

South Beach Peninsula Transportation Refinement Plan

Newport, Oregon

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The TGM program supports community efforts to expand transportation choices for people. By linking land use and transportation planning, TGM works in partnership with local governments to create vibrant, livable places in which people can walk, bike, take transit or drive where they want to go.

Unless it has been adopted by a duly authorized body, this report does not represent an official policy position of the State of Oregon.

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Newport residents and stakeholders review the Design Team's work at one of the nightly public meetings during the Design Charrette (December 2009)

Introduction

Newport's South Beach Peninsula is a special maritime environment near the mouth of the Yaquina River and the crossing of US 101. The peninsula is home to several of Newport's most important institutional and recreational facilities, including the Hatfield Marine Science Center, the Oregon Coast Aquarium, and the South Beach Marina. In May 2011, the National Oceanic and Atmospheric Association (NOAA) will be relocating its fleet of research vessels from Seattle to the northern end of the South Beach Peninsula, on a site currently being prepared by the Port of Newport. NOAA's impending arrival has acted as an impetus for the City of Newport and local stakeholders to plan for and construct much needed transportation improvements in the area.

In November 2009, a consultant Design Team was brought in by the State's Transportation and Growth Management (TGM) Program to prepare a Transportation Refinement Plan for the district. The team's mission was to work with area stakeholders and the general public to design a series of vehicular, bicycle, and pedestrian improvements that would improve the overall access, efficiency, safety, and aesthetics of the peninsula's transportation system. During an intensive, three-month planning process, the Design Team developed and refined circulation, streetscape, parking, and wayfinding concepts, and also prepared planning-level cost estimates for a range of public improvements proposed in the plan. Much of the design work was completed during a four-day design Charrette held in Newport in December 2009.

Although the South Beach Peninsula is a fairly large land mass, it only has a small handful of public streets that provide access to its various institutional, recreational, industrial, and commercial uses. For the most part, these streets do not have pedestrian and/or bicycle facilities, and the provision of these facilities is a major part of this plan. The parking lot access points and drive aisles form a secondary / complementary system for vehicular circulation. A key component of this plan is to align the roadway and driveway access points as much as possible in order to create a safer and more efficient vehicular circulation system overall. In addition, intersection improvements are proposed for several of the peninsula's key intersections. Given the high volume of tourists and visitors that flock to the area for events or to visit the area's many attractions, the plan also addresses signage and wayfinding, proposing not only principles for physical signage, but how entry sequences for key institutions can be improved through various circulation improvements and design treatments.

Planning and Public Process

The South Beach Peninsula Transportation Refinement Plan was prepared by a consultant Design Team under contract with the TGM Quick Response Program. Design Team members included staff from SERA Architects (urban design and planning), GreenWorks (landscape architecture), and Kittelson and Associates (transportation planning) as well as TGM staff. The work was overseen by a Project Management Team (PMT) comprised of representatives from TGM, SERA, and the City of Newport.

The project benefited greatly from the input and guidance provided by an array of technical advisors and stakeholders, including those representing: the City of Newport, the Port of Newport, gLAs Architects (the Port's architect for the proposed NOAA facility), the Hatfield Marine Science Center (HMSC), the Oregon Department of Fish & Wildlife (ODF&W), SRG Partnership (the architect for the proposed ODF&W facility), the Oregon Coast Aquarium, Rogue Brewery, the Oregon Department of Transportation (ODOT), the Oregon Department of Land Conservation and Development (DLCD), and South Beach State Park.

The project began in November 2009 with initial research and a review of background materials. On November 17 and 18, Design Team members visited Newport for a site tour and a series of meetings with stakeholders and technical advisors. The team also facilitated a public workshop on the evening of the 17th to discuss transportation-related opportunities and constraints for the peninsula. The workshop was attended by approximately 25 stakeholders, neighbors, and members of the general public. The outcome of the workshop was an Opportunities & Constraints Analysis, discussed on subsequent pages of this report.



Exploring initial circulation and streetscape concepts during the four-day Design Charrette

The Design Team returned to Newport for an intensive, four-day Design Charrette, held from December 7th through December 10th at the Rogue Brewery. Over the course of those four days, the team created various concepts for multi-modal circulation and physical infrastructure improvements for the peninsula's transportation system. These design iterations were reviewed with technical advisors and stakeholders, as well as with the general public (via a series of open houses), and refined accordingly. Preferred concepts, along with initial, planning-level cost estimates, were presented at a final Charrette presentation on the evening of December 10th. (The full schedule for the Charrette, as well as design concepts sketches, are located in the Appendix to this report.)

During December 2009 and January 2010, the Design Team made final adjustments to the various plan components generated during the Charrette and prepared this Transportation Refinement Plan. This plan will be presented to the Newport City Council on January 25, 2009, and, barring further modifications, should be considered for formal adoption by both the City and the Port, as well as in less formal ways by the various businesses and institutions within the study area.



The Project Management Team discusses site opportunities and constraints with members of the Newport City Council

Project Study Area

The project study area – defined largely by the South Beach Peninsula – is bounded by Yaquina Bay to the north and east, SW Abalone Street and US 101 to the west, and SE 32nd Street to the south.

The majority of land within the study area is owned by the Port of Newport. Much of this land is also managed by the Port, although significant pieces have been or will be leased to the peninsula's three major institutions: HMSC (and its constituent members), the Oregon Coast Aquarium (who also leases land from the City of Newport), and NOAA. Other lessees and property owners include the Rogue Brewery, Aquarium Village, ODOT, the South Beach Community Center, and various hospitality uses (Holiday Inn Express, La Quinta, the Newport Belle B&B, and the Inn at Yaquina Bay). The following is a brief description of the transportation-related interests and concerns of the peninsula's key stakeholders.



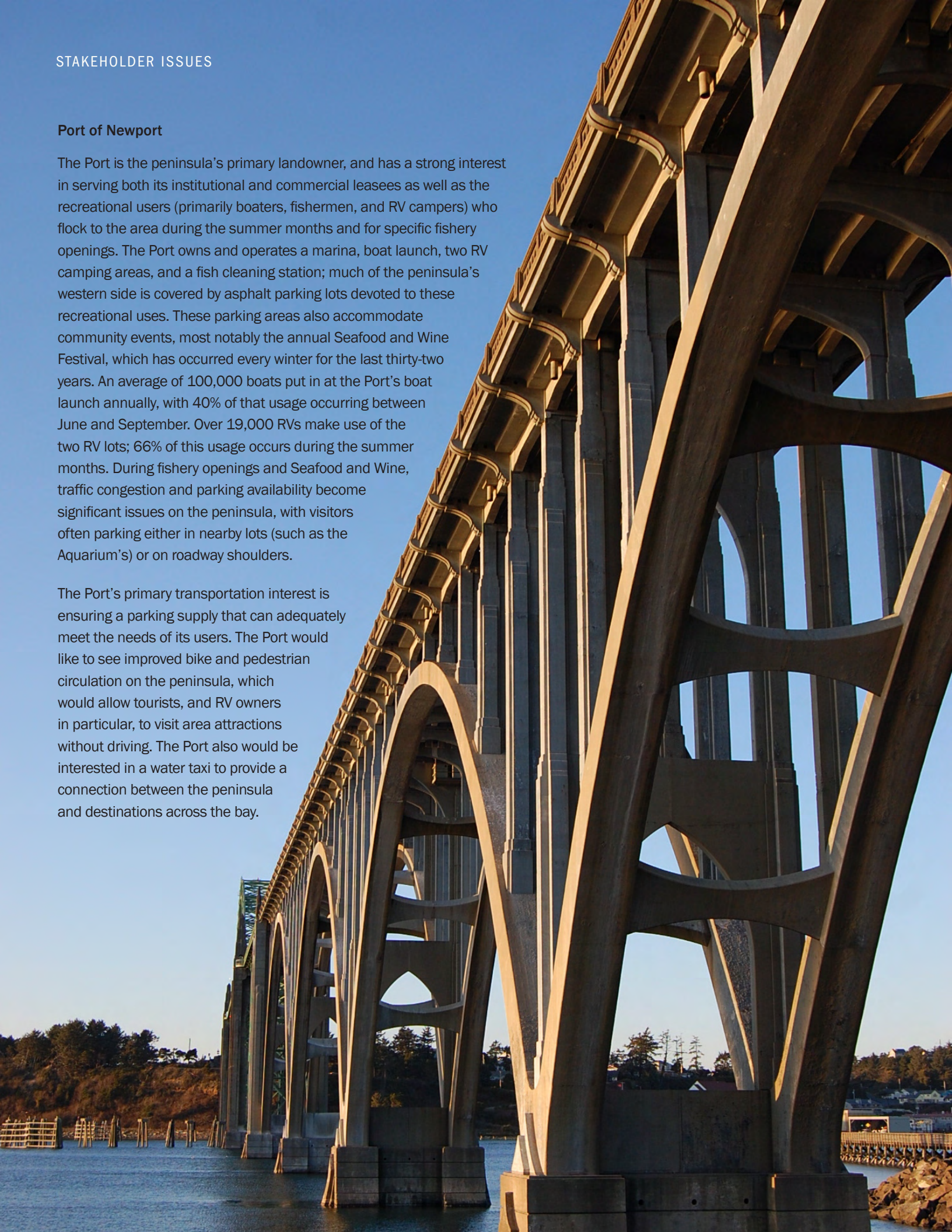
Part of the South Beach Peninsula as viewed from the Yaquina Bay Bridge


Future NOAA Site
Boat Launch
Hatfield Marine Science Center
Rogue Distillery
Rogue Brewery
101
SE MARINE SCIENCE DR
SE 25TH ST
SW 26TH ST
SW 22ND ST
SW 25TH ST
SW 30TH ST
SW ABBEY ST
SE 32ND ST
SE 35TH ST
Oregon Coast Aquarium
La Quinta Inn
Holiday Inn
Aquarium Village
SERA
TGM QUICK RESPONSE: SOUTH BEACH TRANSPORTATION PLAN
Existing Conditions (2009 Aerial)
NEWPORT, OREGON
100-Year Floodplain (FEMA)
Contour Interval: 5'
Building / Structure
Taxlot
1 inch = 150 feet at 30'x42'
0 75 150 300 450 600
Feet
4 December 2009

Port of Newport

The Port is the peninsula's primary landowner, and has a strong interest in serving both its institutional and commercial leasees as well as the recreational users (primarily boaters, fishermen, and RV campers) who flock to the area during the summer months and for specific fishery openings. The Port owns and operates a marina, boat launch, two RV camping areas, and a fish cleaning station; much of the peninsula's western side is covered by asphalt parking lots devoted to these recreational uses. These parking areas also accommodate community events, most notably the annual Seafood and Wine Festival, which has occurred every winter for the last thirty-two years. An average of 100,000 boats put in at the Port's boat launch annually, with 40% of that usage occurring between June and September. Over 19,000 RVs make use of the two RV lots; 66% of this usage occurs during the summer months. During fishery openings and Seafood and Wine, traffic congestion and parking availability become significant issues on the peninsula, with visitors often parking either in nearby lots (such as the Aquarium's) or on roadway shoulders.

The Port's primary transportation interest is ensuring a parking supply that can adequately meet the needs of its users. The Port would like to see improved bike and pedestrian circulation on the peninsula, which would allow tourists, and RV owners in particular, to visit area attractions without driving. The Port also would be interested in a water taxi to provide a connection between the peninsula and destinations across the bay.



National Oceanic and Atmospheric Administration

The Port is responsible for designing and constructing NOAA's new facility at the north end of the South Beach Peninsula. Once constructed, this new facility will house 65 full-time staff, with an additional 110 employees serving on NOAA ships based there. The site could expand – either to the south or west – in the future. This secured facility will have a single point of access – from Marine Science Drive – and is not intended to serve drop-in visitors or tourists. NOAA and the Port's primary transportation interests are in providing multi-modal access to the site for NOAA employees. They therefore would like to see safe pedestrian and bike facilities to, from, and around the peninsula (including between the new NOAA facility and HMSC), as well as a transit stop in close proximity to the NOAA site.

Hatfield Marine Science Center

Located on the east side of Marine Science Drive, the Hatfield Marine Science Center includes research facilities for Oregon State University (OSU), the Environmental Protection Agency (EPA), the US Fish and Wildlife Service (USF&W), ODF&W, NOAA, and the Agricultural Research Service of the US Department of Agriculture. In full, the campus population is around 300 employees. HMSC includes a docking facility for an OSU research vessel, housing for OSU students, and the Marilyn Potts Guin Library. HMSC also operates a public visitor center, which draws approximately 150,000 visitors annually, including some 11,000 school children on field trips.

The HMSC's transportation interests for this plan are focused primarily on the provision of bike and pedestrian connections to and throughout the peninsula. The Yaquina Estuary Trail currently runs along the eastern edge of the HMSC campus, and is considered a strong amenity for the area. However, pedestrian connections to this trail are limited and could be greatly improved – including, perhaps, an extension of the trail to the south. The HMSC would like to see bike/ped improvements accompanied by coordinated, pedestrian-scale lighting that meets "dark sky" standards. In order to improve the pedestrian experience within their own campus, HMSC staff would like to eventually move their shipping and receiving functions to the southern end of campus (near SE 25th Street), thereby removing delivery trucks from the campus core. (Note: HMSC staff prepared a master plan for their campus in 2007, but did not address transportation issues within that plan.)









Various parts of the Hatfield Marine Science Center

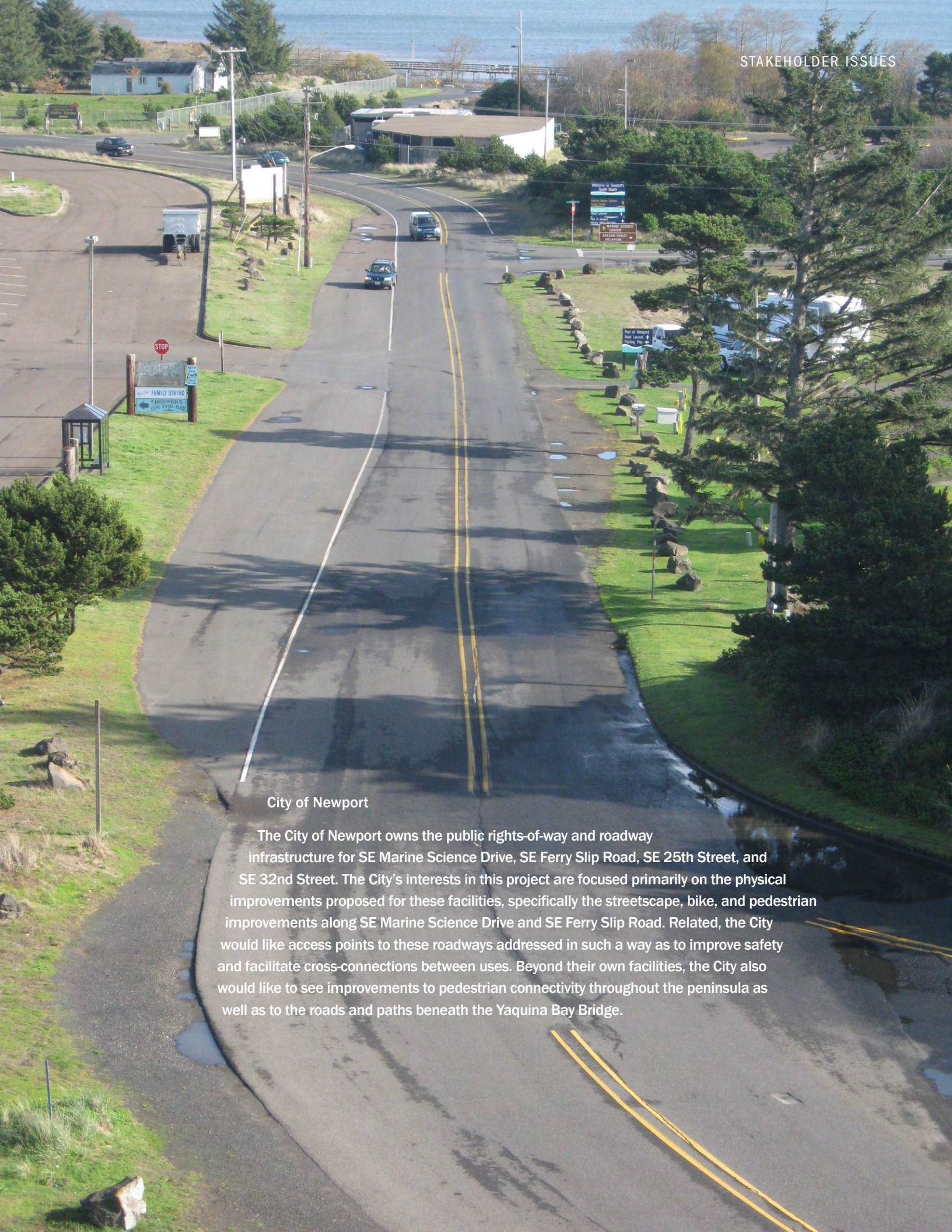
Oregon Coast Aquarium

The Oregon Coast Aquarium, located in the southeast corner of the study area, is one of the chief public attractions on the peninsula, drawing approximately 490,000 visitors annually. During the busy summer months, daily visitation ranges from 2,000 to 3,000, with peaks as high as 5,000. Visitors arrive at the Aquarium's two major parking lots via one of two entrances from Ferry Slip Road or from a third off of SE 25th Street. An overflow lot is located on the west side of Ferry Slip Road. Buses and RVs currently use either the southern lot or the overflow lot. During heavy traffic times on the peninsula, cut-through traffic often utilizes the Aquarium's primary driveway connecting SE 25th Street to Ferry Slip Road.

One of the Aquarium's primary concerns is the provision of district-wide sidewalks and pathways, which would facilitate safe pedestrian movement between the Aquarium, the Yaquina Bay Bridge, and other area destinations. The Aquarium is also concerned with wayfinding and signage, noting that existing signage directing visitors to the Aquarium is sometimes confusing and that the arrival sequence for the Aquarium is understated.



The Aquarium's access road frequently experiences cut-through traffic, bringing additional vehicles into conflict with pedestrians crossing from the Aquarium's parking lots to its entrance.



City of Newport

The City of Newport owns the public rights-of-way and roadway infrastructure for SE Marine Science Drive, SE Ferry Slip Road, SE 25th Street, and SE 32nd Street. The City's interests in this project are focused primarily on the physical improvements proposed for these facilities, specifically the streetscape, bike, and pedestrian improvements along SE Marine Science Drive and SE Ferry Slip Road. Related, the City would like access points to these roadways addressed in such a way as to improve safety and facilitate cross-connections between uses. Beyond their own facilities, the City also would like to see improvements to pedestrian connectivity throughout the peninsula as well as to the roads and paths beneath the Yaquina Bay Bridge.



Rogue Brewery's main operation on the peninsula contains the company's headquarters, primary distribution facility, and a popular pub (Brewer's on the Bay)

Rogue Brewery

Rogue Brewery currently operates and/or utilizes three buildings on the peninsula, and all of these are located north/west of Marine Science Drive. These buildings include the brewery (which also houses distribution, a pub, a gift shop, and the company's headquarters), the distillery (which also contains a tasting room), and a storage facility (also described as a future museum site). The brewery building is the largest of the three, and requires the most parking (for staff and visitors), as well as adequate room for loading and deliveries. Rogue employs approximately 65 year-round employees on the peninsula; that number swells to around 100 during the busy summer months.

The Rogue facility handles up to 100 trucks/month, and approximately 3,500 car trips/month, with peaks for the latter occurring during the summer months. The majority of Rogue-owned trucks travel north along US 101 after leaving the brewery, and most often access the highway via SE Pacific Way, noting that the extra distance and tourist-related traffic make the signalized access at SE 32nd unattractive.

Rogue is primarily interested in maintaining the efficiency of their operations, as well as traffic-related safety on the peninsula. Their brewery's eastern loading area is adjacent to a tourist boat dock, and Rogue has concerns about the interaction between their large trucks and pedestrians accessing the boat tours. There are currently no sidewalks providing direct access to the brewery.







Oregon Department of Transportation

The Oregon Department of Transportation owns and maintains the US 101, SW Pacific Way, and SW Abalone Street rights-of-way, as well as the Yaquina Bay Bridge and the land beneath and adjacent to it. ODOT's interests in the project echo several of the City's, including reconfiguring the SE Marine Science Drive / SE Pacific Way intersection and extending the pedestrian paths from the existing staircases on the Yaquina Bay Bridge to new sidewalks on SE Marine Science Drive. ODOT is also concerned with safety and operations on its primary area facility – US 101 – and has already negotiated with the City the relocation of a traffic signal from SE 32nd to SE 35th once the latter facility is extended to intersect with the highway. It also should be noted that ODOT is a potential funder for transportation-related projects in the area, through various grant programs that the agency manages.

South Beach State Park

South Beach State Park, owned and operated by the Oregon Parks and Recreation Department, is located to the west of the project area and is a significant local and regional attraction. State Park staff would like to see bicycle and pedestrian connectivity improved between the State Park and destinations on the peninsula itself. They would also like these new and/or enhanced connections to be accompanied by improved wayfinding signage.



dunes and the Pacific Ocean, Newport

Opportunities and Constraints Summary

An Opportunities and Constraints map and corresponding table were prepared after initial stakeholder meetings to identify many of the issues that were articulated in those meetings. The opportunities and constraints table is keyed to an accompanying map, and both are located in the Appendix to this document. The major points from that analysis are summarized here.

Development Opportunity Sites

Three large sites are likely to be redeveloped in the area. Two Port of Newport parcels, immediately west and south of the NOAA site, could be developed for NOAA expansion in the future or for other Port-related development. These would be accessed from SE Marine Science Drive, adding to the circulation issues for that roadway.

A third site, south and west of the Aquarium, is in private ownership. While there are wetland issues on the site, some part of it could be developed with access likely to be from SE Ferry Slip Drive. In addition, the Aquarium Village is an area with redevelopment potential for commercial use. Redevelopment in this area could add traffic to the local streets serving the area.

Streetscape / Pedestrian / Bicycle Improvements

Improving the streetscape of the public roads and private access ways in the area emerged as a key concern of many stakeholders. Providing access for bicyclists and pedestrians in the area was an important objective for many of the stakeholders. People using these modes include users of the RV park, visitors from the State Park, commuters and area employees, and visitors to the area who prefer to park once and visit multiple destinations on foot or bike.

A foremost concern was to identify the desired street section for SE Marine Science Drive, which is the circulation spine of the peninsula. The road is used for daily access to Port facilities, the HMSC, and Rogue Brewing and is one of two access routes to the Aquarium. The NOAA facility, with its new influx of regular commuter and truck traffic, is to be sited at the northern terminus of the road. Both truck and vehicular traffic are important considerations, as well as recreational vehicles and personal vehicles with boat trailers. During peak events, the road's shoulders are used for informal overflow parking. Currently, SE Marine Science Drive does not have facilities dedicated to bicycles or pedestrians.

Connections to/from the Peninsula

It was acknowledged by most stakeholders that the Yaquina Bay Bridge is a limiting factor with regard to traffic connecting to the South Beach area from the north side of the bay. Several stakeholders discussed the opportunities to improve transit access, both to address the limitations imposed by the bridge and

to provide alternatives to driving. Expanded bus service and a potential water taxi were identified as strategies.

Stakeholders identified public access to the waterfront as an important issue. Traditionally, kayakers and others have put in at the north end of SE Marine Science Drive, and this access point may be difficult once the NOAA facility opens.

Intersection / Access Improvements

Improving the intersections in the area was identified as a significant project objective. Intersections such as that between SE Marine Science Drive/SE Pacific Way have definite design flaws. Others would benefit from improved alignment and/or clarification of the points they serve. During busy times on the peninsula, queuing was identified by some stakeholders as a problem.

The Design Team reviewed the configuration of Marine Science Drive, as well as the various access points along it. Improvements to driveway configurations were considered as part of the proposed new alignment. These proposed improvements were also considered as a strategy to improve wayfinding in the area.



Preferred Circulation Plan

The South Beach Peninsula Preferred Circulation Plan proposes improvements to existing public streets and select intersections in the South Beach study area to make them safe and attractive for all roadway users – pedestrians, bicyclists, cars, trucks, recreational vehicles, and delivery trucks of all sizes. The Plan also proposes new roadway extensions in strategic locations to alleviate congestion and provide better peninsula-wide connectivity. Proposed enhancements to access drives on Port of Newport property will improve access to the study area's various destinations and their parking lots, including Rogue Brewery, the South Beach Marina and public boat ramp, the Oregon Coast Aquarium, Hatfield Marine Science Center, and the future NOAA facility. The Plan also proposes a comprehensive network for bicyclists and pedestrians that will improve access to the peninsula from South Beach State Park, Downtown Newport, South Beach residential areas, and the various destinations on the peninsula itself.

SE Marine Science Drive, December 2009

Vehicular Access

Vehicles can access the study area from US 101 via SW Abalone Street, SE Pacific Way, SE 32nd Street, and – in the future – via a new signalized intersection at SE 35th Street. A new 35th Street connection is proposed to extend from Ferry Slip Road across US 101 to a new extension of SW Abalone Street, which itself would run north from SE 35th to the curve of the existing alignment west of US 101. Together, these new and existing facilities will provide greater redundancy to the area's road system, allowing drivers multiple access routes to and from US 101. This redundancy will be especially useful during peak visitor times.

SE Marine Science Drive and SE Ferry Slip Road will continue to be the primary north-south vehicular spine for the peninsula. SE 25th will provide service and staff access to the HMSC and the Aquarium. Under current ODOT and City planning, the signal at US 101 / SE 32nd will be removed when the new signal is installed in at SE 35th. The US 101 / SE 32nd would then be made a right-in/ right-out intersection, meaning that SE 32nd would serve more of a local access function.







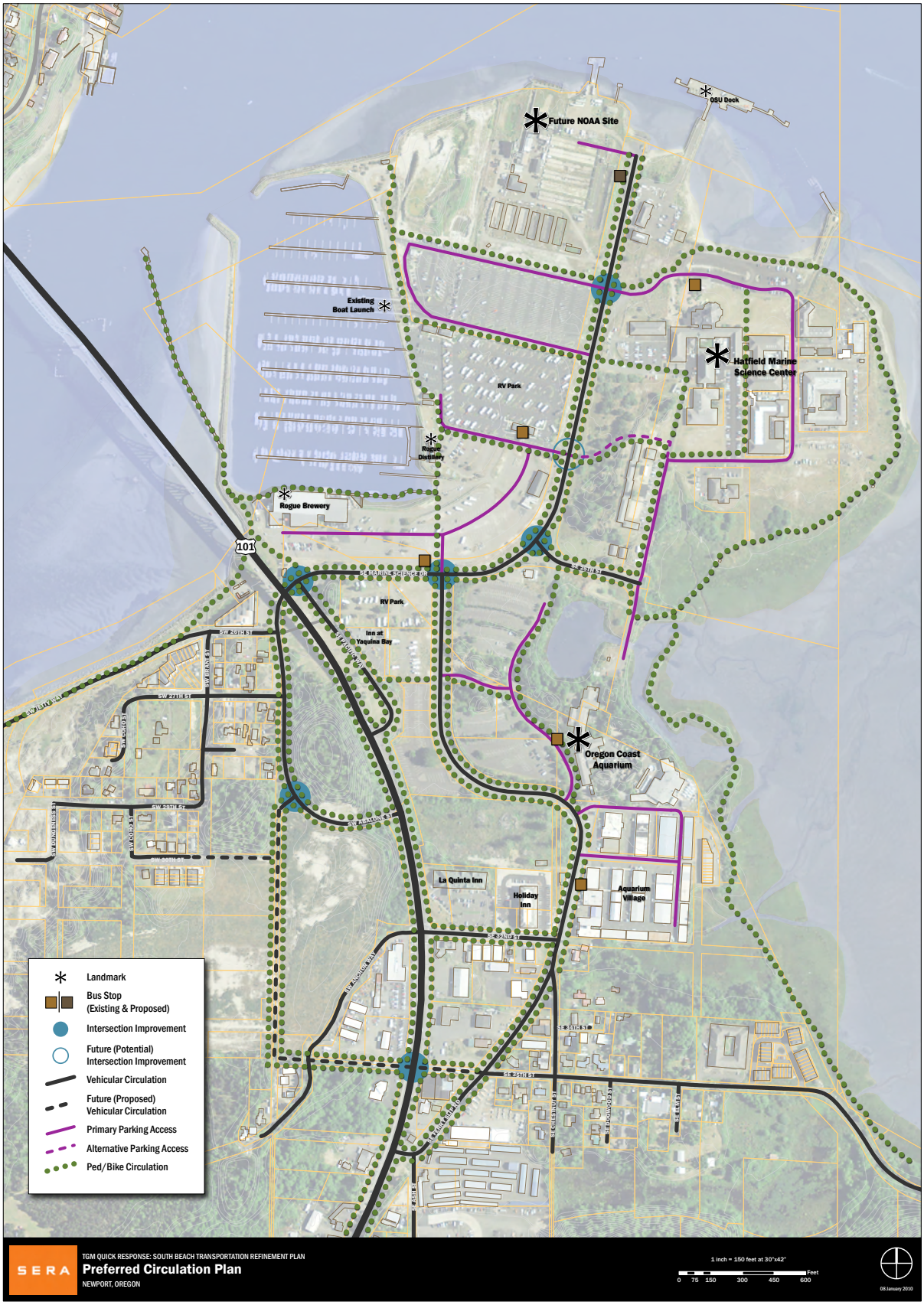
photos from top: Yaquina Bay Bridge; existing crosswalk on SE Ferry Slip Road; SE Marine Science Drive

Intersection Improvements

This plan proposes improvements to four existing intersections in the study area: SE Marine Science Drive and SE Pacific Way; SE Marine Science Drive and SE Ferry Slip Road; SE Marine Science Drive and SE 25th Street; and SE Marine Science Drive and the main entrances to the HMSC and the marina / boat ramp. Two additional intersection improvements are proposed: a three-legged intersection with the existing SW Abalone Street and the proposed Abalone extension, and a full intersection at US 101 / SE 35th Street. Depending on future development and improvements at the HMSC, an additional four-legged intersection could be constructed on SE Marine Science Drive at the intersection with the newer RV camping area and a potential new driveway for the HMSC. All of these intersection improvements are proposed in order to improve overall efficiency and safety for the full range of users. Additional details about some of these intersections are included elsewhere in this report.

Parking Access

Surface parking lots comprise the majority of the western portion of the South Beach Peninsula. Access drives within these parking lots serve as a secondary circulation system on the peninsula for vehicles (and informally for pedestrians). This plan proposes formalizing several key parking access ways by establishing curbs, sidewalks, and – in some cases – landscaping. These enhanced access ways will help define the parking areas, clarify travel paths, maximize parking efficiency, and improve safety for all users.


Future NOAA Site
OSU Dock
Existing Boat Launch
Hatfield Marine Science Center
RV Park
Rogue Distillery
Rogue Brewery
101
SE MARINE SCIENCE DR
SE 25TH ST
RV Park
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Oregon Coast Aquarium
La Quinta Inn
Holiday Inn
Aquarium Village
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Bus Stop (Existing & Proposed)
Intersection Improvement
Future (Potential) Intersection Improvement
Vehicular Circulation
Future (Proposed) Vehicular Circulation
Primary Parking Access
Alternative Parking Access
Ped/Bike Circulation
SERA
TGM QUICK RESPONSE: SOUTH BEACH TRANSPORTATION REFINEMENT PLAN
Preferred Circulation Plan
NEWPORT, OREGON
1 inch = 150 feet at 30"x42"
0 75 150 300 450 600 Feet
08 January 2010







photos from top: Yaquina Bay Trail; existing parking lot near Rogue Brewery; the Newport City Loop bus

Pedestrian and Bicycle Access

Pedestrians and bicyclists should have dedicated facilities on all existing and proposed public streets in the study area. In addition, sidewalks or trails have been proposed along selected parking lot driveways, along the shoreline of the Yaquina Bay, through the Hatfield Marine Science Center, and in front of the Oregon Coast Aquarium. Descriptions of these facilities are included elsewhere in this report.

Transit Service

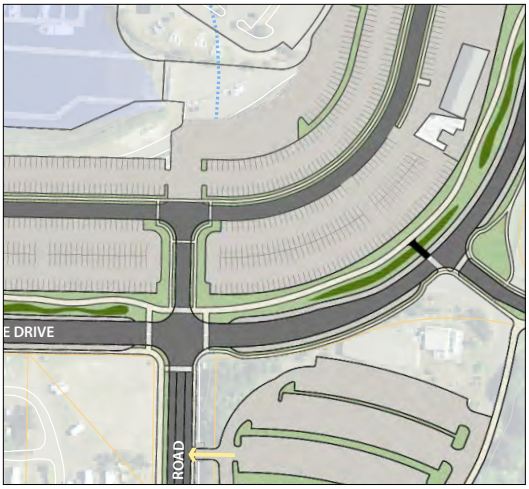
The South Beach Peninsula is currently served by Lincoln County Transit, which operates three different routes that stop there. The Newport Loop has five stops on the Peninsula: on SE Marine Science Drive near the Rogue Brewery, at the northern RV park, near the HMSC visitor center, at the Aquarium, and at Aquarium Village. The South County Bus (serving the southern portion of Lincoln County) offers on-call service for the Rogue Brewery stop. The Valley Express, which runs between Newport and Corvallis, offers on-call service to any location on the peninsula. In addition to these specific services, Lincoln County Transit also offers a dial-a-ride service for the area. This plan proposes that a designated transit stop be placed adjacent to the new NOAA facility, and that this stop be served by both the Newport Loop and the South County Bus, the latter on an on-call basis.



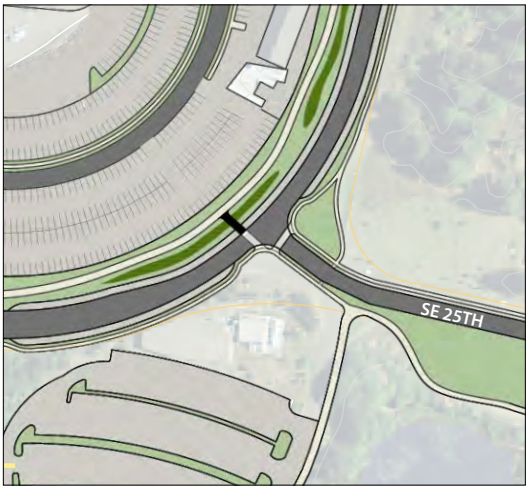
South Beach Peninsula Illustrative Plan



1. Roundabout on SE Marine Science Drive



2. SE Marine Science Drive / SE Ferry Slip Road intersection



3. SE Marine Science Drive / SE 25th Street intersection

Key Features

This section describes in detail key components of the South Beach Peninsula Transportation Refinement Plan. Preliminary cost estimates for these projects have been included in Appendix D of this document.

1. Roundabout on SE Marine Science Drive

One key feature of this plan is a roundabout at the north end of SE Marine Science Drive. This signature feature would serve both as a gateway to some of the peninsula's most popular destinations and as a major decision point for drivers. Those looking to visit the HMSC would follow the roundabout to the east, accessing the center via a realigned driveway connecting to their existing public parking area. Employees and delivery vehicles heading to NOAA would continue north from the roundabout, while recreational boaters and tourists would use the west leg of the roundabout to access the public boat ramp and marina. The roundabout would accommodate large trucks and boat trailers, provide safe crossings for pedestrians and cyclists, be marked with clear wayfinding signage, and provide opportunities for innovative stormwater treatment and management, landscaping, and public art. The roundabout will impact a small portion of the Port's boat trailer parking lot; some parking spaces in the far northeast corner will need to be removed / reconfigured.

2. SE Marine Science Drive / SE Ferry Slip Road Intersection

In order to improve efficiency and safety, a four-way intersection is proposed at the junction of SE Marine Science Drive and SE Ferry Slip Road. The new north leg of this intersection would serve as the primary access to the Rogue Brewery / Port parking lots; the existing access point to the west would be closed. This redesigned intersection would feature dedicated left turn lanes and marked crosswalks on the east, west, and southern legs. The intersection would be accompanied by clear wayfinding signage that would direct traffic to the peninsula's various attractions. It should be noted that visitors to the Aquarium would be directed south along SE Ferry Slip Road to access the Aquarium via their primary access from that road.

With the relocation of the Rogue / Port parking access to align with SE Ferry Slip Road, modifications to that parking area would be necessary. These modifications are shown conceptually in the diagram, which illustrates well-defined drive aisles and an efficient parking layout. This reconfigured parking area accommodates large truck/fire/bus access for all travel lanes and turn radii. The concept illustrated here maximizes the parking area and allows for the installation of festivals and events at this location. Proposed

landscape areas would meet or exceed existing open space requirements. The reconfigured lots rendered in these conceptual drawings are for illustrative purposes only; an engineering study of the interior parking layout will be required as the plan moves towards implementation.

3. SE 25th Street

New wayfinding signage would direct HMSC visitors to the northern-most parking lot for that facility; similar signage would direct Aquarium visitors to access that destination via its entrance(s) from SE Ferry Slip Road. As discussed below, it is recommended that the Aquarium close its public access point on SE 25th Street. Together, these efforts will allow SE 25th Street to become a service access road to be used primarily by delivery vehicles and employees of the HMSC or Aquarium. SE 25th Street would be realigned to create a 90-degree intersection with SE Marine Science Drive, thereby improving driver sight distance and pedestrian crossing safety. A pedestrian sidewalk/path would extend from SE Marine Science Drive on the south side of SE 25th (either adjacent to the roadway or along the mill pond) to connect to the Yaquina Estuary Trail.

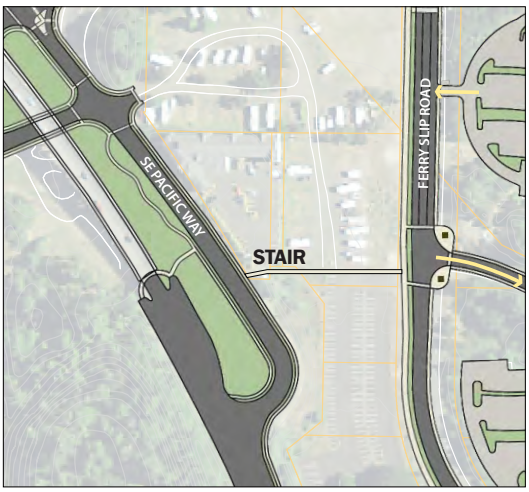


4. Proposed Oregon Coast Aquarium access and circulation

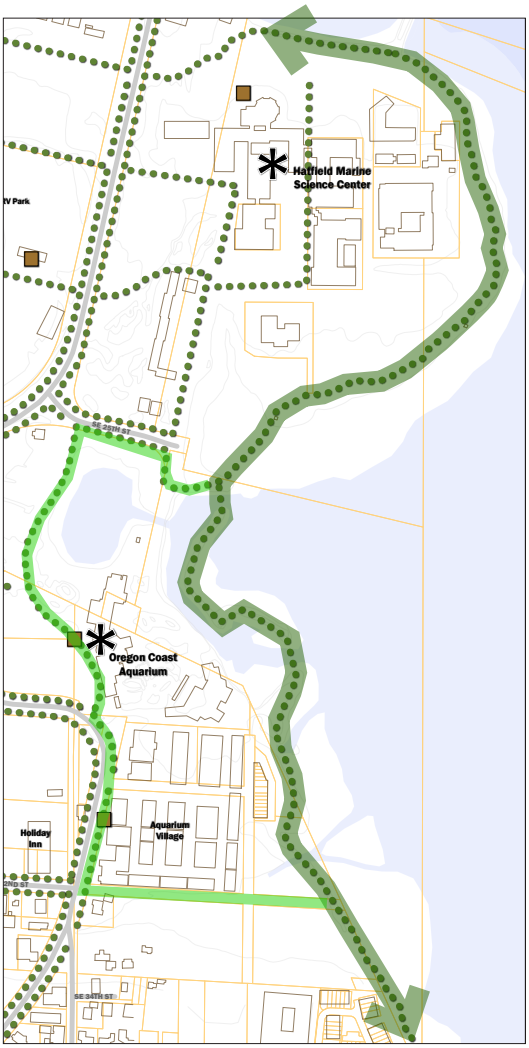
4. Aquarium Access

A new access and circulation scheme is proposed for the Oregon Coast Aquarium in order to improve wayfinding and orientation for visitors, as well as a better sense of arrival. Currently, access to the Aquarium suffers from the lack of a clear and memorable entrance sequence. There is contradictory directional signage on US 101, there are multiple entrances to the two main parking areas, and there is no real gateway or “front door” for visitors. Circulation improvements also would improve overall safety by reducing conflicts between autos and pedestrians.

The proposed reorganization would include formalizing the central entrance from SE Ferry Slip Road as the primary, one-way entrance, enhanced with a gateway treatment (i.e., plaza, signage, lighting), sidewalks, and marked crosswalks across SE Ferry Slip Road. Visitors arriving via this primary entrance would turn either left or right at the Aquarium’s existing main entrance plaza to access either of the two main visitor parking lots; vehicular travel between the two lots would be prohibited. What is currently the north/south access road between the two lots would be narrowed to a single lane that would still allow for fire access but would calm traffic and improve the safety of pedestrians moving between the parking areas and the Aquarium entrance. The access point to SE 25th Street would be closed, and a new exit-only driveway would allow vehicles to exit the northern lot directly on to SE Ferry Slip Road. Drivers would exit the southern lot onto SE Ferry Slip Road via the existing access, which would also serve



5. Stair access



6. Yaquina Estuary Trail (dark green); near-term trail link (light green)

as the bus / employee entrance. (It should also be noted that these improvements would be bolstered by the pedestrian and streetscape improvements proposed for both SE Marine Science Drive and SE Ferry Slip Road (discussed in detail elsewhere in this report), thereby allowing safer pedestrian movements between the Aquarium and other area destinations.)

5. Stair Access

A staircase currently exists in the northwestern corner of the Aquarium's overflow parking lot. This stair leads up to the Inn at Yaquina Bay parking area; from there, users can access SE Pacific Way, US 101, and the Yaquina Bay Bridge. In a tsunami emergency, this staircase can act as a key part of the evacuation route, as people make their way to the evacuation assembly point atop the hill bounded by US 101 and SW Abalone Street. This plan proposes that a new sidewalk or path be built along the northern edge of the Aquarium's lot to improve accessibility to these stairs and overall connectivity.

6. Yaquina Estuary Trail

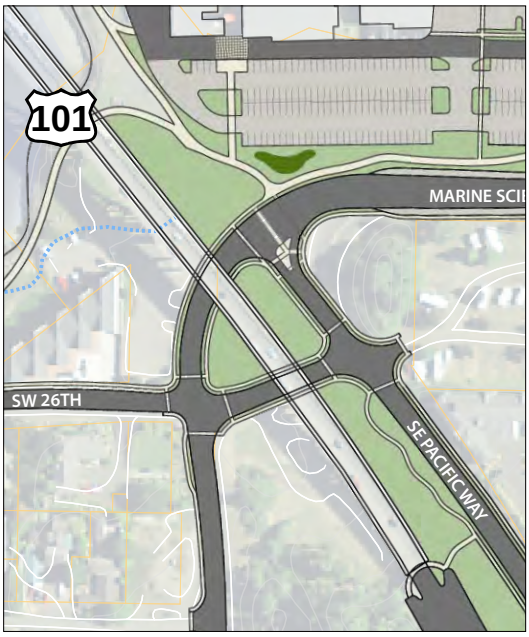
Based on strong stakeholder support, this plan proposes to extend the Yaquina Estuary Trail from its current terminus near SE 25th Street south and east along the Yaquina Bay shoreline to connect to Idaho Point and other planned trails in the South Beach area. The trail would provide important recreational and educational opportunities for residents and visitors alike, and could be part of the Corvallis to the Coast Trail, a network of trails, logging roads, and paved roads that connects Corvallis to Newport (via SE 35th Street).

While the concept of the Yaquina Estuary Trail extension is visionary, it is not without its practical problems – including the environmental sensitivity of the estuary itself and the myriad State and local regulations governing the bay. It should also be stated that the alignment shown in this plan crosses taxlots currently leased from the Port of Newport by the Oregon Coast Aquarium, which has its own plans for creating new estuary viewpoints for its paying visitors. Given the Aquarium's lease agreement and plans, a secondary option for the trail (illustrated in light green) may be to route users west around the Aquarium and then back to a new Estuary Trail extension to the south (possibly near Aquarium Village).

7. Under the Yaquina Bay Bridge

Sidewalks are proposed to connect from the existing stairs on the Yaquina Bay Bridge to new sidewalks along SE Pacific Way and SW Abalone. Today, there are no sidewalks and pedestrians coming down from the bridge must walk on the grass as they make their way to area destinations or the neighborhood to the west. The sidewalk system under the bridge should connect to new sidewalks and paths proposed as part of this plan, including those along SW 26th Street, SE Marine Science Drive, and along the breakwater channel to Yaquina Bay (connecting to South Beach State Park).

In addition, the SE Pacific Way / SE Marine Science Drive intersection would be modified to improve vehicle and pedestrian safety. The turning radii and travel lane widths on SE Pacific Way would be reduced to slow approaching motor vehicles and improve sight distance. A concrete refuge splits the travel lanes to clarify where the travel lanes are and to shorten the roadway crossing distance for pedestrians.



7. Under the Yaquina Bay Bridge

8. Northern Viewpoint

The turnaround at the northern terminus of SE Marine Science Drive is currently used by visitors, residents, and area employees as an informal viewpoint of the Yaquina Bay and its various built and natural features. While the new NOAA facility will not be open to visitors, many will still come to this spot for the views it affords as well as from curiosity about Newport's newest prized institution. It is recommended that some signage or an information kiosk be placed in this vicinity to inform visitors about the bay and the various scientific research activities on the peninsula.



8. Northern viewpoint



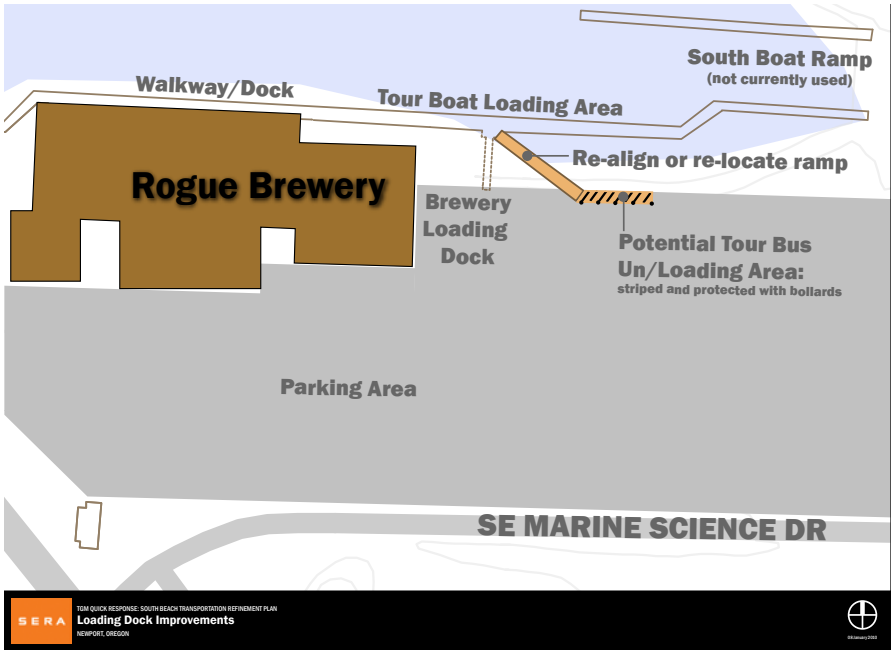
Existing dock and approach



9. Rogue Brewery Dock

In order to provide a more complete pedestrian loop around the peninsula and to reduce pedestrian-vehicle conflicts, a walkway should be completed along the marina on the north side of Rogue Brewing's main building. The existing dock structure could be upgraded or replaced, and extended with a new ramp to the west to make it a fully-public walkway. This path would allow the public to approach the water and provide an excellent view of the marina. It also would reduce the need for pedestrians to walk through busy parking lots, thereby reducing conflicts with autos, trucks, and recreational vehicles. (Given the presence of loading activity at both ends of the Rogue building, this new pedestrian route would be especially valuable.) Further, this path would integrate the existing fishing pier into the main pedestrian loop.

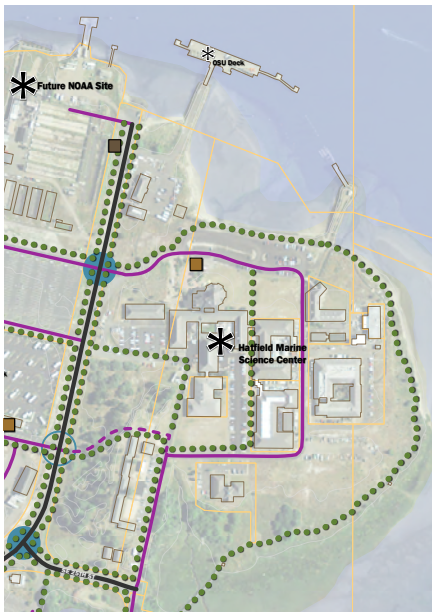
As noted elsewhere, stakeholders during this planning process expressed a concern for potential conflicts between the loading activity at the eastern end of Rogue Brewing with public access to the current dock via an existing ramp. This ramp is specifically used for the Discovery Tours operation, which at times takes school groups out on its boats. It is recommended that this access ramp be moved further east to provide more buffer area between these activities and that a dedicated area for off-loading school buses be provided in the parking area. The queuing area for the ramp should be striped and protected by bollards.



9. Rogue Brewery Dock concept

10. Hatfield Marine Science Center

The HMSC today functions largely as an auto-oriented research / office park, with many if not most employees able to park within close proximity to the building in which they primarily work. Although there has been some discussion in recent years about making the campus more pedestrian-oriented, the 2007 HMSC Master Plan did not include a transportation section. It is recommended that the HMSC prepare a transportation element for their master plan to lay out clear strategies for vehicular circulation, parking, bicycle use, and pedestrian circulation. Pedestrians should be the priority at the campus core, with parking and loading issues relocated elseswhere. (It is recommended that loading functions be moved to the south end of campus near 25th to keep trucks out of the core.) The pedestrian circulation system should be clear, with a hierarchy of paths, distinct decision points, and supportive wayfinding signage. The campus should also be more strongly connected to the HMSC's strongest physical asset - the waterfront. (Today the existing parking lots create a barrier.) Finally, efforts should be made to connect the HMSC's internal pedestrian circulation system to the streetscape improvements planned for Marine Science Drive as well as to future pedestrian facilities on the Port's property.



10. Proposed circulation for the Hatfield Marine Science Center

11. Port Facilities

The Port's facilities to the north and west of Marine Science Drive are auto-oriented, catering primarily to either out-of-town visitors or those with large vehicles and/or trailers. To complement these uses, and to facilitate safe movement in and between them, as well as to other peninsula destinations, this plan proposes creating safe pedestrian pathways with enhanced landscaping in several key locations. For example, east-west pedestrian spines should be added on the edges of the existing parking lots to connect to the planned improvements along Marine Science Drive.



11. Proposed circulation for the Port's boat ramp, RV park, etc.

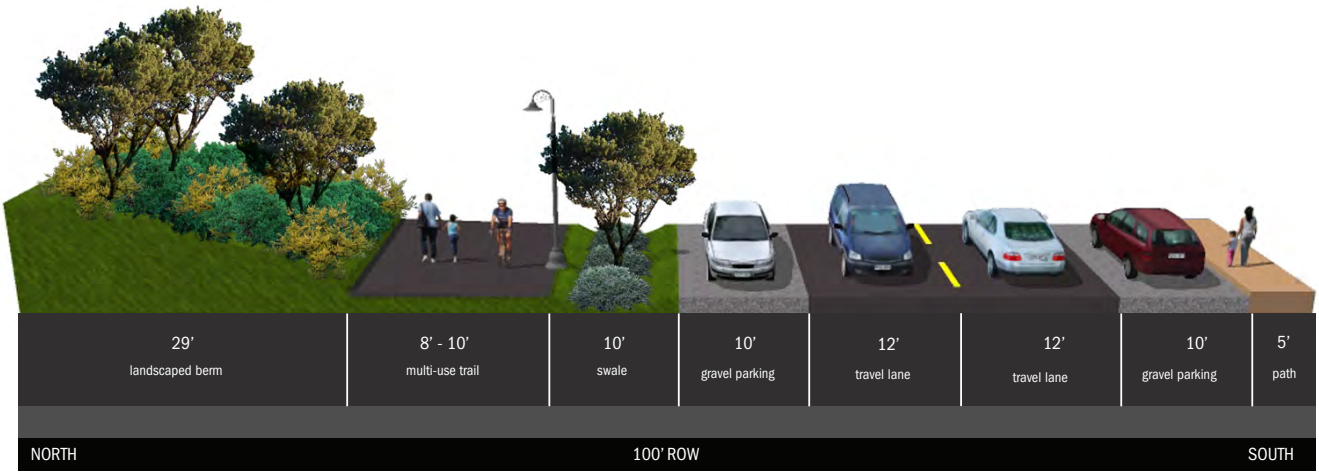
Streetscape Improvements

SE Marine Science Drive, SE Ferry Slip Road and SW Abalone Street are three primary streets in the study area that are proposed to have significant bicycle, pedestrian, and drainage improvements. Descriptions and illustrations of the various streetscape improvements are included here; cost estimates for these improvements are included in the Appendix to this report.

SE Marine Science Drive (East/West)

The existing paved road section of SE Marine Science Drive, which runs from under the Yaquina Bay bridge to the northern end of the peninsula, is not centered in the middle of right-of-way; it favors the southern and eastern side. As such, the new streetscape improvements are proposed for the north and west sides of the road to take advantage of the expansive width without rebuilding the roadway or realigning the right-of-way. That portion of the right-of-way not dedicated to roadway, parking, and bike/ped facilities should be sculpted and landscaped to buffer the trail from adjacent parking lots.

The proposed east-west section of SE Marine Science Drive between the bridge and SE 25th includes two 12-foot travel lanes, two 10-foot gravel parking lanes (wide enough to accommodate vehicles with boat trailers), and a landscaped eight to 10-foot asphalt trail on the north side of the road. City-approved pedestrian-scale lighting should be used along the trail for safety. (Note: these fixtures should be “dark sky” compliant.) The trail would be buffered from the roadway and parking lane by a 10-foot wide landscaped stormwater swale, which would collect and filter stormwater that is shed from the paved sections of the roadway and trail. A five-foot wide, curb-tight sidewalk is proposed on the south side of the road for full pedestrian connectivity and convenience.

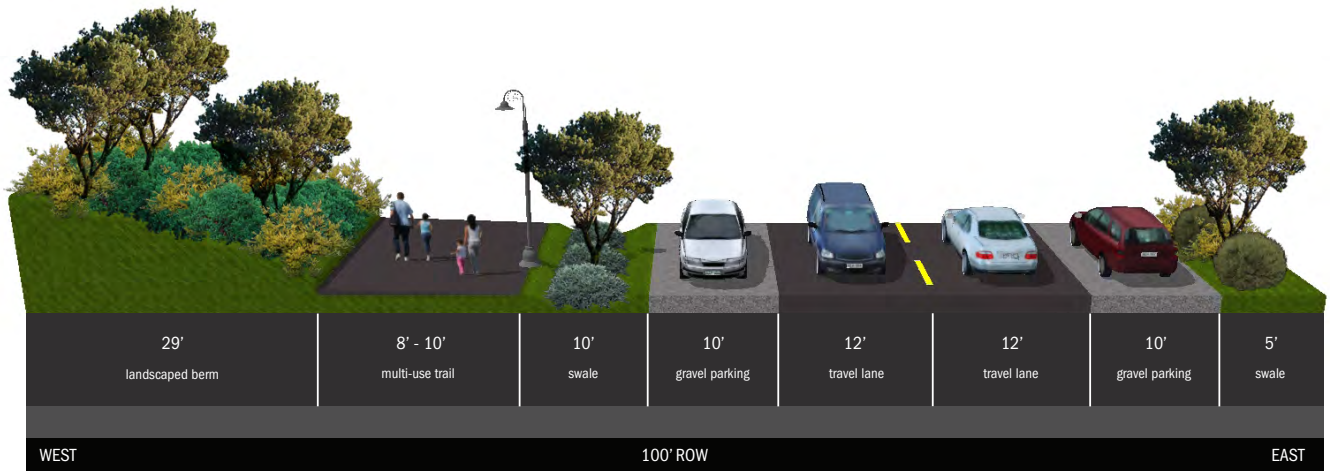


SE Marine Science Drive (East/West)

SE Marine Science Drive (North/South)

The existing paved roadbed for the north-south portion of SE Marine Science Drive (from SE 25th north) heavily favors the eastern side of the public right-of-way, leaving little room for a sidewalk or path. Like the east-west segment, the proposed section for this portion of SE Marine Science Drive includes two 12-foot travel lanes, two 10-foot gravel parking lanes, and an eight to 10-foot asphalt trail on the west side of the road. City-approved pedestrian-scale lighting should be used along the trail for safety. The right-of-way also includes a 10-foot landscaped stormwater swale.

Depending on the development plans of the HMSC, there is the potential to get an additional sidewalk or pathway on the east side of SE Marine Science Drive north of SE 25th Street. This potential path would be on property currently leased by the HMSC, and would ideally meander in response to that area's existing topography and mature landscaping. Alternatively, it could be a curb-tight sidewalk similar to what is shown for the east-west portion of the road.



SE Marine Science Drive (North/South)

SE Ferry Slip Road (North)

SE Ferry Slip Road provides a significant north-south connection on the peninsula, linking SE Marine Science Drive to the Oregon Coast Aquarium, retail stores, lodging, and the residential areas to the south. The northern end of SE Ferry Slip Road (north of the main Aquarium entrance) is proposed as a three-lane cross-section that includes two 12-foot travel lanes and a 14-foot center turn lane. A curb-tight sidewalk is proposed on the east side of the road to preserve the existing mature landscaping on the Oregon Coast Aquarium site. An 8-foot landscaped stormwater swale and eight to 10-foot asphalt trail are proposed for the west side of the road. The remaining public right-of-way (approximately 10 feet) should be landscaped to buffer the trail from adjacent parking lots.



SE Ferry Slip Road (North)

SE Ferry Slip Road (South)

The southern section of SE Ferry Slip Road is a two-lane cross-section that includes two 12-foot travel lanes. A curb-tight sidewalk (five to six feet wide) is proposed to preserve existing landscaping and adjacent retail parking areas. An 8-foot landscaped stormwater swale and an 8 to 12-foot asphalt trail are proposed on the west side of the road. A 10-foot buffer would provide room for landscaping or limiting impact on the adjacent, environmentally-sensitive lands.



SE Ferry Slip Road (South)

SW Abalone

SW Abalone provides access from US 101 to the peninsula and adjacent residential areas to the west. The proposed cross-section includes two 12-foot travel lanes, two six-foot bicycle lanes, and a five-foot curb-tight sidewalk on the west side of the road. The existing right-of-way varies along SW Abalone and the cross-section is intentionally kept narrow to reduce its impact on the adjacent lands (steep hill to the east and mature landscaping to the west). When Abalone is extended to the south, the new section should include adequate bicycle and pedestrian facilities.



SW Abalone

Wayfinding and Signage

The current signage on the South Beach Peninsula is generally attractive and informative, but some concerns about its effectiveness were identified during the course of the study. Navigating the Peninsula can be challenging for first-time visitors because the existing directional signage is not always optimally located. Moreover, some background colors on the signs themselves do not provide enough contrast making them difficult to read. This is especially true for the lighter blue color used for the Oregon Coast Aquarium signage. Some stakeholders identified the potential for conflict between internal facility signage and the general area signage. The HMSC, for example, has internal signage standards which are important to the branding of the organization. Signage is an important component of wayfinding but it should be noted that the recommendations for physical improvements to the intersections and roadways in other sections of this report will contribute directly to improved wayfinding as well.





photos from top: light post banner; monument signage

Signage Recommendations

The City of Newport and the Port of Newport should continue work with Peninsula stakeholders to create a comprehensive signage and wayfinding network. The following are specific recommended strategies to improve wayfinding in the peninsula area.

Develop consistent district-wide directional signage.

- Relatively few signs, if well placed and designed, are preferable to a proliferation of signs.
- Ensure that all colors and graphics provide adequate contrast, readable text, and clear messages.
- Where a facility has internal signage standards, provide district signage to the entry point of the facility, and allow internal signage to prevail after the visitor has arrived within the facility.

Use a clear hierarchy of signs.

- Do not provide too much information in the primary signs to avoid confusing first-time visitors.
- Use secondary signs to give more detail, as one approaches the major destination.

Destination signage should precede major decision points such as intersections and access driveways.

- Coordinate directional signage locations with safety and regulatory signage to avoid conflicts and visual clutter.
- Ensure that all signage presents a consistent message.







photos from top: different styles of monument signage - Westerly, Rhode Island; Madras, Oregon; Sherwood, Oregon

Create significant monument signage at key entries and major decision points.

Develop signage at a scale appropriate for bicyclists and pedestrians oriented along major paths.

- Place signs at significant decision points in the path system.
- Integrate maps showing the path system to give path users an overview and a sense of the order of the circulation system.

Ensure that all colors and graphics provide adequate contrast.

Develop named entries or road names for Port driveways: e.g, "A,B,C..." "South, Central, North" or themed names: "Coho, Chinook, Sockeye".

Use banners for celebratory and event signage.

- Message can be updated for seasons and/or major events.
- Banner supports should be integrated with light poles.

Provide interpretive signage at key points that describe various topics of interest to the general public. Examples include:

- Signage at the north end of SE Marine Sciences Drive explaining NOAA's mission and operations – recognizing that security prevents the public from entering the facility.
- Similar signs as above describing the mission of the HMSC and the Port of Newport.
- Signs describing the history of the area at prominent viewpoints (i.e., the northwest picnic area and viewpoint).
- Signs describing local ecological systems (e.g., at the estuary trailhead and similar points).

Integrate public art into wayfinding strategies.

Recommendations For Beyond the Study Area

During the course of the study, several ideas emerged which have implications beyond the study area. Those ideas are described here, with some general recommendations for consideration by the City, ODOT, and others.

The streetscape improvements for the southern segment of SE Ferry Slip Road should be extended south of SE 32nd Street to the intersection with US 101. The City of Newport also has plans to eventually improve SE Ash Street south from SE Ferry Slip Road to SE 40th, and it is recommended that those improvements include appropriate bike and pedestrian facilities. Collectively, these infrastructure investments would help facilitate safer bike and pedestrian movement between the peninsula and Oregon Coast Community College, Wilder, Idaho Point, etc. (Note: Depending on the timing of the above improvements, it may be recommended that modest, interim bike / ped improvements be made along SE Ash and SE Ferry Slip between SE 40th and Marine Science Drive, as there are currently no such north-south facilities in this area save for roadway shoulders along US 101 and Ferry Slilp.



SE Ferry Slip Road lacks bicycle and pedestrian facilities south of the study area

Connect SW 30th Street to the SW Abalone Street Extension. This connection will help reduce congestion by establishing a more redundant grid of streets serving the residential area west of SW Abalone.



The future alignment of SE 35th Street.

Work with local boaters and neighbors to identify and formalize put-in locations for kayaks and other small craft along SE 35 Street, as it curves along the south side of Yaquina Bay towards Idaho Point. These new launch locations would offer more direct access to the bay at all tidal conditions, and would provide less potential conflict with operations at NOAA, HMSC, and other facilities.

Provide bicycle and pedestrian facilities along US 101. Although the Yaquina Bay Bridge is currently limited to narrow sidewalks by its historic design, the section of US 101 south of the bridge can and should be improved to better serve both cyclists and pedestrians. (It should be noted that the highway is part of a designated scenic route for cyclists, in addition to its local functions.) The highway currently serves as the only access road for many businesses, and more development along the corridor is anticipated. Also, with the recent opening of Oregon Coast Community College's new site, there is likely to be increased use of this corridor by non-motorized users.

Appendices

APPENDIX A: CHARRETTE SCHEDULE

APPENDIX B: OPPORTUNITIES AND CONSTRAINTS

APPENDIX C: DRAFT CONCEPTS

APPENDIX D: COST ESTIMATES

APPENDIX E: FHWA ROUNDABOUT BROCHURE

APPENDIX F: CITY OF NEWPORT LIGHT FIXTURE STANDARD

	DAY ONE: Monday 12/07/09	DAY TWO: Tuesday 12/08/09	DAY THREE: Wednesday 12/09/09	DAY FOUR: Thursday 12/10/09
GOAL	*Charrette set-up*	*Development of concepts and alternatives*	*Development of refined/preferred alternatives*	*Production of final exhibits and closing presentation*
Morning 8am - 12pm	Travel to Newport	**Design Team Organization Meeting** (8-9am) **Design Team Work Session:** concept development	**Design Team Review Meeting** (8-9am) **Design Team Work Session:** Refined/ Preferred Alternatives **Coffee Break Presentation / Open Office Hours:** update on work to-date (9-10am)	**Design Team Review Meeting** (8-9am) **Design Team Work Session:** Final Products **Coffee Break Presentation / Open Office Hours:** update on work to-date (9-10am) **Stakeholder Check-Ins:** Reviews with stakeholders as necessary
Lunch 12 - 1pm	(No activities)	**Working Lunch:** Internal Design Team Meeting	**Working Lunch:** with Transportation Providers (City, ODOT) (12-1:30pm)	**Working Lunch:** Internal Design Team Meeting
Afternoon 1 - 5pm	Site Orientation Set-Up Initial Concepts	**Design Team Work Session:** development of alternatives **Stakeholder Check-Ins:** Reviews with stakeholders (as necessary)	**Stakeholder Review Meeting:** with Port, HMSC, NOAA, ODF&W, Aquarium, Rogue, Lincoln County Transit (1:30-3pm) **Design Team Work Session:** Preferred Scenario	**Design Team Work Session:** Final Products
Dinner 5 - 6pm	Dinner break	Dinner break	Dinner break	Dinner, final presentation prep
Evening 6 - 10pm	**City Council Presentation:** Overview of project issues, opportunities, and constraints, as well as Design Workshop schedule (approx. 6:30-7pm)	**Pin-Up Presentation / Open House:** public discussion of opportunities & constraints (from 11/17 meeting); design alternatives to-date; public input on designs (6:30-8pm)	**Pin-Up Presentation / Open House:** public discussion of refined/preferred alternatives (6:30-8pm)	Public Meeting: presentation of the week's work for public review and comment (6:30-8pm)

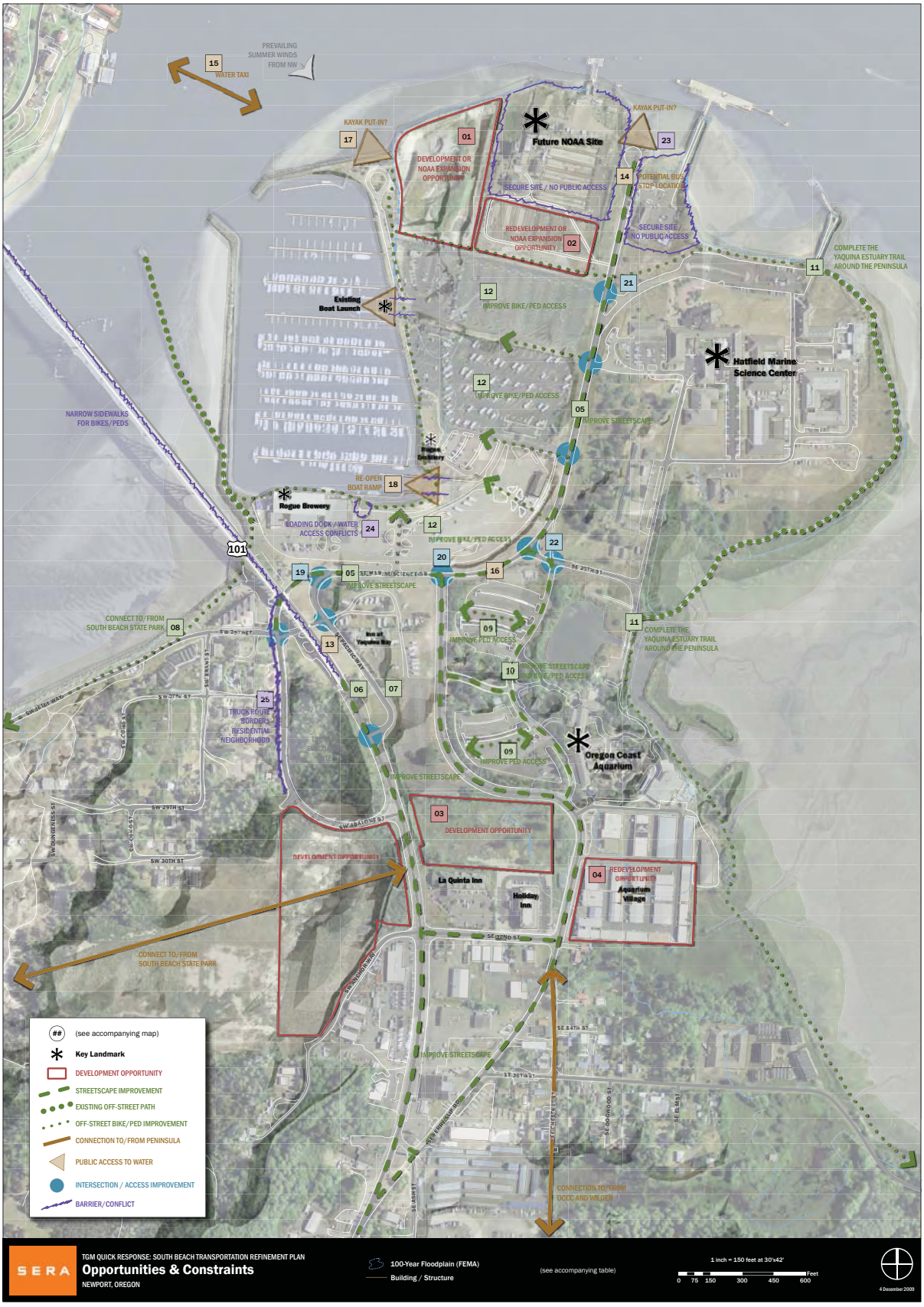
Design Team
w/ Transportation Proivders
w/ General Public
w/ Stakeholders

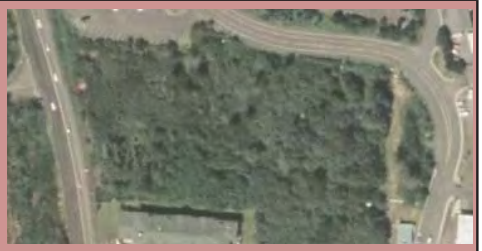
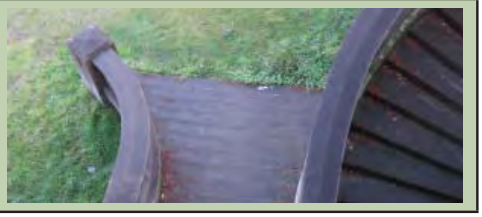
South Beach Peninsula Transportation Plan Charrette

Monday 12/7/09 through Thursday 12/10/09

Rogue Brewery (2320 OSU Drive), Newport, Oregon

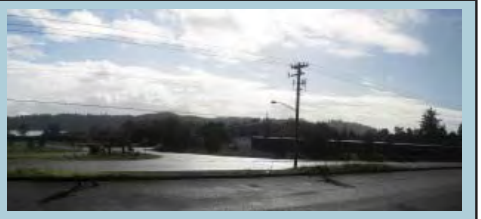
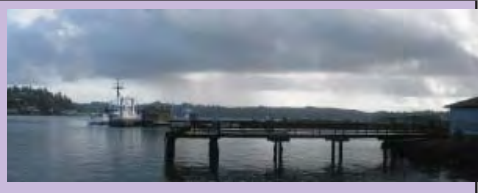
Schedule as of
1 December 2009


PREVAILING SUMMER WINDS FROM NW
15 WATER TAXI
KAYAK PUT-IN?
17
01
Future NOAA Site
DEVELOPMENT OR NOAA EXPANSION OPPORTUNITY
SECURE SITE / NO PUBLIC ACCESS
KAYAK PUT-IN?
23
14 POTENTIAL BUS STOP LOCATION
REDEVELOPMENT OR NOAA EXPANSION OPPORTUNITY 02
SECURE SITE / NO PUBLIC ACCESS
11 COMPLETE THE YAQUINA ESTUARY TRAIL AROUND THE PENINSULA
21
Existing Boat Launch
12 IMPROVE BIKE/PED ACCESS
Hatfield Marine Science Center
12 IMPROVE BIKE/PED ACCESS
05 IMPROVE STREETSCAPE
NARROW SIDEWALKS FOR BIKES/PEDS
Rogue Distillery
RE-OPEN BOAT RAMP 18
Rogue Brewery
LOADING DOCK / WATER ACCESS CONFLICTS 24
12 IMPROVE BIKE/PED ACCESS
22
101
20
19
05 IMPROVE STREETSCAPE
16
SE 35TH ST
CONNECT TO/FROM SOUTH BEACH STATE PARK 08
SW 2ND ST
Inn at Yaquina Bay
13
09 IMPROVE PED ACCESS
11 COMPLETE THE YAQUINA ESTUARY TRAIL AROUND THE PENINSULA
10 IMPROVE STREETSCAPE AND BIKE/PED ACCESS
06
07
SW ALDER WAY
25 TRUCK ROUTE BORDERS RESIDENTIAL NEIGHBORHOOD
09 IMPROVE PED ACCESS
Oregon Coast Aquarium
IMPROVE STREETSCAPE
SW 29TH ST
03 DEVELOPMENT OPPORTUNITY
SW ABALONE ST
DEVELOPMENT OPPORTUNITIES
SW 30TH ST
La Quinta Inn
Holiday Inn
04 REDEVELOPMENT OPPORTUNITY Aquarium Village
SE 32ND ST
CONNECT TO/FROM SOUTH BEACH STATE PARK
IMPROVE STREETSCAPE
SE 35TH ST
CONNECTION TO/FROM OCCC AND WILDER
(see accompanying map)
Key Landmark
DEVELOPMENT OPPORTUNITY
STREETSCAPE IMPROVEMENT
EXISTING OFF-STREET PATH
OFF-STREET BIKE/PED IMPROVEMENT
CONNECTION TO/FROM PENINSULA
PUBLIC ACCESS TO WATER
INTERSECTION / ACCESS IMPROVEMENT
BARRIER/CONFLICT
SERA
TGM QUICK RESPONSE: SOUTH BEACH TRANSPORTATION REFINEMENT PLAN
Opportunities & Constraints
NEWPORT, OREGON
100-Year Floodplain (FEMA)
Building / Structure
(see accompanying table)
1 inch = 150 feet at 30'x42'
0 75 150 300 450 600 Feet
4 December 2009

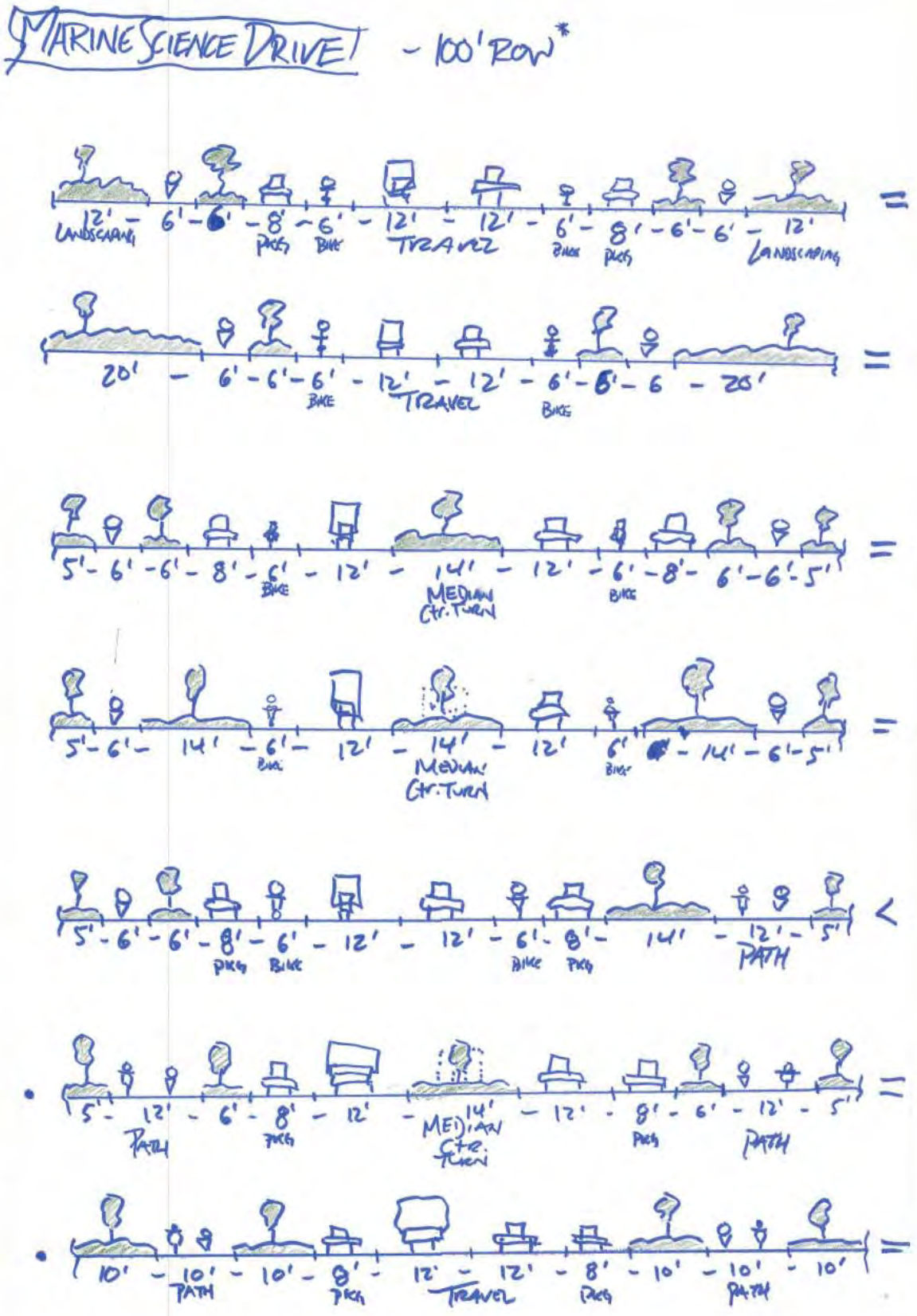
Map Key	Opportunity	Constraint	
Development Opportunity Sites			
01	■ Develop this large waterfront site with use compatible with district; or ■ Hold for potential NOAA expansion	■ Needed by Port for dredge spoils until alternate disposal site is secured ■ Must be used for marine purposes ■ If developed for non-NOAA use, NOAA expansion options would be limited	
02	■ Re-develop with use compatible with district ■ OR: hold for potential NOAA expansion	■ If developed for non-NOAA use, NOAA expansion options would be limited ■ Must be used for marine purposes	
03	■ Encourage development that contributes to district, takes advantage of proximity to Aquarium, Aquarium Village, Hwy 101, etc.	■ Private ownership = plans unknown ■ Portion of the site may be impacted by floodplain and/ or wetlands	
04	■ Re-develop with uses that continue to make most of adjacency to Aquarium ■ Develop to build a strong transition to new development to south: OCCC, Wilder, etc.	■ Portion of the site may be impacted by floodplain and/ or wetlands	
Streetscape / Pedestrian / Bicycle Improvements			
05	■ Provide improved facilities for cyclists and pedestrians along Marine Science Drive. Explore full range of options: sidewalks on one or both sides of road; on-street bike lanes; separated multi-use path; combination of above. ■ Improve streetscape generally with street trees, vegetation, pedestrian-scale lighting, etc.	■ Use of shoulders for overflow parking may limit streetscape options ■ Streetscape improvements may require additional right-of-way and/or easements ■ Available urban renewal funds may not be enough to cover full range of desired improvements	
06	■ Secure ODOT funds to connect existing bridge stairs to sidewalk network	■ Alternate accessible paths are needed	

Map Key	Opportunity	Constraint	
07	■ Enhance the pedestrian connection between Aquarium and bridge area, Sate Park, other uses to the west ■ Clarify and improve tsunami evacuation route	■ Existing connection and stair is not prominent or well known ■ There is no corresponding ADA-compliant path	
08	■ Provide path along SW Jetty Way, connecting South Beach State Park to the peninsula. This connection will allow Park visitors easy, non-auto access to peninsula attractions ■ Potential new waterfront path connection	■ Need to ensure a safe path for recreational users ■ Path would cross between private property and the bay for stretch between the Bridge and SW Jetty	
09	■ Improve pedestrian circulation across Aquarium parking with designated paths to reduce conflicts with vehicles ■ Design paths to encourage and direct pedestrians bound for destinations beyond parking lot	■ May necessitate the reconfiguration of existing parking areas	
10	■ Allow after-hours access for pedestrians and cyclists as an alternative to Ferry Slip Road	■ Need to address any potential security concerns for Aquarium ■ May need to upgrade lighting and streetscape	
11	■ Complete the Yaquina Estuary Trail around the peninsula, building upon the strong path system established at HMSC	■ Realization of the trail may be hampered by permitting concerns in the estuary itself, as well as by security concerns at NOAA and HMSC and by conflicts with vehicles and boat launches on the east side of the peninsula ■ Aquarium interrupts potential waterside path for non-Aquarium visitors	
12	■ Improve pedestrian access through Port-owned parking lots with designated paths to reduce conflicts with vehicles	■ May necessitate the reconfiguration of existing parking areas	

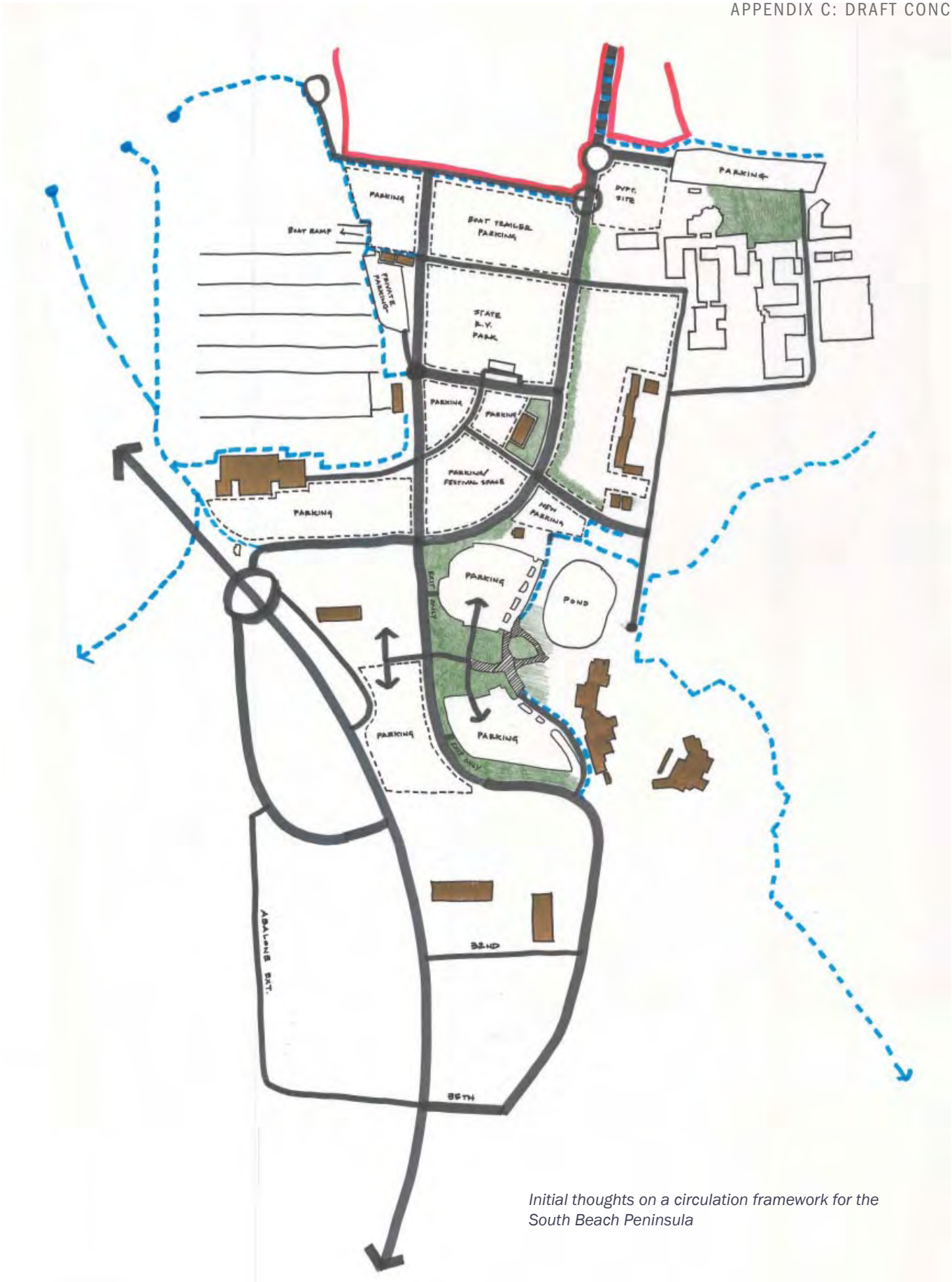
Map Key	Opportunity	Constraint	
Connections To/From the Peninsula			
13	■ Improve and clarify this direct access route from Hwy 101 to the peninsula	■ SW 26th St.. leg east of Abalone perceived as confusing, but potentially necessary ■ ODOT desires to close Pacific Way on-ramp (converting it to an off-ramp only)	
14	■ Work with transit providers, major facilities to augment transit connections to/from peninsula: expand Lincoln Transit Service to area and/or arrange new shuttle services to area	■ User base will likely not warrant expanded regularly scheduled service	
15	■ Provide water taxi to increase options for pedestrian and cyclist access; also: ■ Encourage a 'park once' approach for visitors to Bayfront S Beach attractions & events ■ Attract more Bayfront visitors to South Beach	■ Requires private sector operator and/or significant public expense to initiate ■ May require new dock facility (or facilities)	 (Example, from Vancouver, BC)
16	■ Provide an information booth or kiosk to help with wayfinding ■ Acknowledge intersection as an alternate entry for both Aquarium & HMSC = a significant decision point	■ Need to accommodate trucks and vehicles with trailers ■ Need vehicular pull-out to access kiosk	
17	■ Provide public access to water, taking advantage of strong visual connections to the bridge/bayfront; has existing restroom and picnic facilities ■ (See also #23)	■ Prevailing strong winds may make outdoor use undesirable	
18	■ Re-open south boat ramp for some degree of public access to the water	■ Environmental mitigation must be addressed ■ Re-opening the launch would interrupt the potential waterside path ■ Vehicular circulation may be complicated by the ramp's reopening	

Map Key	Opportunity	Constraint	
Intersection / Access Improvements			
19	■ Improve intersection of Marine Science Drive and Pacific Way, which offers most direct access from Hwy 101N	■ Current configuration & signage is confusing - especially “Do No Enter” sign on SE corner of intersection	
20	■ Improve intersection of Ferry Slip Road and Marine Science Drive; potentially align driveway access to Port / Rogue parking with Ferry Slip	■ Will require reconfiguration of Port / Rogue parking area ■ Need to examine overall circulation and access to various Port parking areas	
21	■ Improve access from Marine Science Drive to the HMSC. This could potentially creating a perpendicular access to Marine Science Drive at the northern edge of the HMSC campus, thereby creating an additional development site.	■ Requires HMSC investment, and may not occur until some future site development. ■ May make it difficult to align driveway accesses across Marine Science Drive.	
22	■ Improve access to parking lots and facilities from Marine Science Drive ■ Consider aligning accesses across Marine Science Drive to create four-leg intersections	■ May require reconfiguration of existing access or parking lots	
Barriers / Conflicts			
23	■ Maintain - or provide alternative to - this traditional point of water access for kayakers, etc. ■ Accommodate likely visitors with interpretive signage re: surrounding uses: NOAA, HMSC, etc. ■ (See also #17)	■ NOAA (and OSU) pier security concerns make kayak put-in less viable	
24	■ Extend pedestrian walkway along existing dock ■ Improve current conflict between tour boat access and Rogue loading dock activities	■ Need to address potential conflict between public access to dock and Rogue loading activity	

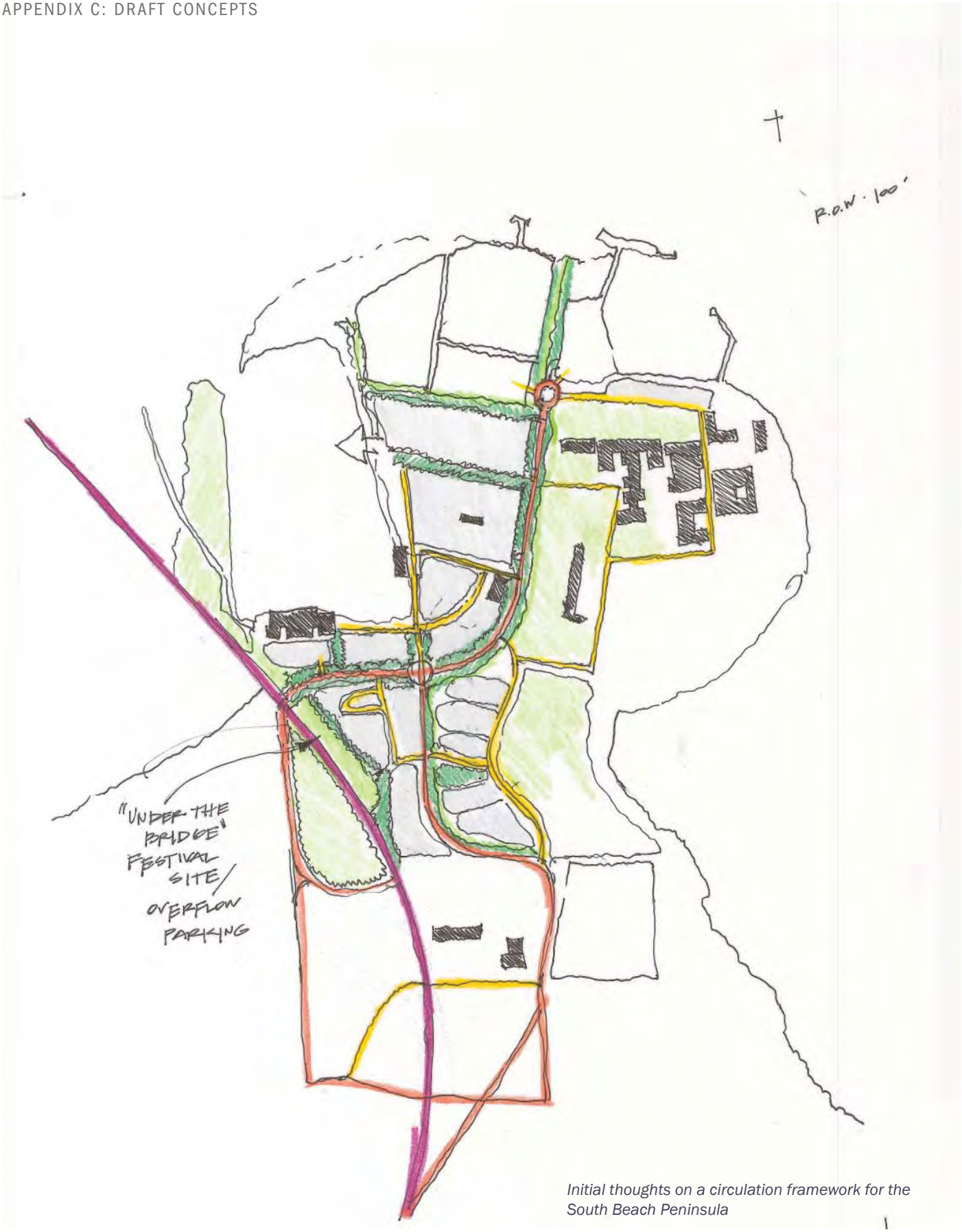
Map Key	Opportunity	Constraint	
25	■ Maintain Abalone Street access, which is more direct access to the area than 35th offers	■ Potential tension between trucks and residential neighborhood: noise, etc.	
Signage			
	■ Create district-wide, coordinated signage to help "brand" entire area as a destination ■ Coordinate signage with identified decision points	■ Need to coordinate signage with individual institutional identity needs and signage programs ■ Some aspects of current signage get "lost" - esp. light blue color	
	■ Clarify and coordinate all signage, whether ODOT, district, or private	■ Current private and ODOT signage sometimes have conflicting message: e.g., private Aquarium sign directs traffic to "Next Left" while nearby ODOT sign directs to right.	



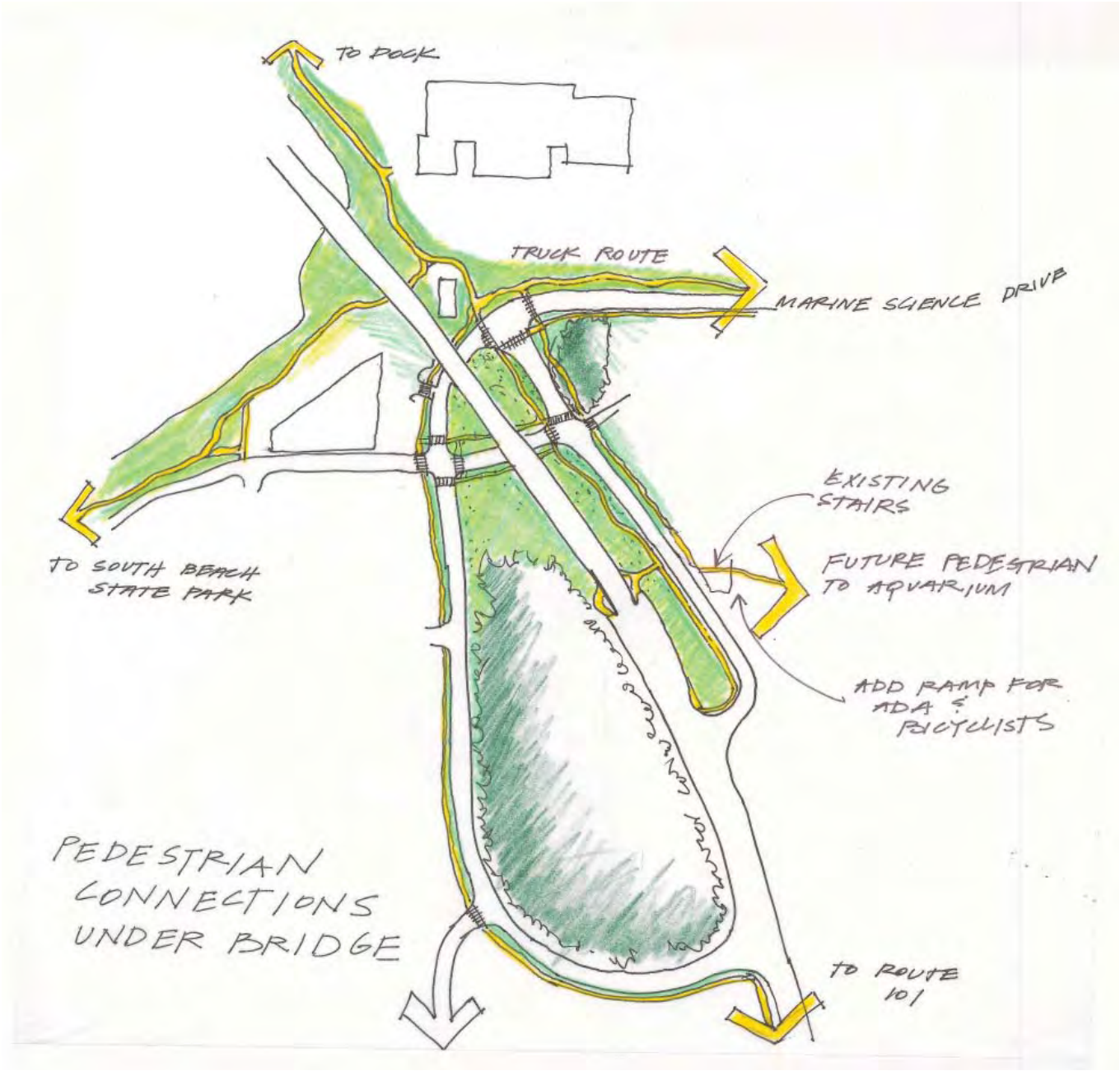
Initial thoughts on the SE Marine Science Drive cross-section



Initial thoughts on a circulation framework for the South Beach Peninsula



Initial thoughts on a circulation framework for the South Beach Peninsula



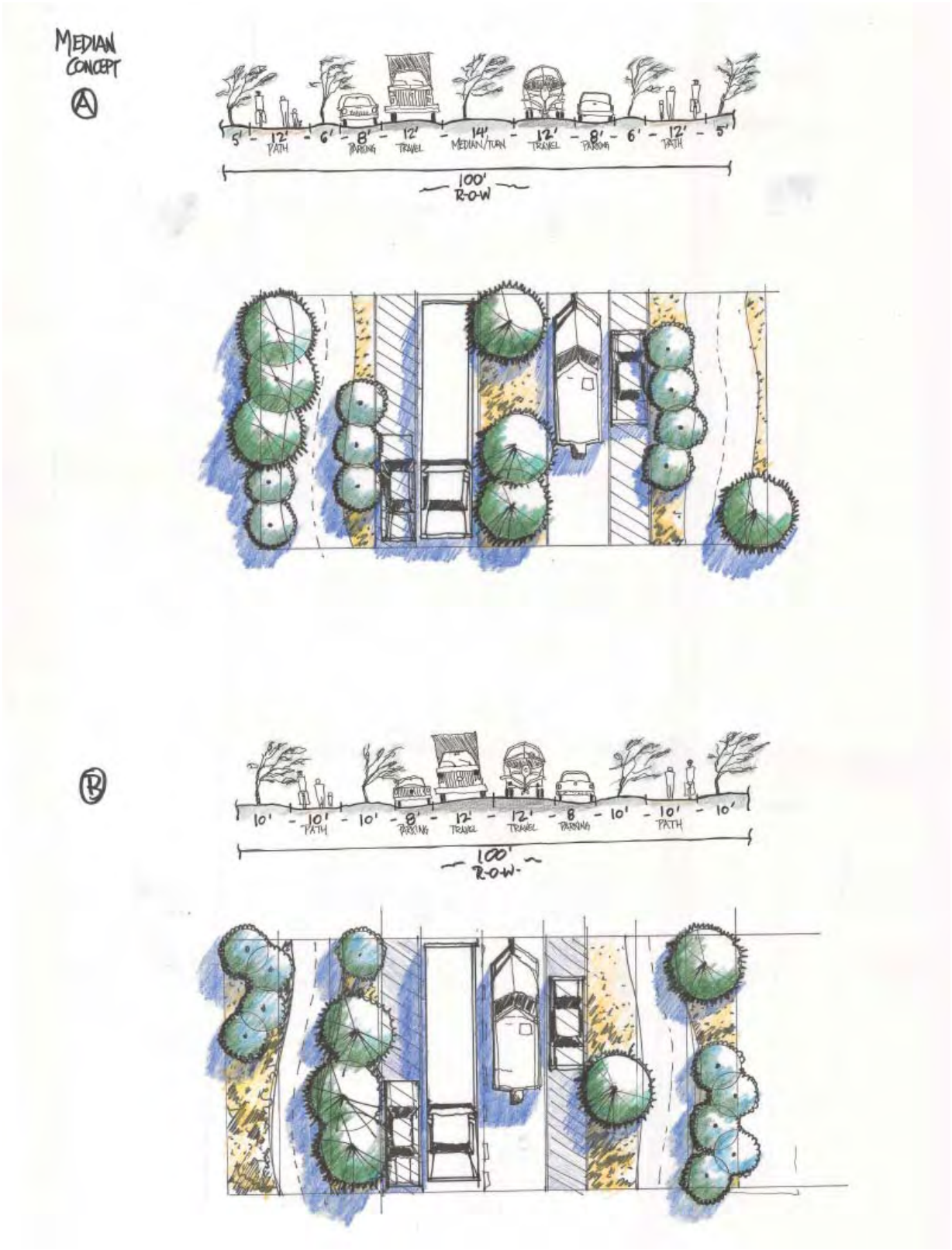
Refined study of the ODOT-owned area under the Yaquina Bay Bridge







Quick studies of access and circulation for the Oregon Coast Aquarium site



Refined studies of SE Marine Science Drive

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: February 3, 2010 Project #: 10593

To: Matt Crall
Transportation and Growth Management Program
635 Capital Street NE, Suite 150
Salem, OR 97301-2540

From: Matt Hughart
Project: Quick Response - City of Newport South Beach Transportation
Subject: Project Cost Estimates

COST ESTIMATION

Planning level cost estimates have been prepared for the identified projects in the South Beach Transportation Refinement Plan. A description of these projects are provided in the sections below along with the summary cost estimate tables for each. The cost estimates include a breakdown of major construction elements (sub-base earthwork, pavement structure, curbing, street lighting, etc.). Groups of items (such as the design, project management, and construction management) are lumped together, and the estimates provided are based on similar work for other projects.

Pacific Way Realignment at Marine Science Drive

Pacific Way is an ODOT owned and maintained roadway that connects the Yaquina Bay Bridge with Marine Science Drive. The following improvements have been identified for this roadway:

- Realignment of a short segment of Pacific Way to better delineate (through improved channelization) and connect to Marine Science Drive.
- The provision of sidewalks along the west side of Pacific Way from the new intersection at Marine Science Drive up to the existing Yaquina Bay Bridge pedestrian access stairs. It is assumed that the sidewalk will connect to both sets of access stairs.
- The provision of a sidewalk along the east side of Pacific Way from Marine Science Drive to the southern property line of the Inn at Yaquina Bay Motel and the adjacent stairway that leads down to the Oregon Coast Aquarium overflow parking lot.
- Pedestrian scale lighting at the sidewalk connections to the Yaquina Bay Bridge access stairs.
- Sidewalks on the 26th Street connector from Abalone Street to Pacific Way.

Table 1 summarizes the estimated project cost associated with this project. The backup calculation that form the basis for these cost estimates are summarized in Appendix A.

Table 1 Pacific Way Realignment at Marine Science Drive and Sidewalk Connections

Description	Cost
Construction Cost[1]	$193,000
Contingency (40%)	$77,000
Subtotal for Estimated Construction Cost:	*$270,000*
Project Management, Engineering & Construction Management	$81,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$351,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$351,000**

[1]All costs are in 2010 dollars.
[2]Assumes that all necessary right-of-way is available or would be dedicated.

Jetty / State Park Trail Connection

A new multi-use recreational trail has been identified to provide a better connection between the South Beach peninsula and the nearby South Beach State Park. This project involves the following improvements:

- A new 8′ wide asphalt multi-use trail that would start near the 26th Street/Brant Street intersection, travel north between the adjacent condominiums and Yaquina Bay, connect to the existing jetty walkway, and ultimately connect back to Marine Science Drive near the realigned Pacific Way intersection.
- Pedestrian scale path lighting assuming a light standard spacing of approximately 50′.

Table 2 summarizes the estimated project cost associated with this project. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 2 Jetty / State Park Trail Connection

Description	Cost
Construction Cost[1]	$174,000
Contingency (40%)	$70,000
Subtotal for Estimated Construction Cost:	*$244,000*
Project Management, Engineering & Construction Management	$73,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$317,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$317,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

Marine Science Drive Streetscape Improvements

Two sets of streetscape complimentary improvements have been identified for the segment of Marine Science Drive between Pacific Way and the south property line of the future NOAA site. The first set of improvements involves the provision of a multi-use recreational trail and a landscaping/drainage swale along the north/west side of Marine Science Drive. The second set of improvements involves the development of gravel on-street parking areas along both sides of Marine Science Drive and a walking path along the south/east side of the roadway. To assist the City of Newport in the prioritization of these two sets of complimentary projects, two separate sets of cost estimates have been prepared as outlined below.

Multi-Use Trail/Landscaping – North/West Side of Marine Science Drive

This project involves the following improvements:

- A new 8′ wide asphalt multi-use trail that would traverse the entire north/west side of Marine Science Drive from Pacific Way up to the south property line of the future NOAA site.
- A 10′ wide landscaping/drainage swale between the new multi-use trail and the existing Marine Science Drive travel lanes.
- Pedestrian scale path lighting assuming a light standard spacing of approximately 50′.

Table 3 summarizes the estimated project cost associated with this project. The estimates have been broken out into four different roadway segments. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 3 Marine Science Drive Improvements (Multi-Use Trail/Landscaping – West Side)

Description	Cost
Pacific Way to Ferry Slip Road	
Construction Cost[1]	$159,000
Contingency (40%)	$63,000
Subtotal for Estimated Construction Cost:	*$222,000*
Project Management, Engineering & Construction Management	$67,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$289,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$289,000**
Ferry Slip Road to RV Parking Access Road	
Construction Cost[1]	$223,000
Contingency (40%)	$89,000
Subtotal for Estimated Construction Cost:	*$312,000*

Project Management, Engineering & Construction Management	$94,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$406,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$406,000**
RV Parking Access Road to Realigned HSMC/Boat Ramp Entrance	
Construction Cost[1]	$196,000
Contingency (40%)	$78,000
Subtotal for Estimated Construction Cost:	*$274,000*
Project Management, Engineering & Construction Management	$82,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$356,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$356,000**
Realigned HSMC/Boat Ramp Entrance to Southern NOAA Property Line	
Construction Cost[1]	$56,000
Contingency (40%)	$22,000
Subtotal for Estimated Construction Cost:	*$78,000*
Project Management, Engineering & Construction Management	$23,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$101,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$101,000**
Total Segment Cost	**$1,152,000[3]**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.
[3]It should be noted that while the cost estimates have been separated into the four different roadway segments for planning and prioritization purposes, there is a degree of cost savings that could be had assuming all roadway segments were constructed as part of the same project.

On-Street Gravel Parking & East Side Sidewalk - South/East Side of Marine Science Drive

This project involves the following improvements:

- 10′ wide on-street gravel parking along both sides of Marine Science Drive.
- A new 5′ wide asphalt path that would traverse the entire south/east side of Marine Science Drive from Pacific Way up to the south property line of the future NOAA site.

Table 4 summarizes the estimated project cost associated with this project. The estimates have been broken out into four different roadway segments. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 4 Marine Science Drive Improvements
(On-Street Gravel Parking & East Side Sidewalk)

Description	Cost
Pacific Way to Ferry Slip Road	
Construction Cost[1]	$119,000
Contingency (40%)	$47,000
Subtotal for Estimated Construction Cost:	*$166,000*
Project Management, Engineering & Construction Management	$50,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$216,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$216,000**
Ferry Slip Road to RV Parking Access Road	
Construction Cost[1]	$158,000
Contingency (40%)	$63,000
Subtotal for Estimated Construction Cost:	*$221,000*
Project Management, Engineering & Construction Management	$66,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$287,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$287,000**
RV Parking Access Road to Realigned HSMC/Boat Ramp Entrance	
Construction Cost[1]	$201,000
Contingency (40%)	$81,000
Subtotal for Estimated Construction Cost:	*$282,000*
Project Management, Engineering & Construction Management	$85,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$367,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$367,000**
Realigned HSMC/Boat Ramp Entrance to Southern NOAA Property Line	
Construction Cost[1]	$53,000
Contingency (40%)	$21,000
Subtotal for Estimated Construction Cost:	*$74,000*
Project Management, Engineering & Construction Management	$22,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$96,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$96,000**
Total Segment Cost	**$966,000[3]**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.
[3]It should be noted that while the cost estimates have been separated into the four different roadway segments for

planning and prioritization purposes, there is a degree of cost savings that could be had assuming all roadway segments were constructed as part of the same project.

Marine Science Drive/Ferry Slip Road Intersection Improvements

Intersection improvements have been identified for the Marine Science Drive/Ferry Slip Road intersection to improve its capacity and functionality during the peak tourism and event season. These improvements focus on the development of a westbound left-turn lane on Marine Science Drive with 150′ of storage. Table 5 summarizes the estimate project cost associated with this project. It should be noted that the estimate includes some provisions for pedestrian crosswalks, however it does not assume major sidewalk improvements. Those estimates are included in the Marine Science Drive streetscape improvement project.

Table 5 Marine Science Drive / Ferry Slip Road Intersection (Widening for WB Left-Turn Lane)

Description	Cost
Construction Cost[1]	$64,000
Contingency (40%)	$26,000
Subtotal for Estimated Construction Cost:	*$90,000*
Project Management, Engineering & Construction Management	$27,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$779,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$117,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

Adding a Fourth Intersection Approach to the Marine Science Drive/Ferry Slip Road Intersection

For access management purposes, a new access to the Port parking lot and Rogue Brewing has been identified at the existing Marine Science Drive/Ferry Slip Road intersection. This project involves the following improvements:

- A new 24′ wide parking lot access road connecting to the north quadrant of the existing Marine Science Drive/Ferry Slip Road intersection.
- A new eastbound left-turn lane on Marine Science Drive to access the parking lot access road.
- 5′ wide sidewalks along the east and west sides of the new parking lot access road.

Table 6 summarizes the estimated project cost associated with this project. The estimates have been broken out into four different roadway segments. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 6 Marine Science Drive / Ferry Slip Road Intersection (Adding a New Fourth Intersection Approach)

Description	Cost
Construction Cost[1]	$121,000
Contingency (40%)	$48,000
Subtotal for Estimated Construction Cost:	*$169,000*
Project Management, Engineering & Construction Management	$51,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$220,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$220,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

25th Street Realignment at Marine Science Drive

The 25th Street intersection at Marine Science Drive is currently a wide intersection that intersects Marine Science Drive at a slight skew angle. In an effort to better align the intersection and narrow the pavement section, it is proposed that a short segment of 25th Street be realigned just to the north of its current intersection with Marine Science Drive. In addition to this realignment, a new 5′ wide pedestrian path is proposed along the south side of 25th Street connecting Marine Science Drive to the exiting Yaquina Estuary Trail. Table 7 summarizes the estimate project cost associated with these components. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 7 Realignment of 25th Street at Marine Science Drive

Description	Cost
Construction Cost[1]	$61,000
Contingency (40%)	$24,000
Subtotal for Estimated Construction Cost:	*$85,000*
Project Management, Engineering & Construction Management	$26,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$111,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$111,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

Marine Science Drive/HSMC/Boat Ramp Intersection Improvements

Two different sets of intersection improvement alternatives have been identified for a realigned and consolidated intersection involving Marine Science Drive, the main access road to HSMC, and the entrance driveway to the marina boat ramp. The first alternative involves a more conventional stop-controlled intersection while the second alternative involves the provision of a roundabout.

Conventional Stop-Controlled Intersection

This project involves the following improvements:

- A new northbound left-turn lane on Marine Science Drive to access the marina boat ramp and parking lot.
- Realignment of the existing HSMC access road so that it intersects Marine Science Drive across from the marina boat ramp entry driveway.

Table 8 summarizes the estimated project cost associated with this project. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 8 Marine Science Drive/HSMC/Boat Ramp Intersection (Conventional Stop-Controlled Intersection)

Description	Cost
Construction Cost[1]	$108,000
Contingency (40%)	$43,000
Subtotal for Estimated Construction Cost:	*$151,000*
Project Management, Engineering & Construction Management	$46,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$197,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$197,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

Given that the cost to realign the HSMC access road is a critical element to this overall intersection improvement scenario, its cost has been included in Table 8. However, for planning purposes, it has been estimated that the cost realign the HSMC access road by itself is approximately $77,000.

Roundabout Intersection

This project involves the following improvements:

- A new roundabout intersection that would bring together Marine Science Drive, the HSMC access road, and the marina boat ramp entrance driveway.
- The roundabout would be sized (inscribed circle diameter of 150') to accommodate up to a WB-65 foot tractor-trailer and articulated fuel delivery trucks up to 75 feet in length.
- Realignment of the existing HSMC access road so that it intersects Marine Science Drive roughly across from the marina boat ramp entry driveway.
- Relatively small modifications to the marina parking lot to accommodate the roundabout.
- A 10' wide sidewalk around the perimeter of the roundabout.

Table 9 summarizes the estimated project cost associated with the roundabout. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 9 Marine Science Drive/HSMC/Boat Ramp Intersection (Roundabout Intersection)

Description	Cost
Construction Cost[1]	$439,000
Contingency (40%)	$175,000
Subtotal for Estimated Construction Cost:	*$614,000*
Project Management, Engineering & Construction Management	$184,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$798,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$798,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

Given that the cost to realign the HSMC access road is a critical element to completing the roundabout improvement scenario, its cost has been included in Table 9. However, for planning purposes, it has been estimated that the cost to remove the existing the HSMC access road and realign it to the roundabout by itself is approximately $16,000.

Ferry Slip Road Streetscape Improvements

This project involves the following improvements:

- A new 8′ multi-use path along the west side of Ferry Slip Road from Marine Science Drive to 32nd Street.
- A new 5′ wide path along the east side of Ferry Slip Road from Marine Science Drive to 32nd Street.
- A 10′ wide landscaping/drainage swale between the new multi-use trail and the existing Marine Science Drive travel lanes.

Table 10 summarizes the estimated project cost associated with the roundabout. The detailed quantity estimates that form the basis for these cost estimates are summarized in Appendix A.

Table 10 Ferry Slip Road Streetscape Improvements

Description	Cost
Construction Cost[1]	$234,000
Contingency (40%)	$94,000
Subtotal for Estimated Construction Cost:	*$328,000*
Project Management, Engineering & Construction Management	$99,000
Subtotal for Estimated Project Cost (excluding Right-of-Way):	*$427,000*
Total Project Right-of-Way[2]	$-
Total Estimated Project Cost	**$427,000**

[1]All costs are in 2010 dollars.
[2]Assumed that all necessary right-of-way is available or would be dedicated.

Appendix A – Cost Estimate Worksheets

ESTIMATED PROJECT COST SUMMARY

Pacific Way Realignment at Marine Science Drive Including Pacific Way Sidewalks

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.43	$8,000.00	$3,440
Excavation (Cut)	cu. yd.	399.60	$15.00	$5,994
Embankment (Fill)	cu. yd.	677.10	$20.00	$13,542
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	5,400.00	$6.00	$32,400
New Curb	lin. ft.	300.00	$16.00	$4,800
New Sidewalk	sq. ft.	9,150.00	$4.00	$36,600
Pavement Removal	sq. yd.	466.66	$10.00	$4,667
				$101,443
Storm Drainage System	% of Subtotal A	25%	TBD	$25,361
Landscape Improvement	% of Subtotal A	5%	TBD	$5,072
Signing and Striping	% of Subtotal A	5%	TBD	$5,072
Street Lighting	Lump/Sum	1	TBD	$24,000
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$59,505
Subtotal 1 (Subtotals A + B)				$160,948
Mobilization	% of Subtotal 1		10%	$16,095
Traffic Control	% of Subtotal 1		10%	$16,095
Subtotal 2 (Mobilization & Traffic Control)				$32,190
Total (Subtotals 1 + 2)				$193,138
Plus Contingencies	% of Total		40%	$77,255
Estimated Construction Cost				**$270,393**
Architectural/Engineering	% of Est. Cost		20%	$54,079
Construction Management	% of Est. Cost		10%	$27,039
Estimated Professional Fees				**$81,118**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$351,511**

ESTIMATED PROJECT COST SUMMARY

Jetty/State Park Trail Connection

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.14	$8,000.00	$1,101
Excavation (Cut)	cu. yd.	66.60	$15.00	$999
Embankment (Fill)	cu. yd.	310.80	$20.00	$6,216
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	-	$16.00	$0
New Trail	sq. ft.	6,000.00	$2.50	$15,000
Pavement Removal	sq. yd.	-	$10.00	$0
				$23,316
Storm Drainage System	% of Subtotal A	0%	TBD	$0
Landscape Improvement	% of Subtotal A	5%	TBD	$1,166
Signing and Striping	% of Subtotal A	3%	TBD	$699
Path Lighting	Lump/Sum	1	TBD	$120,000
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$121,865
Subtotal 1 (Subtotals A + B)				$145,181
Mobilization	% of Subtotal 1		10%	$14,518
Traffic Control	% of Subtotal 1		10%	$14,518
Subtotal 2 (Mobilization & Traffic Control)				$29,036
Total (Subtotals 1 + 2)				$174,217
Plus Contingencies	% of Total		40%	$69,687
Estimated Construction Cost				**$243,904**
Architectural/Engineering	% of Est. Cost		20%	$48,781
Construction Management	% of Est. Cost		10%	$24,390
Estimated Professional Fees				**$73,171**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$317,076**

ESTIMATED PROJECT COST SUMMARY

MSD from Pacific Way to Ferry Slip Road (just Trail and Landscaping)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.28	$8,000.00	$2,229
Excavation (Cut)	cu. yd.	649.35	$15.00	$9,740
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	-	$16.00	$0
New Trail	sq. ft.	5,400.00	$2.50	$13,500
Pavement Removal	sq. yd.	-	$10.00	$0
				$25,470
Storm Drainage System	% of Subtotal A	10%	TBD	$2,547
Landscape Improvement	% of Subtotal A	33%	TBD	$8,405
Signing and Striping	% of Subtotal A	0%	TBD	$0
Street Lighting	Lump/Sum	1	TBD	$108,000
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$118,952
Subtotal 1 (Subtotals A + B)				$144,422
Mobilization	% of Subtotal 1		10%	$14,442
Traffic Control	% of Subtotal 1		0%	$0
Subtotal 2 (Mobilization & Traffic Control)				$14,442
Total (Subtotals 1 + 2)				$158,864
Plus Contingencies	% of Total		40%	$63,545
Estimated Construction Cost				**$222,409**
Architectural/Engineering	% of Est. Cost		20%	$44,482
Construction Management	% of Est. Cost		10%	$22,241
Estimated Professional Fees				**$66,723**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$289,132**

ESTIMATED PROJECT COST SUMMARY

MSD from Ferry Slip Road to RV Driveway (just Trail and Landscaping)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.37	$8,000.00	$2,972
Excavation (Cut)	cu. yd.	1,398.60	$15.00	$20,979
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	-	$16.00	$0
New Trail	sq. ft.	7,200.00	$2.50	$18,000
Pavement Removal	sq. yd.	-	$10.00	$0
				$41,951
Storm Drainage System	% of Subtotal A	10%	TBD	$4,195
Landscape Improvement	% of Subtotal A	30%	TBD	$12,585
Signing and Striping	% of Subtotal A	0%	TBD	$0
Street Lighting	Lump/Sum	1	TBD	$144,000
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$160,781
Subtotal 1 (Subtotals A + B)				$202,732
Mobilization	% of Subtotal 1		10%	$20,273
Traffic Control	% of Subtotal 1		0%	$0
Subtotal 2 (Mobilization & Traffic Control)				$20,273
Total (Subtotals 1 + 2)				$223,005
Plus Contingencies	% of Total		40%	$89,202
Estimated Construction Cost				**$312,207**
Architectural/Engineering	% of Est. Cost		20%	$62,441
Construction Management	% of Est. Cost		10%	$31,221
Estimated Professional Fees				**$93,662**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$405,870**

ESTIMATED PROJECT COST SUMMARY

MSD from RV Driveway to Hatfield (just Trail and Landscaping)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.33	$8,000.00	$2,609
Excavation (Cut)	cu. yd.	1,227.66	$15.00	$18,415
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	-	$16.00	$0
New Trail	sq. ft.	6,320.00	$2.50	$15,800
Pavement Removal	sq. yd.	-	$10.00	$0
				$36,824
Storm Drainage System	% of Subtotal A	10%	TBD	$3,682
Landscape Improvement	% of Subtotal A	30%	TBD	$11,047
Signing and Striping	% of Subtotal A	0%	TBD	$0
Street Lighting	Lump/Sum	1	TBD	$126,400
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$141,130
Subtotal 1 (Subtotals A + B)				$177,954
Mobilization	% of Subtotal 1		10%	$17,795
Traffic Control	% of Subtotal 1		0%	$0
Subtotal 2 (Mobilization & Traffic Control)				$17,795
Total (Subtotals 1 + 2)				$195,749
Plus Contingencies	% of Total		40%	$78,300
Estimated Construction Cost				**$274,049**
Architectural/Engineering	% of Est. Cost		20%	$54,810
Construction Management	% of Est. Cost		10%	$27,405
Estimated Professional Fees				**$82,215**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$356,263**

ESTIMATED PROJECT COST SUMMARY

MSD from Hatfield to South NOAA Property (just Trail and Landscaping)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.09	$8,000.00	$743
Excavation (Cut)	cu. yd.	349.65	$15.00	$5,245
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	-	$16.00	$0
New Trail	sq. ft.	1,800.00	$2.50	$4,500
Pavement Removal	sq. yd.	-	$10.00	$0
				$10,488
Storm Drainage System	% of Subtotal A	10%	TBD	$1,049
Landscape Improvement	% of Subtotal A	29%	TBD	$3,041
Signing and Striping	% of Subtotal A	0%	TBD	$0
Street Lighting	Lump/Sum	1	TBD	$36,000
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$40,090
Subtotal 1 (Subtotals A + B)				$50,578
Mobilization	% of Subtotal 1		10%	$5,058
Traffic Control	% of Subtotal 1		0%	$0
Subtotal 2 (Mobilization & Traffic Control)				$5,058
Total (Subtotals 1 + 2)				$55,636
Plus Contingencies	% of Total		40%	$22,254
Estimated Construction Cost				**$77,890**
Architectural/Engineering	% of Est. Cost		20%	$15,578
Construction Management	% of Est. Cost		10%	$7,789
Estimated Professional Fees				**$23,367**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$101,257**

ESTIMATED PROJECT COST SUMMARY

MSD from Pacific Way to South NOAA (just Trail and Landscaping)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	1.07	$8,000.00	$8,554
Excavation (Cut)	cu. yd.	3,625.26	$15.00	$54,379
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	-	$16.00	$0
New Trail	sq. ft.	20,720.00	$2.50	$51,800
Pavement Removal	sq. yd.	-	$10.00	$0
				$114,733
Storm Drainage System	% of Subtotal A	10%	TBD	$11,473
Landscape Improvement	% of Subtotal A	31%	TBD	$34,994
Signing and Striping	% of Subtotal A	0%	TBD	$0
Street Lighting	Lump/Sum	1	TBD	$414,400
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$460,867
Subtotal 1 (Subtotals A + B)				$575,600
Mobilization	% of Subtotal 1		8%	$46,048
Traffic Control	% of Subtotal 1		0%	$0
Subtotal 2 (Mobilization & Traffic Control)				$46,048
Total (Subtotals 1 + 2)				$621,648
Plus Contingencies	% of Total		40%	$248,659
Estimated Construction Cost				**$870,307**
Architectural/Engineering	% of Est. Cost		20%	$174,061
Construction Management	% of Est. Cost		10%	$87,031
Estimated Professional Fees				**$261,092**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$1,131,399**

ESTIMATED PROJECT COST SUMMARY

MSD from Pacific Way to Ferry Slip Road (just On-Street Parking and SW)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.39	$8,000.00	$3,096
Excavation (Cut)	cu. yd.	749.25	$15.00	$11,239
Embankment (Fill)	cu. yd.	249.75	$20.00	$4,995
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	13,500.00	$3.00	$40,500
New Curb	lin. ft.	1,350.00	$16.00	$21,600
New Trail	sq. ft.	3,375.00	$2.50	$8,438
Pavement Removal	sq. yd.	-	$10.00	$0
				$89,868
Storm Drainage System	% of Subtotal A	5%	TBD	$4,493
Landscape Improvement	% of Subtotal A	0%	TBD	$0
Signing and Striping	% of Subtotal A	5%	TBD	$4,493
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$8,987
Subtotal 1 (Subtotals A + B)				$98,854
Mobilization	% of Subtotal 1		10%	$9,885
Traffic Control	% of Subtotal 1		10%	$9,885
Subtotal 2 (Mobilization & Traffic Control)				$19,771
Total (Subtotals 1 + 2)				$118,625
Plus Contingencies	% of Total		40%	$47,450
Estimated Construction Cost				**$166,075**
Architectural/Engineering	% of Est. Cost		20%	$33,215
Construction Management	% of Est. Cost		10%	$16,608
Estimated Professional Fees				**$49,823**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$215,898**

ESTIMATED PROJECT COST SUMMARY

MSD from Ferry Slip Road to RV Driveway (just On-Street Parking and SW)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.52	$8,000.00	$4,128
Excavation (Cut)	cu. yd.	999.00	$15.00	$14,985
Embankment (Fill)	cu. yd.	333.00	$20.00	$6,660
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	18,000.00	$3.00	$54,000
New Curb	lin. ft.	1,800.00	$16.00	$28,800
New Trail	sq. ft.	4,500.00	$2.50	$11,250
Pavement Removal	sq. yd.	-	$10.00	$0
				$119,823
Storm Drainage System	% of Subtotal A	5%	TBD	$5,991
Landscape Improvement	% of Subtotal A	0%	TBD	$0
Signing and Striping	% of Subtotal A	5%	TBD	$5,991
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$11,982
Subtotal 1 (Subtotals A + B)				$131,806
Mobilization	% of Subtotal 1		10%	$13,181
Traffic Control	% of Subtotal 1		10%	$13,181
Subtotal 2 (Mobilization & Traffic Control)				$26,361
Total (Subtotals 1 + 2)				$158,167
Plus Contingencies	% of Total		40%	$63,267
Estimated Construction Cost				**$221,434**
Architectural/Engineering	% of Est. Cost		20%	$44,287
Construction Management	% of Est. Cost		10%	$22,143
Estimated Professional Fees				**$66,430**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$287,864**

ESTIMATED PROJECT COST SUMMARY

MSD from RV Driveway to Hatfield (just On-Street Parking and SW)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.45	$8,000.00	$3,624
Excavation (Cut)	cu. yd.	876.90	$15.00	$13,154
Embankment (Fill)	cu. yd.	292.30	$20.00	$5,846
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	15,800.00	$3.00	$47,400
New Curb	lin. ft.	1,580.00	$16.00	$25,280
New Trail	sq. ft.	3,950.00	$2.50	$9,875
Pavement Removal	sq. yd.	-	$10.00	$0
				$105,178
Storm Drainage System	% of Subtotal A	5%	TBD	$5,259
Landscape Improvement	% of Subtotal A	0%	TBD	$0
Signing and Striping	% of Subtotal A	5%	TBD	$5,259
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$10,518
Subtotal 1 (Subtotals A + B)				$115,696
Mobilization	% of Subtotal 1		10%	$11,570
Traffic Control	% of Subtotal 1		10%	$11,570
Subtotal 2 (Mobilization & Traffic Control)				$23,139
Total (Subtotals 1 + 2)				$138,835
Plus Contingencies	% of Total		40%	$55,534
Estimated Construction Cost				**$194,370**
Architectural/Engineering	% of Est. Cost		20%	$38,874
Construction Management	% of Est. Cost		10%	$19,437
Estimated Professional Fees				**$58,311**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$252,680**

ESTIMATED PROJECT COST SUMMARY

MSD from Hatfield to South NOAA Property (just Trail and Landscaping)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.13	$8,000.00	$1,032
Excavation (Cut)	cu. yd.	249.75	$15.00	$3,746
Embankment (Fill)	cu. yd.	83.25	$20.00	$1,665
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	4,500.00	$3.00	$13,500
New Curb	lin. ft.	450.00	$16.00	$7,200
New Trail	sq. ft.	1,125.00	$2.50	$2,813
Pavement Removal	sq. yd.	-	$10.00	$0
				$29,956
Storm Drainage System	% of Subtotal A	5%	TBD	$1,498
Landscape Improvement	% of Subtotal A	0%	TBD	$0
Signing and Striping	% of Subtotal A	5%	TBD	$1,498
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$2,996
Subtotal 1 (Subtotals A + B)				$32,951
Mobilization	% of Subtotal 1		10%	$3,295
Traffic Control	% of Subtotal 1		10%	$3,295
Subtotal 2 (Mobilization & Traffic Control)				$6,590
Total (Subtotals 1 + 2)				$39,542
Plus Contingencies	% of Total		40%	$15,817
Estimated Construction Cost				**$55,358**
Architectural/Engineering	% of Est. Cost		20%	$11,072
Construction Management	% of Est. Cost		10%	$5,536
Estimated Professional Fees				**$16,608**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$71,966**

ESTIMATED PROJECT COST SUMMARY

MSD from Pacific Way to South NOAA (just On-Street Parking and SW)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	1.49	$8,000.00	$11,881
Excavation (Cut)	cu. yd.	2,874.90	$15.00	$43,124
Embankment (Fill)	cu. yd.	958.30	$20.00	$19,166
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	51,800.00	$3.00	$155,400
New Curb	lin. ft.	5,180.00	$16.00	$82,880
New Trail	sq. ft.	12,950.00	$2.50	$32,375
Pavement Removal	sq. yd.	-	$10.00	$0
				$344,825
Storm Drainage System	% of Subtotal A	5%	TBD	$17,241
Landscape Improvement	% of Subtotal A	0%	TBD	$0
Signing and Striping	% of Subtotal A	5%	TBD	$17,241
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$34,483
Subtotal 1 (Subtotals A + B)				$379,308
Mobilization	% of Subtotal 1		8%	$30,345
Traffic Control	% of Subtotal 1		9%	$34,138
Subtotal 2 (Mobilization & Traffic Control)				$64,482
Total (Subtotals 1 + 2)				$443,790
Plus Contingencies	% of Total		40%	$177,516
Estimated Construction Cost				**$621,306**
Architectural/Engineering	% of Est. Cost		20%	$124,261
Construction Management	% of Est. Cost		10%	$62,131
Estimated Professional Fees				**$186,392**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$807,698**

ESTIMATED PROJECT COST SUMMARY

Marine Science Drive / Ferry Slip Road Intersection (3-legs)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.13	$8,000.00	$1,025
Excavation (Cut)	cu. yd.	565.66	$15.00	$8,485
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	5,586.00	$6.00	$33,516
New Curb	lin. ft.	-	$16.00	$0
New Sidewalk	sq. ft.	-	$4.00	$0
Pavement Removal	sq. yd.	-	$10.00	$0
				$43,026
Storm Drainage System	% of Subtotal A	10%	TBD	$4,303
Landscape Improvement	% of Subtotal A	5%	TBD	$2,151
Signing and Striping	% of Subtotal A	10%	TBD	$4,303
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$10,756
Subtotal 1 (Subtotals A + B)				$53,782
Mobilization	% of Subtotal 1		10%	$5,378
Traffic Control	% of Subtotal 1		10%	$5,378
Subtotal 2 (Mobilization & Traffic Control)				$10,756
Total (Subtotals 1 + 2)				$64,539
Plus Contingencies	% of Total		40%	$25,815
Estimated Construction Cost				**$90,354**
Architectural/Engineering	% of Est. Cost		20%	$18,071
Construction Management	% of Est. Cost		10%	$9,035
Estimated Professional Fees				**$27,106**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$117,460**

ESTIMATED PROJECT COST SUMMARY

Marine Science Drive / Ferry Slip Road Intersection (4-legs)

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.29	$8,000.00	$2,336
Excavation (Cut)	cu. yd.	1,231.66	$15.00	$18,475
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	12,732.00	$6.00	$76,392
New Curb	lin. ft.	300.00	$16.00	$4,800
New Sidewalk	sq. ft.	-	$4.00	$0
Pavement Removal	sq. yd.	500.00	$10.00	$5,000
				$107,003
Storm Drainage System	% of Subtotal A	10%	TBD	$10,700
Landscape Improvement	% of Subtotal A	5%	TBD	$5,350
Signing and Striping	% of Subtotal A	10%	TBD	$10,700
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$26,751
Subtotal 1 (Subtotals A + B)				$133,754
Mobilization	% of Subtotal 1		10%	$13,375
Traffic Control	% of Subtotal 1		10%	$13,375
Subtotal 2 (Mobilization & Traffic Control)				$26,751
Total (Subtotals 1 + 2)				$160,504
Plus Contingencies	% of Total		40%	$64,202
Estimated Construction Cost				**$224,706**
Architectural/Engineering	% of Est. Cost		20%	$44,941
Construction Management	% of Est. Cost		10%	$22,471
Estimated Professional Fees				**$67,412**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$292,118**

ESTIMATED PROJECT COST SUMMARY

25th St Realignment at Marine Science Drive Including Sidewalk/Trail

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.13	$8,000.00	$1,004
Excavation (Cut)	cu. yd.	238.28	$15.00	$3,574
Embankment (Fill)	cu. yd.	-	$20.00	$0
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	3,220.00	$6.00	$19,320
New Curb	lin. ft.	450.00	$16.00	$7,200
New Trail	sq. ft.	2,250.00	$2.50	$5,625
Pavement Removal	sq. yd.	383.33	$10.00	$3,833
				$40,556
Storm Drainage System	% of Subtotal A	10%	TBD	$4,056
Landscape Improvement	% of Subtotal A	10%	TBD	$4,056
Signing and Striping	% of Subtotal A	5%	TBD	$2,028
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$10,139
Subtotal 1 (Subtotals A + B)				$50,695
Mobilization	% of Subtotal 1		10%	$5,070
Traffic Control	% of Subtotal 1		10%	$5,070
Subtotal 2 (Mobilization & Traffic Control)				$10,139
Total (Subtotals 1 + 2)				$60,834
Plus Contingencies	% of Total		40%	$24,334
Estimated Construction Cost				**$85,168**
Architectural/Engineering	% of Est. Cost		20%	$17,034
Construction Management	% of Est. Cost		10%	$8,517
Estimated Professional Fees				**$25,550**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$110,718**

ESTIMATED PROJECT COST SUMMARY

Marine Science Drive/Hatfield Conventional Intersection

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.20	$8,000.00	$1,621
Excavation (Cut)	cu. yd.	620.05	$15.00	$9,301
Embankment (Fill)	cu. yd.	120.25	$20.00	$2,405
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	8,836.00	$6.00	$53,016
New Curb	lin. ft.	-	$16.00	$0
New Sidewalk	sq. ft.	-	$4.00	$0
Pavement Removal	sq. yd.	577.77	$10.00	$5,778
				$72,121
Storm Drainage System	% of Subtotal A	10%	TBD	$7,212
Landscape Improvement	% of Subtotal A	5%	TBD	$3,606
Signing and Striping	% of Subtotal A	10%	TBD	$7,212
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$18,030
Subtotal 1 (Subtotals A + B)				$90,151
Mobilization	% of Subtotal 1		10%	$9,015
Traffic Control	% of Subtotal 1		10%	$9,015
Subtotal 2 (Mobilization & Traffic Control)				$18,030
Total (Subtotals 1 + 2)				$108,181
Plus Contingencies	% of Total		40%	$43,272
Estimated Construction Cost				**$151,453**
Architectural/Engineering	% of Est. Cost		20%	$30,291
Construction Management	% of Est. Cost		10%	$15,145
Estimated Professional Fees				**$45,436**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$196,889**

ESTIMATED PROJECT COST SUMMARY

Marine Science Drive Roundabout at Hatfield

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.42	$8,000.00	$3,394
Excavation (Cut)	cu. yd.	1,036.52	$15.00	$15,548
Embankment (Fill)	cu. yd.	470.49	$20.00	$9,410
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	20,734.00	$6.00	$124,404
New Curb	lin. ft.	2,021.00	$16.00	$32,336
New Sidewalk	sq. ft.	15,260.00	$4.00	$61,040
Pavement Removal	sq. yd.	1,977.76	$10.00	$19,778
				$265,910
Storm Drainage System	% of Subtotal A	25%	TBD	$66,477
Landscape Improvement	% of Subtotal A	8%	TBD	$19,943
Signing and Striping	% of Subtotal A	5%	TBD	$13,295
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$99,716
Subtotal 1 (Subtotals A + B)				$365,626
Mobilization	% of Subtotal 1		10%	$36,563
Traffic Control	% of Subtotal 1		10%	$36,563
Subtotal 2 (Mobilization & Traffic Control)				$73,125
Total (Subtotals 1 + 2)				$438,751
Plus Contingencies	% of Total		40%	$175,500
Estimated Construction Cost				**$614,251**
Architectural/Engineering	% of Est. Cost		20%	$122,850
Construction Management	% of Est. Cost		10%	$61,425
Estimated Professional Fees				**$184,275**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$798,527**

ESTIMATED PROJECT COST SUMMARY

Ferry Slip Road (3-lane section) 32nd to Marine Science Drive

Proposed Road Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Subtotal**
Clearing & Grubbing	acre	0.60	$8,000.00	$4,830
Excavation (Cut)	cu. yd.	2,172.83	$15.00	$32,592
Embankment (Fill)	cu. yd.	974.03	$20.00	$19,481
Pavement Rehabilitation	sq. ft.	-	$3.00	$0
New Pavement	sq. ft.	-	$6.00	$0
New Curb	lin. ft.	2,025.00	$16.00	$32,400
New Sidewalk	sq. ft.	26,325.00	$2.50	$65,813
Pavement Removal	sq. yd.	-	$10.00	$0
				$155,116
Storm Drainage System	% of Subtotal A	10%	TBD	$15,512
Landscape Improvement	% of Subtotal A	11%	TBD	$17,063
Signing and Striping	% of Subtotal A	5%	TBD	$7,756
Street Lighting	Lump/Sum	1	TBD	$0
Utility Coordination	Lump/Sum	1	TBD	$0
New Traffic Signal	each	-	$250,000.00	$0
Traffic Signal Modification	each	-	$100,000.00	$0
RR-Xing Signals	each	-	$725,000.00	$0
Structures	sq. ft.	-	$135.00	$0
Structures over water	sq. ft.	-	$165.00	$0
Unusual structures	sq. ft.	-	$200.00	$0
Retaining Walls	sq. ft.	-	$110.00	$0
High Retaining Walls	sq. ft.	-	$75.00	$0
				$40,330
Subtotal 1 (Subtotals A + B)				$195,446
Mobilization	% of Subtotal 1		10%	$19,545
Traffic Control	% of Subtotal 1		10%	$19,545
Subtotal 2 (Mobilization & Traffic Control)				$39,089
Total (Subtotals 1 + 2)				$234,535
Plus Contingencies	% of Total		40%	$93,814
Estimated Construction Cost				**$328,349**
Architectural/Engineering	% of Est. Cost		20%	$65,670
Construction Management	% of Est. Cost		10%	$32,835
Estimated Professional Fees				**$98,505**
Right-of-Way	sq. ft.	-		$0
Estimated Property Acquisition Cost				**$0**
Estimated Project Cost				**$426,853**

FHWA-SA-08-006

"Personally, I love them, and I'll tell you why. You only have to stop one lane of traffic, then go to the middle and wait. The cars can't go much faster than 20 mph through the roundabout so the crossing aspect is great."

Denise Haltom
School Crossing Guard, Suamico, Wisconsin
Green Bay Press-Gazette
February 6, 2001

"We have had a lot of people not very happy about the idea of roundabouts, but after they are constructed, those fears mostly go away."

Brian Walsh
Washington State Department of Transportation
Seattle Times
June 5, 2002

"We all know people speed up to get through a yellow light. But at the roundabout, all the vehicles have to slow down ... we have almost 50 roundabouts now, we have a lot [fewer] personal injuries. We have fewer fatalities."

James Brainard
Mayor, City of Carmel, Indiana
www.nbc17.com
November 8, 2007

Safe Roads for a Safer Future
Investment in roadway safety saves lives

Education is key.

Education is vital to the acceptance and success of a roundabout. Navigating a roundabout is easy. But because people can be apprehensive about new things, it's important to educate the public about roundabout use.

There are just a few simple guidelines to remember when driving through a roundabout:

1. Slow down.
2. If there's more than one lane, use the left lane to turn left, the right lane to turn right, and all lanes to go through, unless directed otherwise by signs and pavement markings.
3. Yield to pedestrians and bicyclists.
4. Yield at the entry to circulating traffic.
5. Stay in your lane within the roundabout and use your right-turn signal to indicate your intention to exit.
6. Always assume trucks need all available space — don't pass them!
7. Clear the roundabout to allow emergency vehicles to pass.

Visit safety.fhwa.dot.gov to learn more about roundabouts

U.S. Department of Transportation
Federal Highway Administration

Design standards for roundabouts continue to evolve, and not all features of existing roundabouts meet current recommended practice. Please refer to FHWA's web site for recommendations on current design practice.

Original source photo by Lee Rodegerdts. Photo has been altered to illustrate roundabout and updated signage.

9280-09

U.S. Department of Transportation
Federal Highway Administration

Roundabouts

A Safer Choice



What is a roundabout?

A roundabout is a type of circular intersection with yield control of entering traffic, islands on the approaches, and appropriate roadway curvature to reduce vehicle speeds.

Modern roundabouts are different from rotaries and other traffic circles. For example, roundabouts are typically smaller than the large, high-speed rotaries still in use in some parts of the country. In addition, roundabouts are typically larger than neighborhood traffic circles used to calm traffic.

A roundabout has these characteristics:



Source: *Roundabouts: An Informational Guide.* Federal Highway Administration, Washington, D.C., latest version, except as noted.

Why consider a roundabout?

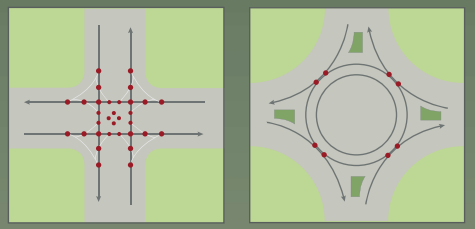
Compared to other types of intersections, roundabouts have demonstrated safety and other benefits.

Roundabouts:

> Improve safety

- More than 90% reduction in fatalities*
- 76% reduction in injuries**
- 35% reduction in all crashes**
- Slower speeds are generally safer for pedestrians

With roundabouts, head-on and high-speed right angle collisions are virtually eliminated.



[Traditional intersection] [Roundabout]

● Potential vehicle conflict point

* "Safety Effect of Roundabout Conversions in the United States: Empirical Bayes Observational Before-After Study." Transportation Research Record 1751, Transportation Research Board (TRB), National Academy of Sciences (NAS), Washington, D.C., 2001.

** NCHRP Report 572: Roundabouts in the United States. National Cooperative Highway Research Program, TRB, NAS, Washington, D.C., 2007.

> Reduce congestion

- Efficient during both peak hours and other times
- Typically less delay

> Reduce pollution and fuel use

- Fewer stops and hard accelerations, less time idling

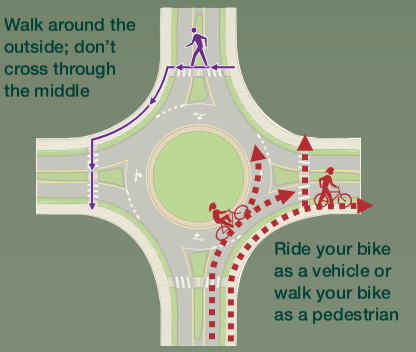
> Save money

- Often no signal equipment to install, power, and maintain
- Smaller roundabouts may require less right-of-way than traditional intersections
- Often less pavement needed

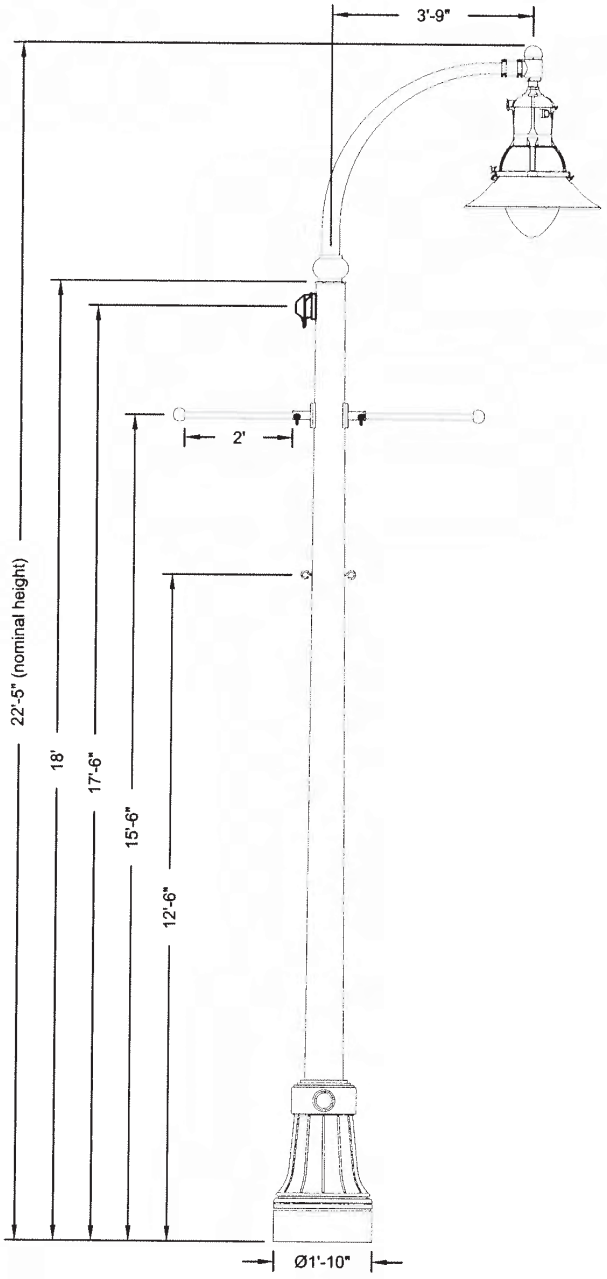
> Complement other common community values

- Quieter operation
- Functional and aesthetically pleasing

Tips for safely walking and biking through a roundabout



Research is ongoing on additional treatments and design considerations to address the needs of visually impaired pedestrians.



Specifications

GENERAL DESCRIPTION
The lighting post shall be all steel, one piece construction, consisting of a tapered shaft welded to a steel anchor base. A 45° OUC series single arm mount atop the post secured to a 3-1/2" diameter x 8' tall tenon with 3/8-16 set screws. Two 24" bolt on banner arm, two bolt on eyebolts and a GFI receptacle with large while in-use weatherproof cover will mount at specified heights and orientations. An Atlanta series clamshell base will mount around the base of the post.

MATERIAL
The shaft shall conform to ASTM A595 Grade-A and is supplied in .1196" thickness. The pole shaft base diameter shall be 9" and the top diameter shall be 6.48". The anchor base is fabricated from structural quality hot rolled carbon steel plate conforming to ASTM A36. The base plate telescopes the pole shaft and is circumferentially welded top and bottom.

DIMENSIONS
The post shall be 18'-0" in height with a 12-3/8" square base. A Ø3-1/2" by 8" tall tenon will be provided to mount roadway arm.

WIRE ACCESS
A reinforcing handhole rim is provided on the post and is made of a rectangular shaped tubing material. It is provided with one or two steel attachment bars, steel cover, and one or two round head machine screw. The handhole is welded in the post shaft and is located 1'-6" above the base.

INSTALLATION
The post shall be provided with four 1" L-type (55 KSI) anchor bolts with decorative nut covers for each. Anchor bolts shall be installed on a Ø12-1/2" bolt circle.

LUMINAIRE DESCRIPTION
- Memphis Utility Fixture
- 150 Watt / 55 Volt High Pressure Sodium (Mogul), Multivolt
- Teardrop Type IV Glass Optics
- Decorative Deep Skirt
- RAL 8017 Finish
- Special Paint Over Epoxy Primer
- NEMA Twistlock Photocontro Receptacle

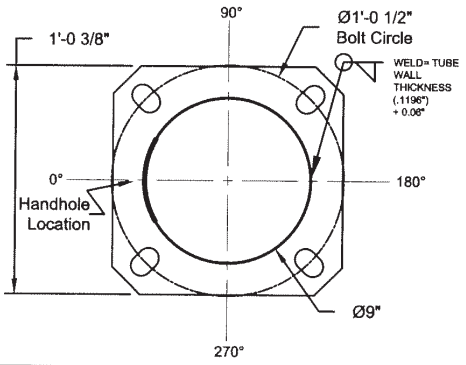
For complete specifications see LUM_MEMPHIS.

Accessory Mounting Detail

	Orientation	Height
FGIUL-SBKH	0	17'-6"
(2)BAD24B4B	0 & 180	15'-6"
(2)EYEBOLT	0 & 180	12'-6"

FILL OUT CHART DURING APPROVAL PROCESS

Anchorage Detail



Catalog #'s:
(AOL-30945)DS210-900A180-P9-HH-FP/GV-FDL-LAB (2)BNR PROV - 1" AB - (2) BAD24B4B - FGIUL-SBKH -OUC45/1CABKH - AT22CSB-CA/BK - GWLF/200-RCA/BK - (AOL-32508) MPU15AHPMCB4 DS PCTWSTL12202427

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REVISION: 3	REVISION DATE: 11-04-09	
DRAWN: ACH	ORIGIN DATE: 08-26-09	PAGE: 1 of 1

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