2/2021



Legend

| | | |
|---|---|---|
| Water Points Air Release Valve Backflow Preventers Blowoff Valves Fire Control Stand Pipe Water Fire Hydrants Water Meters Water Pressure Reducer Water Sample Points Water Vaults Water Valves | Sewer Points Sewer Cleanouts Sewer Manholes Sewer Pump Stations | Storm Points Access Point Box Cap Discharge Point Input Misc. Monitoring Site Overflow Pump Station Roof Drain Separator Storm Catch Basins Storm Cleanouts Storm Manholes |
| Water Lines 0.75 1 1.25 1.5 2 3 4 6 8 10 12 16 18 | Sewer Lines Abandoned Cleanout Force Main Gravity Main Outfall Service | Storm Lines Abandoned Culvert FM Force Main Main ODOT Main Outfall Overflow Roof Drain Swale Trench Drain Unknown Lateral Trench |

ASTORIA WATERFRONT - UTILITY EXHIBIT

(proposed)

LEGEND

| | |
|--|-------------------------|
| | NEW SANITARY |
| | NEW FORCE MAIN |
| | NEW STORM |
| | NEW WATER |
| | NEW FIBER |
| | EXIST. SANITARY |
| | EXIST. FORCE MAIN |
| | EXIST. STORM |
| | EXIST. WATER |
| | EXIST. OVERHEAD UTILITY |

NOTE: UTILITY OWNERSHIP TRANSITION LOCATIONS BETWEEN CITY AND PORT ARE NOT SHOWN IN THIS EXHIBIT



gateway ave

industry st

highway 101

basin st

bay st



TECHNICAL MEMORANDUM

DATE: September 13, 2021

TO: Calder Gillin | Walker Macy

FROM: Rochelle Starrett, Reah Flisakowski | DKS

SUBJECT: Port of Astoria Waterfront Master Plan:
Background and Existing Conditions Memo

Project #21173-000

The following sections summarize the transportation conditions for the Port of Astoria Waterfront Master Plan study area.

VEHICLE CONDITIONS

Direct access to the study area is currently provided at Portway Street and Basin Street although Hamburg Avenue also connects to Gateway Avenue and Industry Street to provide access to the study area from the west. Bay Street also provides limited access to select destinations within the study area. All streets within the study area are currently two-lanes; additional characteristics of each street are summarized in Table 1.

TABLE 1: SUMMARY OF EXISTING ROADWAY CHARACTERISTICS

| STREET | 2021 PM PEAK VOLUME ¹ | 2021 ADT ¹ | TRAFFIC CONTROL AT WEST MARINE DRIVE | CITY FUNCTIONAL CLASSIFICATION |
|-----------------|----------------------------------|-----------------------|--------------------------------------|--|
| PORTWAY STREET | 170 | 1,700 | Signal | Commercial/Industrial Collector Street |
| BASIN STREET | 190 | 1,900 | Signal | Mixed-Use Local Street |
| HAMBURG AVENUE | 205 | 2,050 | Two-Way Stop Control | Commercial/Industrial Collector Street |
| BAY STREET | No Data Available | | N/A | Mixed-Use Local Street |
| INDUSTRY STREET | No Data Available | | N/A | Commercial/Industrial Local Street |
| GATEWAY AVENUE | No Data Available | | N/A | Commercial/Industrial Collector Street |

1. 2021 traffic volumes estimated using 2018 traffic counts and projected 2035 traffic volumes

Existing and future traffic conditions were previously evaluated in both the Astoria TSP and the Astoria Uniontown Masterplan. No existing deficiencies were identified. However, by 2035, the minor street approach at the intersection of West Marine Drive/Hamburg Avenue and the intersection of West Marine Drive/US 101 Bridge will experience moderate congestion¹. All direct access points to the study area are expected to operate with sufficient capacity through 2035.

Existing roadway safety along West Marine Drive and intersecting streets was also evaluated as part of the Astoria Uniontown Master Plan using crash data provided by ODOT for January 2012 to December 2016. The following safety concerns were identified through the safety analysis:

- Basin Street experiences a relatively high volume of rear-end crashes, particularly for westbound traffic which could be attributed to the proximity to the US 101 bridge.
- One fatality occurred at West Marine Drive/Portway Street when a vehicle turned left at dusk in front of oncoming traffic.
- The segment of West Marine Drive between Basin Street and Columbia Avenue experiences a relatively high volume of crashes, accounting for nearly half of the segment crashes on West Marine Drive. However, this segment includes the intersection of Bay Street/West Marine Drive, which was not evaluated separately, and crashes at this intersection account for over half of the crashes occurring on this segment.

Projects identified in the Astoria TSP within the study area are summarized in Table 2.

TABLE 2: ASTORIA TSP MOTOR VEHICLE PROJECTS

| ID | PROJECT | DESCRIPTION | FUNDING SCENARIO |
|-----|---|--|-------------------------------------|
| D2 | US 101-US 30 Coordinated Signal Timing Plans: Portway Street to Columbia Avenue/Bond Street | Optimize the existing traffic signals by implementing coordinated signal timing plans, upgrading traffic signal controllers or communication infrastructure or cabinets. | Medium-Term Likely Funded |
| D19 | US 101/Hamburg Avenue Capacity Enhancement | Restrict access to left-in, right-in, right-out only or install a traffic signal and allow full access. | Long-Term Phase 3 Aspirational Plan |
| D24 | Industry Street Extension: Basin Street to Bay Street | Extend Industry Street from Basin Street to the Bay Street extension as a Mixed-use local street. | Long-Term Phase 1 Likely Funded |
| D25 | Bay Street Extension: North of West Marine Drive to Industry Extension | Extend Bay Street to the Industry Street extension as a Mixed-use local street. | Long-Term Phase 1 Likely Funded |

¹ West Marine Drive/Hamburg Avenue will exceed its mobility target while West Marine Drive/US 101 will approach its mobility target for both summer and average weekday traffic conditions

| ID | PROJECT | DESCRIPTION | FUNDING SCENARIO |
|-----|---|---|-------------------------------------|
| D34 | Portway Street Capacity Enhancement: West Marine Drive to Industry Street | Improve to a Commercial/Industrial collector street cross-section. Move Portway Street centerline to the west to accommodate trucks making westbound right turns; requires right-of-way acquisition from parcel at northwest corner of intersection. Modify the approach to US 101 to include separate left and right turn lanes. | Long-Term Phase 3 Aspirational Plan |
| D35 | Bay Street Upgrade: West Marine Drive to northern terminus | Improve to a Mixed-use local street cross section. | Long-Term Phase 3 Aspirational Plan |

PARKING

The existing on- and off-street parking supply was reviewed using Google Maps to identify any usage restrictions. The Port of Astoria currently manages two fee parking lots with approximately 200 spaces near the waterfront within the study area, including the lot located immediately west of Basin Street and the lot located immediately north of Gateway Avenue and east of Portway Street, adjacent to the Astoria Riverwalk Inn. Time-restricted parking, typically two-hour parking, is also available north of Industry Street between private parking for the Astoria Riverwalk Inn and Basin Street, although business tenants may also use this parking with a valid permit. Most other parking in the area is likely restricted to use for specific business patrons although this could not be verified at all locations within the study area.

The Port of Astoria collects hourly parking data at their fee parking lots. Parking demand is the highest in the month of August when it can be over three times higher compared to July or September. Parking demand generally remains high throughout the summer tourism season, roughly May through September. During the peak summer tourism season, parking demand is highest during the AM peak which tends to occur between the hours of 5 and 7 AM. Parking demand drops significantly between October and April, and peak demand is spread throughout the middle of the day rather than concentrated in one specific time period.

PEDESTRIAN AND BICYCLE CONDITIONS

Existing sidewalks are intermittent throughout the study area. Where provided, they tend to be curb-tight with minimal landscaping. Existing trails, like the Astoria Riverwalk, provide the best pedestrian connections through the study area by creating a direct and wide travel path for pedestrians. Complete, curb-tight sidewalks are also provided on the north side of West Marine Drive throughout the study area, although accessing destinations on this street can be challenging for pedestrians due to existing sidewalk gaps. Portway Street is currently missing sidewalks on both sides, sidewalks are only partially completed on the east side of Basin Street, and sidewalks are missing on the east side of Hamburg Avenue between Industry Street/Astoria Riverwalk Trail and West Marine Drive. Although sidewalks are provided on both sides of Bay Street, there is no

direct connection between Bay Street and the Astoria Riverwalk Trail that does not require pedestrians to walk through a street/parking lot.

On-street bicycle facilities are limited within the study area; today, there is only a northbound bicycle lane on Portway Street to the north of Industry Street. However, streets within the study area tend to be low-volume, providing a relatively comfortable shared street environment. The Astoria Riverwalk can also accommodate bicyclists for a comfortable and safe, off-street bicycle facility, providing the best access to the study area for cyclists. Westbound bicycle lanes do exist on West Marine Drive which could provide an alternative access route for cyclists. However, these lanes are typically narrow and can disappear prior to intersections, so they are not suitable for cyclists of all ages and abilities.

The Astoria TSP notes that the Riverwalk trail is popular with pedestrians and bicyclists, but no specific usage information is available. This trail provides connections to downtown Astoria, the piers, and other destinations along Astoria’s waterfront. For cyclists, the trail also connects to US 101 to the west and the Oregon Coast Bike Route.

The following safety concerns were also identified for pedestrians and bicyclists in the Astoria Uniontown Master Plan:

- Three pedestrian crashes occurred at West Marine Drive/Bay Street between 2012 and 2016, where an RRFB is currently installed.
- The intersections of West Marine Drive/Portway Street and West Marine Drive/Basin Street each recorded one pedestrian crash between 2012 and 2016.
- Three crashes involved bicyclists between 2012 and 2016, including one crash each at the intersections of West Marine Drive/Hamburg Avenue, West Marine Drive/Basin Street, and West Marine Drive/Bay Street, locations where on-street bike lanes are provided for westbound West Marine Drive.

Projects identified in the Astoria TSP within the study area are summarized in Table 3.

TABLE 3: ASTORIA TSP PEDESTRIAN AND BICYCLE PROJECTS

| ID | PROJECT | DESCRIPTION | FUNDING SCENARIO |
|-----|--|---|---------------------------------|
| CR1 | West Marine Drive and Bay Street Crossing Enhancements | Upgrade existing crossing to the highest level pedestrian actuated beacon approved by ODOT. Consider restricting parking near crossing to improve visibility. | Long-Term Phase 1 Likely Funded |
| B50 | West Marine Drive Bike Lanes: Bay Street to 6 th Street | Re-stripe roadway to include bike lanes. | Short-Term Likely Funded |
| B52 | West Marine Drive Bike Lanes: Roundabout to Hamburg Avenue | Re-stripe roadway to include bike lanes. | Short-Term Likely Funded |

TRANSIT CONDITIONS

Transit service is provided in the study area by the Sunset Empire Transportation District which provides both local service and connections to other regional destinations. Although there are no existing stops within the study area, the Pacific Connector route stops immediately east of the study area at the West Marine Drive/Columbia Avenue/Bond Street intersection at the Holiday Inn. This route connects Cannon Beach and Astoria with five daily trips on both Saturday and Sunday. The Sunset Empire Transportation District also offers paratransit and dial-a-ride services for individuals who are unable to access traditional fixed route transit services.

The Astoria Riverfront Trolley also runs in the study area between Memorial Day and Labor Day between noon and 6 PM. The Riverfront Trolley has dedicated stops at the Astoria Riverwalk Inn and near Bay Street at the Maritime Memorial. Visitors may also flag the trolley between stops. The Riverfront Trolley travels east from the study area to downtown Astoria. No ridership information is available; however, this is likely a popular tourist attraction and offers a convenient way to travel between the study area and downtown Astoria during the summer months.

TECHNICAL MEMORANDUM

DATE: December 2, 2021

TO: Calder Gillin | Walker Macy

FROM: Reah Flisakowski | DKS

SUBJECT: Port of Astoria Waterfront Master Plan:
Background Transportation Information

Project #21173-000

The following sections provide background transportation information for the Port of Astoria Waterfront Master Plan study area.

UNIONTOWN REBORN PLANNED IMPROVEMENTS

Projects identified in the Uniontown Reborn Plan within the study area are summarized below. The Plan has not been adopted by the City of Astoria and the improvements do not have identified funding or schedule for construction.

- Reconstruct W Marine Drive between Smith Point Roundabout and the Columbia Avenue/West Bond intersection to provide a four-lane cross-section with two westbound lanes, one eastbound lane, intermittent center two-way left turn lane, bicycle lanes, and sidewalks. Additional improvements include landscaping, ADA ramps at intersections, street lighting and transit stop amenities along the section where feasible.



- Bay Street intersection conceptual design includes:
 - Eastbound left turn onto Bay Street allowed until TSP project to connect Basin Street and Bay Street is completed
 - Add enhanced pedestrian crossing and center median refuge
- Add enhanced pedestrian crossings at the following locations:
 - Bay Street (described above)
 - West of Bay Street intersection to align with existing trail connection south to Melbourne Avenue
 - West leg of the Portway Street/W Marine Drive intersection

US 101-US 30/W MARINE DRIVE OPERATIONS

Future 2035 traffic operations were analyzed for the West Marine Drive corridor with forecasted traffic volumes that represent a peak hour during summer-demand conditions. The operations were evaluated with the recommended cross-section: two westbound lanes, one eastbound lane, intermittent center two-way left turn lane between Smith Point Roundabout and the Columbia Avenue/West Bond intersection.

The future operation findings are summarized below.

- Most intersections would operate with moderate delay at volume to capacity (v/c) ratio of 0.65 or better during the peak hour.
- The ODOT mobility target would be exceeded at the signalized Columbia Avenue/Bond Street/W Marine Drive intersection (0.85 versus 0.89 v/c).
 - The increased v/c ratio is the result of reducing eastbound and westbound through traffic to one lane in each direction east of the intersection (separate project from the Uniontown Reborn Plan) in combination with the existing complex, multiapproach intersection configuration.
 - Mitigations should consider a longer signal cycle length, left turn lane restrictions or approach closures.
- The ODOT mobility target would be exceeded at the stop sign controlled approaches at the Hamburg Avenue/W Marine Drive intersection (0.95 versus 1.55). The uncontrolled highway approaches would meet targets. A traffic signal has been identified as a TSP project at this intersection that would significantly improve operations.
- Overall, drivers would experience a delay of up to 3 minutes traveling on W Marine Drive. Future conditions during average (non-summer traffic demand) conditions would be similar without changes to the existing vehicle lanes.
- The recommended lane reconfiguration would reduce pedestrian and bicycle conflicts, making the roadway more comfortable for all road users and more inviting for businesses and residents.

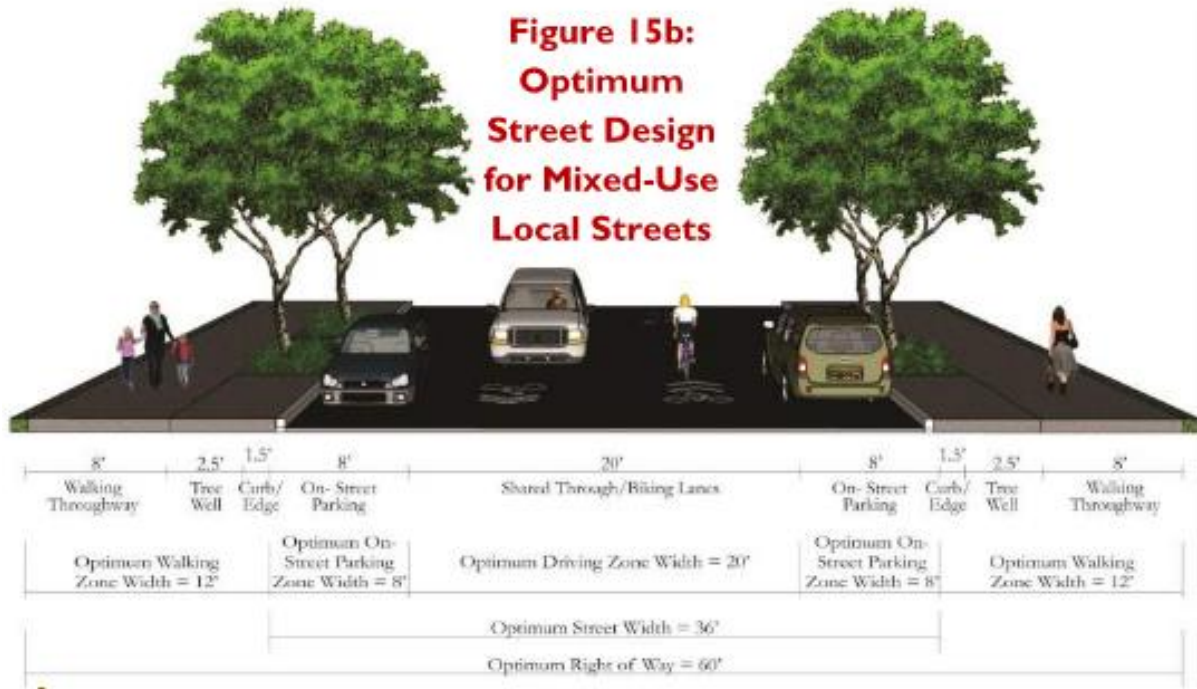
CROSS-SECTION RECOMMENDATIONS

Direct access to the study area is currently provided at Portway Street and Basin Street. Bay Street is planned to extend to the north to a new east-west street. Portway Street is classified as a Commercial/Industrial Collector Street. Basin Street and Bay Street are classified as a Mixed-Use Local Street. The Astoria TSP section standards for these classifications are shown below. No changes to the TSP sections are recommended to support the Port of Astoria Waterfront Master Plan concepts.

Figure 15e: Optimum Street Design for Commercial/Industrial Collector Streets



Portway Street would continue to serve as the primary connection to the Pier 1 and marina areas. With the Commercial/Industrial Collector section, Portway Street would benefit from providing two 12-foot travel lanes wide enough to accommodate truck demand and bike lanes to connect to the Astoria Riverwalk from W Marine Drive. The bike lanes also provide additional pavement width between the curbs to accommodate large vehicle turn movements when needed. On-street parking isn't a priority use for the facility, most of the fronting land uses has off-street parking available. Walking isn't a priority use for the facility. The five-foot sidewalks with landscaping street would accommodate anticipated pedestrian demand.



Basin Street and the planned extension of Bay Street would serve as the primary connection to the east portion of the Port site. The Mixed-Use Local Street section would provide an appropriate multimodal facility for the anticipated users. The center 20-foot wide section would accommodate both two-way vehicle traffic and bikes. The vehicle lane widths are appropriate to encourage lower speeds and the expected passenger vehicles (limited to no truck use). Mixing bikes and vehicles in the travel lanes is acceptable based on the estimated future vehicle volumes and speeds. On-street parking on both sides of the facilities would provide much needed parking supply for the adjacent land uses. Walking is a priority for the facility due to the connection to the Uniontown commercial area on w Marine Drive. The anticipated demand would be accommodated with 10.5-foot wide sidewalks with tree wells.

PORT OF ASTORIA WATERFRONT MASTER PLAN



WALKER MACY