TRANSPORTATION SYSTEM PLAN POLICY ADVISORY AGENDA
Thursday, December 16, 2021 - 6:00 PM
Council Chambers, Newport City Hall, 169 SW Coast Highway

This meeting will be held electronically. The public can livestream this meeting at https://newportoregon.gov. The meeting will also be broadcast on Charter Channel 190. Public comment may be made, via e-mail, up to four hours before the meeting start time at publiccomment@newportoregon.gov. The agenda may be amended during the meeting to add or delete items, change the order of agenda items, or discuss any other business deemed necessary at the time of the meeting.

Anyone wishing to make real time public comment should submit a request to publiccomment@newportoregon.gov. at least four hours before the meeting start time, and a Zoom link will be e-mailed.

CALL TO ORDER AND ROLL CALL

Meeting Agenda.
PAC Meeting #6 Agenda

APPROVAL OF MINUTES

Draft Transportation System Plan Policy Advisory Committee Meeting Minutes of July 8, 2021.
Draft TSP Policy Advisory Comm Mtg Minutes 07-08-2021

1. TSP DECISION-MAKING PROCESS AHEAD

2. PUBLIC OUTREACH SUMMARY, PHASE 2

3. REVISED DRAFT TRANSPORTATION SYSTEM PLAN

4. KEY ELEMENTS OF TECH MEMOS 11 AND 12

NEXT MEETING - JANUARY 13, 2022

FINAL MEETING - JANUARY 27, 2022

HANDOUTS

Handout Files:

Newport TSP Open House 2 Summary
Newport TSP Open House Appendices
Newport TSP In Progress Draft 13 Dec 21
Newport TSP TM 11 Alternate Mobility Targets
Newport TSP TM12 Code Amendments (Revised Draft)
Consultant's Presentation

ADJOURNMENT

Newport Transportation System Plan
Project Advisory Committee Meeting #6

December 16, 2021 | 6 PM to 8:00 PM
Online Zoom Meeting

Meeting Objectives

- Discuss Project Schedule and Remaining Tasks
- Review Public Involvement Summary from 2nd Open House Events
- Provide Overview and Field Questions about Draft Transportation System Plan (TSP)
- Summarize Key Elements of Tech Memos 11 (Alternate Mobility Targets) and 12 (Transportation Standards)

1. TSP Decision-Making Process Ahead

2. Public Outreach Summary, Phase 2

3. Revised Draft Transportation System Plan

4. Key Elements of Tech Memos 11 and 12

Next Meeting – January 13, 2022

- Review and Discuss Potential Changes to the TSP before it is Finalized

Final Meeting – January 27, 2022

- Confirm Adequacy of Requested Changes to the TSP
- Provide Recommendation to the Planning Commission and City Council.

Handouts

- Public Outreach Summary, Phase 2
- Revised Draft TSP (further edits from staff comments pending)
- Tech Memos #11 (Alternate Mobility Targets) and #12 (Transportation Standards)

Other Resources

Project website: https://sites.jla.us.com/newport-tsp

***Draft* MINUTES**
Transportation System Plan Policy Advisory Committee
Meeting #5
Newport City Hall Council Chambers
July 8, 2021

Committee Members Present: Jeff Hollen, Tomas Follett, Bob Berman, Dean Sawyer, Ralph Breitenstein, Judy Kuhl, Roy Kinion, and Rich Belloni.

Committee Members Present by Video Conference: Rosa Maria Coppola, Dietmar Goebel, Beatrice Botello, Linda Niegebauer, and Bryn McCornack.

Committee Members Absent: James Feldman, Lyle Mattson, Roland Woodcock, and Fran Matthews.

City Staff Present: Community Development Director, Derrick Tokos; and Executive Assistant, Sherri Marineau.

Consultants Present: Carl Springer.

Public Members Present by Video Conference: Cynthia Jacobi.

1. **Call to Order & Roll Call.** Meeting started at 6:08 p.m.

2. **Approval of Minutes.** Motion was made by Ralph Breitenstein, seconded by Judy Kuhl to approve the February 25, 2021 Transportation System Plan Policy Advisory Committee meeting minutes as written. The motion carried unanimously in a voice vote.

3. **TSP Decision-Making Process Ahead.** Springer reviewed the project schedule. Berman asked how the Committee should submit feedback about the technical memo. Tokos requested they send more detailed comments directly to him and give comments during the meeting slide show.

4. **Draft Roadway Standards (See Technical Memo #10).** Springer reviewed the roadway standards and the street functional classification of roadways 1 and 2. He pointed out the differences in the collectors. Tokos noted that collectors would serve more residential neighborhoods. This would be a tool to couple the designations with changes to the code. This would also set up a process for which the City could determine when traffic calming solutions were warranted and what traffic calming solutions should be deployed in certain areas, such as a street cushions or speed humps.

   Springer reviewed the variety of local streets. Berman pointed out that the descriptions in the Tech memos for private streets said the city wasn't responsible for regular maintenance of streets that were heavily used public streets but were private. Berman wanted to see this vetted. Tokos noted the request for a private street category came from the city. There were a lot of private streets the city weren't responsible for that they didn't want to designate as public. Berman noted that 68th Street was on the list but it was public. Tokos explained that they would review the list to make sure public streets weren't included. Hollen pointed out there where descriptions of a private streets on the TSP plan. Tokos noted there were different types of private streets, such as in Southshore, that weren't maintained by the city and were more heavily traveled. There were other developments where there were four or fewer homes that had driveways that were built in undeveloped rights-of-way. These were considered private and the city wouldn't maintain them. This could be changed through a TSP process, but up to that point if it was four or fewer homes the city wouldn't maintain it. If it was more, the city would maintain. Berman noted that on page 9 it listed quite a few streets that were classified as such, but weren't. Springer noted the intent was to clean this up.

   Springer continued his review of street function classifications. Tokos noted that the shared street concept was a concept they were looking at to see if they could do narrower streets in certain circumstances because it comported with how some of Newport's neighborhoods really were. A shared street concept was often

allowed to not have sidewalks and bike lanes when there were low traffic volumes. This could be defined in a number of ways. The documents defined this as 500 trips per day. Each single family dwelling would generate 10 trips per day. 500 trips mean there were no more than 50 homes on the particular street meant they could go with a narrower street. The Planning Commission correlated this to see how it worked with some of our neighborhoods. What you would find is it worked for emergency service providers because there was typically shoulders to work with so vehicles could turn out. Tokos reported they may do two levels of this for the low volume areas to go tighter than 16 feet of paving. Golf Course Drive was had been high centered and hadn't moved forward because they were looking for a more robust street section that didn't fit the character of the neighborhood. The city would be looking for people in the neighborhood to participate and help pay for improvements to the replace the water line. A narrower street often meant they would have to put in pullouts. The average daily trips were formulaic and it was easy to use the vehicles trips in the area to determine the volume of traffic.

Goebel explained that the City wanted to do a water line on Golf Course Drive. The city wanted to put in sidewalks and said the streets were the standard. To do the streets the city needed to create an LID and have 75 percent participation by the owners on this street. Goebel hoped that they could come up with solutions for areas in the city such as this. As a neighborhood they would be willing to work with the city to do laybys so fire trucks could get by. He thought they would get pushback if the city required wider streets in areas such as this. Tokos noted they did have shared streets in the documents and this was the direction they were going with the TSP. In order to do a narrow street section, like a 16 foot wide street in low volume neighborhoods, they needed to adopt it in the plan. If they didn't, things like the State Fire Code will force things wider.

Kuhl asked if the city would not pave streets unless there was curbing and sidewalks. Tokos explained that if they were doing a reconstruction of a street they would be looking to bring the street up to a certain standard, if what they were talking about was reducing this standard. Goebel noted that streets like Golf Course Drive didn't need a curb, and felt there were a lot of streets in the city that they needed to take a look at.

Hollen disclosed that he had a potential conflict of interest because his family owned property at the top of Rocky Way and they were dealing with this at the time with the city. The current standards required them to do more than what was necessary or reasonable of what might occur.

Springer reviewed the neighborhood traffic management examples. He explained the difference between speed humps and speed cushions. The cushions allowed emergency vehicles to straddle the middle that wasn't a bump.

Springer covered the example street x-sections. Berman asked if there were any general rules as to when they would insist on the preferred design versus the acceptable design. Springer noted there was criteria in the document that laid out the process for making this decision.

Tokos noted at 6:42 p.m. that Cynthia Jacobi joined the meeting. Jacobi confirmed that she would be listening to the meeting but not participating.

Springer continued to cover the example street x-sections. He then covered the proposed city mobility standards. Springer noted this wouldn't change the State's criteria. This criteria was appropriate for a city system and would be a new piece that would be added. Tokos asked for the difference between an A-level of service versus a F-level of service. Springer explained an A-level was the best and the F-level was the lowest. The lower it went, the longer the delays. A discussion ensued regarding the current state of traffic in Newport and thoughts on locations for stop lights.

Springer covered guidelines for lock spacing and access management, and electric vehicle charging stations. Tokos added that when the bill was signed for EV charging, it would go into effect in July, 2022. This was more for EV infrastructure, not EV charging stations. This would be a more robust electric service and conduit for parking areas, and the State wanted developers to be thinking about EV charging stations.

Berman asked if this applied across the board or if it varied depending on city size. Tokos confirmed it would be mandated across the board.

5. **Draft Solutions Update.** Springer reviewed the major projects in the draft solutions, and the Harney Street extension alignment and its findings. He noted the estimate for the costs was changed on the slide show presentation down $10 million to be $45-60 million depending on what they did at the time of construction. Sawyer asked if there was a reason they couldn't do a straighter street on the Harney Street. Tokos reported that the terrain was the reason for this. Follet noted there could be a bridge built. Tokos explained this would add significant costs. Sawyer questioned how many people would use the extension. Springer reminded that it was a straight shot through Newport without many side streets. Tokos reminded that this would also open up residential development on the curve on the road. Goebel asked about the annexation at 30th and Harney Street that would add 200 home sites that could use the route. Tokos confirmed they had done a Urban Growth Boundary expansion for this property and was still pending with the County. This would be a valuable secondary access for this property and there were significant growth opportunities in this area. Springer noted that they did include all the growth identified by the city in this area. Berman asked if there was any thought on the two infrastructure bills with federal representatives. Tokos explained this hadn't happened yet and there might be a period in the next 20 years where significant funds would be available.

Tokos asked the Committee to give their thoughts on what options they favored for the Harney Street extension. Option A kept it in the plan and Option B dropped it from the plan. The Committee was all in favor of keeping it in the plan.

A discussion ensued regarding the costs of the three different options for the Oceanview Drive to Nye Street connection. The options included no connection with the street remaining as was, a full street connection, or a multi-use path only. Kuhl thought this was low on their priority list. Sawyer liked the idea of it being bike/pedestrian only. This would eliminate excess traffic in Nye Beach. Hollen asked if they could agree with one with the condition of costs. Tokos encouraged the Committee to give feedback without the costs. Kuhl thought if they were going to spend the money in the area it should be a full street option. Belloni thought they needed to keep the people in mind who lived there and paid for the street when they talked about taking parking away on one part of the street. Sawyer questioned where people were to get out of town when traffic was channeled down from Nye Street to Coast Street. He thought it needed signage. Follet noted to have it be all bike/ped it was a 15 percent grade up to Nye Street between 17th and 16th Streets. It would need a lot of fill to get it connected. Sawyer asked if this had been shared with the Bike/Ped Committee. Follet reported they were in support of having it be the road on 12th Street and doing more traffic calming on Oceanview Drive. Berman thought it was important to consider that if it was a full street, there would be an increase of traffic on Oceanview Drive because a lot of people would avoid US 101 if Nye Street was a full street.

Kinion pointed out that in a previous discussion, when addressing issues of US 20, US 101 and Olive Street intersections, they had east bound traffic blocked on Olive Street. He thought that if this happened it would be more important to have traffic venture more north through US 101 to the beach. Kinion didn't know how much value there was to block Olive Street. Springer noted they would discuss this further in the meeting. Neigebauer thought the intersections of Oceanview Drive and 25th Street, Spring and 11th Streets, and Coast and 6th Streets needed signage to direct people to US 101. She thought this would drop a bit of the traffic that used Oceanview Drive off the road. Neigebauer thought the City lacked signage which was an issue for wayfinding. The majority of the Committee was all in favor of the full street option and to weigh cost estimates when they had them.

Springer covered the couplet concepts for US 101. He explained one of the rules the city needed to recognize was that if the State did a project on the highway they were required to plan for and locate bike facilities as a part of that project. If they couldn't fit it on the highway they had to place it parallel to the highway. In this case a likely alternative would be to put it on 9th Street. To make it work on 9th Street they would have to take on street parking off of both sides. Tokos reported that the US 101 2A improvement would have four travel lanes, with two southbound and two northbound that would be a foot wider than

they were currently were with slightly wider sidewalks. 9th Street would have to be modified to include the two way bike lanes. This would be for the segment of US 101 in the core area.

Kuhl asked how the couplets connected into US 101. Springer explained there would be a curve that brought the traffic together and there wouldn't be any stopping. Breitenstein noted that the hospital community didn't like one way traffic and they weren't in favor of it. They were in favor of a short couplet. Tokos thought a long couplet was a better bang for the buck than a short couplet, but he did think a short couplet was a better solution than working with the existing US 101 right-of-way. The hospital had locked up the east side of US 101 for specific redevelopment plans. One of the benefits of couplets was that it did tend to revitalize commercial space. We didn't need this here because the hospital was already accomplishing this on the east side of US 101. The amount that could be done on the west side wasn't enough to justify the cost to extend it there. A short couplet had benefits in terms of the improvement of traffic flow and revitalizing the core area there. Tokos reminded that the City Hall parking lot had always been an interim use and was purchased to help facilitate future expansion of the City Hall campus if and when it was needed. If a couplet were to cut through the parking lot, they would be in a position to vacate a portion Angle Street to get back more of the property. Hollen thought that if they didn't do something to move traffic through this part of town it would be a bigger problem.

Tokos reported that the couplet concept had a discussion to take one of the intermediate streets to do a pedestrian plaza for more pedestrian traffic. A discussion ensued on the redevelopment of the area, how Urban Renewal funds could be used, and how they could adjust the land use regulations to make this happen. Kuhl asked when the couplets would happen if approved. Tokos reported the State funding and programing would be approved around 2024 to 2027. Most likely the improvements would be built in the 2030's. A discussion ensued regarding what could be done to improve the street section in the interim. Tokos asked for feedback on the couplet options and the Committee all favored a short couplet for US 101 and 9th Street.

Springer reviewed the concepts for the intersection of US 101 and US 20. Sawyer thought they shouldn't allow access to US 101 from 1st Street. Kuhl thought they should consider direction of driveways and access. Springer explained they would see changes on this. A discussion ensued regarding roundabouts compared to traffic lights. Concerns were raised on how confusing roundabouts were for people, especially with the mix of commercial and public traffic. Kuhl noted the street between Walgreens and Goodwill was used to get in and out of US 101. She thought traffic should only be able to turn one way at this location or it should be closed off. Tokos noted there were other streets around that intersection that needed this. He asked for feedback on the concepts for US 101 and US 20, and the Committee all favored Option 2.

Springer reviewed the two option for the US 20 downtown area for either a two-way or a couplet. A discussion ensued regarding bike traffic and how each option would accommodate. Kuhl asked if bike paths had to be put on both streets. Tokos reported they would be on either streets. Kuhl thought they should consider the street closest to the schools. Berman didn't think the couplet made sense here. He asked if they could make NE 1st Street a one way street for the Option 1. Goebel asked how bikes would be able to cross the intersections. He asked if there was a third option to keep bikes on US 20. Tokos thought there would be but mean there would be narrower lanes. Springer reported that the consultants considered this but didn't have a diagram for it. Tokos noted that when they did public outreach they could add this option to it. Tokos asked for feedback on the two options. The Committee was more in favor for the two-way on US 20 with consideration of bike lanes on 1st Street. CM Hall wanted to make sure this had been vetted through the Bike/Ped Committee. Tokos confirmed it had been vetted and they would be making formal recommendation to the City Council.

Hall asked if adding sidewalks on US 101 from Walmart to the movie theaters would be discussed. Tokos noted there was one project to do a sidewalk on the east side from Walmart going north to 36th Street. There were funds budgeted for the design work to get it built. There would also be sidewalks and multi-use concepts on US 101 north from Lighthouse Drive to Oceanview, and then at the northern city limits.

Springer covered the options for the US 20 and Harney Street intersection. Berman thought this was a good

example of where to do a roundabout. Belloni thought a roundabout would be a nightmare for pedestrian traffic. He thought lights were quicker. Goebel noted a lot of students went across the highway at this location and a roundabout would be a nightmare for them. A discussion ensued regarding the pros and cons of roundabouts in this location. Sawyer suggested having three lanes turning south on US 20, and adding a fourth lane on Moore Drive. A discussion ensued regarding how many lanes should be added to turn onto US 20. Coppola asked if the roundabout would have crosswalks. Springer explained there would be, but the traffic would have to stop when they saw pedestrians. Tokos asked if they would put a flashing light on the roundabout. Springer reported they wouldn't have that feature in a roundabout. Tokos asked for feedback on the options. The Committee was in general agreement to go with lights at the intersection.

6. **Draft Approach for Open House Event.** Springer reviewed the draft open house approach, and the next and final Advisory Committee meeting.

Follet asked why the open house was online now. Tokos reported this had been built during the pandemic and there was value to running an online open house over a period of time to allow people to plug in when it was convenient to them.

7. **Public Comment.** None were heard.

8. **Adjournment.** Having no further business, the meeting adjourned at 8:26 p.m.

Respectfully submitted,

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Sherri Marineau
Executive Assistant

NEWPORT TSP: PHASE 2 OUTREACH SUMMARY

jla Public Involvement

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Overview

The City of Newport and the Oregon Department of Transportation (ODOT) are updating the City's Transportation System Plan (TSP) – a long range plan that will guide future investments in the City's transportation system. During phase two of the public involvement process, the City of Newport and ODOT conducted an online open house, hosted an in-person workshop, and sent paper surveys to residents in the Newport area. Feedback received throughout this period will help the technical team and decision-makers understand what is important to residents, visitors, and businesses for the future of Newport's transportation system.

> *Overall, the respondents want to see a safer future for all roadway users, where Newport is easy to get around whether people are walking, rolling, riding or driving. Many saw strong connections between the form of the city's buildings/land uses and the success of reaching this goal.*

Themes and Takeaways

There was a strong call for linking the transportation improvements to land use/redevelopment opportunities. Common themes included:

- Desire for pedestrian and bicyclist safety throughout the city
- Need for parking improvements, especially in the city center
- Interest in improving traffic flow and reducing congestion, for through travelers and local users
- Confusion around couplets and how they work

The in-person workshop was attended by about **30** people familiar with the project and who had participated in previous TSP activities or were familiar with City planning processes. Most were also concerned with direct impacts to their property, neighborhood or business. There were strong opinions about the proposed ideas with a heavy focus on better walking and biking opportunities and congestion reduction.

Figure 1 - August 11, 2021 workshop where people could talk to staff and provide input on the draft solutions.

During the event, attendees could ask technical staff questions about the proposed projects (which were also shown on the online open house) and provide comments verbally, on sticky notes on the maps, or on the printed survey.

OUTREACH METHODS AND OVERALL PARTICIPATION

Building off the previous outreach activities, the City of Newport and ODOT conducted outreach activities in August 2021 and collected feedback through:

- An online open house was open for comments from August 2nd to August 30th, 2021. During this time, the site received **356 views** and the survey was answered **76 times.**
    - In partnership with Centro de Ayudad, a local nonprofit that works directly with the Spanish speaking residents, **40** surveys were completed via telephone outreach. Spanish speakers have been heavily impacted by COVID-19 so individual communication via trusted community partners such as Centro de Ayuda reinforce the importance of the project as well as the importance in collecting information from Spanish-speakers who are historically under-represented in planning projects.
- An in-person workshop on August 11, 2021. About **30** participants attended this event, with 22 signing in. Seven printed surveys were filled out by attendees as a way to record their comments.
- A printed survey was mailed to persons 60+ years of age on the Parks & Recreation/Senior Center mailing list of **1,863** individuals in early August. **183** printed surveys were completed (the majority were mailed back to the City).

- A shorter, printed survey was provided as an extra accessibility measure for communities with barriers to accessing the online open house. Seniors often have a difficult time accessing online platforms, so this survey reduced barriers. Many of the issues faced by seniors or people with disabilities help with universal design that benefits all transportation users. Collecting feedback from this demographic group will capture issues affecting these two groups.

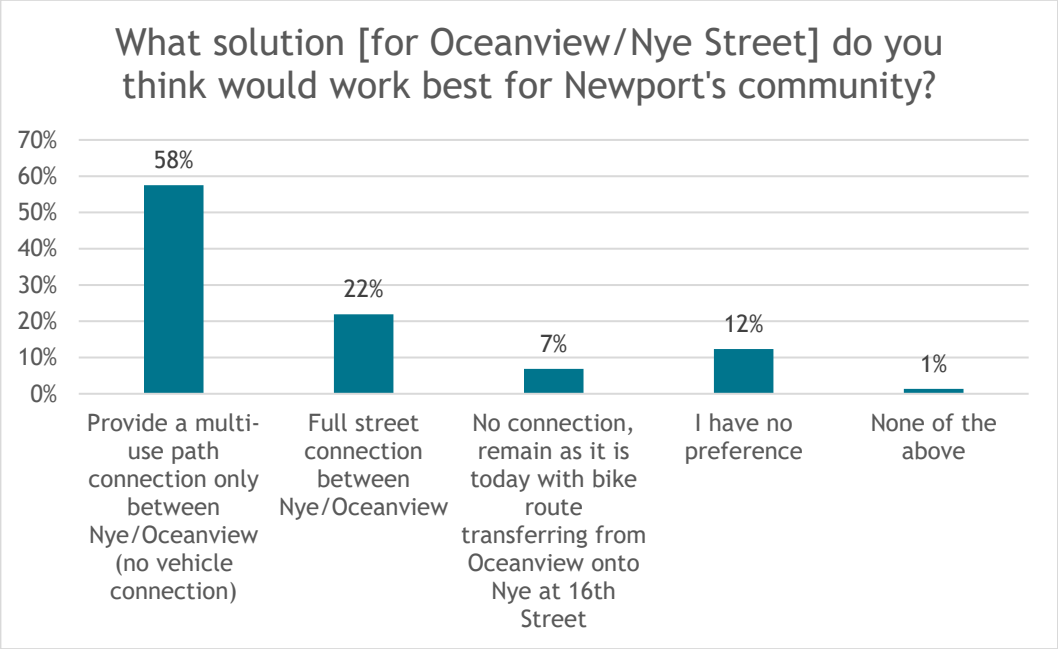
The following methods of outreach were used to publicize the online open house, survey, and in-person workshop:

- Multiple posts on Facebook, including paid advertising
- Advertisements on the City website, including distribution in its electronic newsletter (twice a month)
- Emails to City distribution lists for businesses affected by COVID-19 and short-term rental interest groups
- Emails to the individuals and groups on the initial stakeholder interview list, including the Chamber of Commerce, Newport Rotary Club, Yaquina Bay Economic Foundation, and Nye Beach Merchants
- Citywide postcard mailing
- Newspaper articles and radio ads and radio shows

FEEDBACK SUMMARY

In the following pages, results from the various outreach methods are summarized. The survey was focused on key questions, and the values behind those questions, to help decision-makers move forward with a final Transportation System Plan for Newport.

Solutions for Oceanview/Nye Street

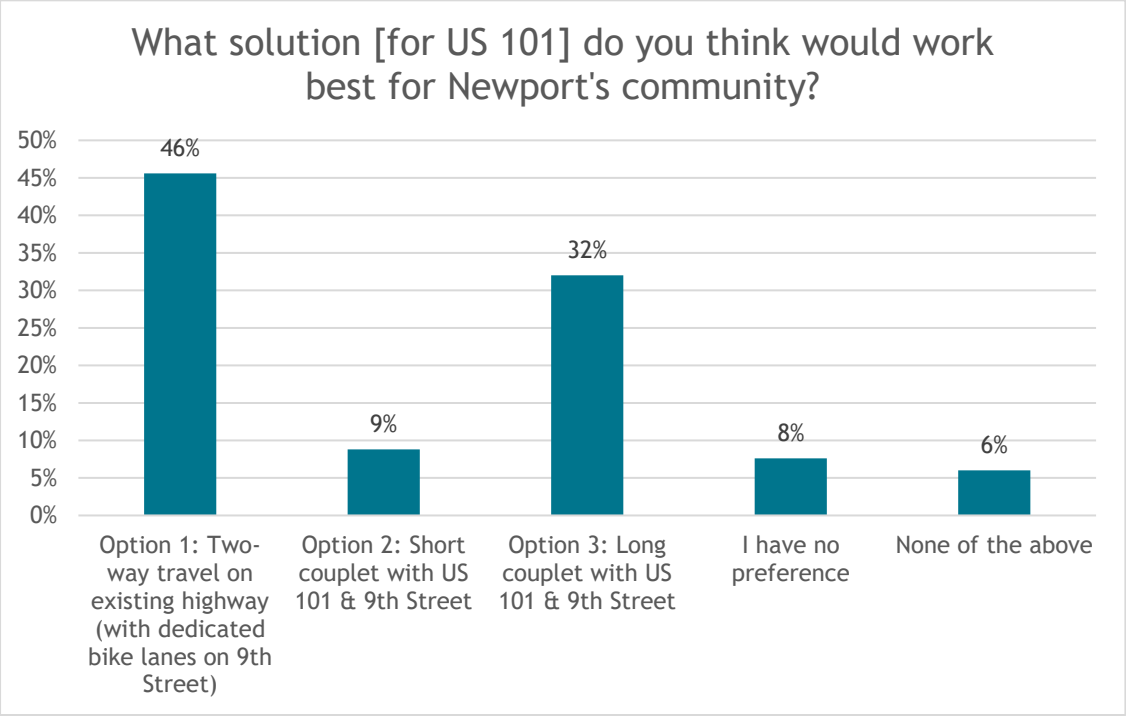


Respondents to the online open house were asked to select the solution they felt would work best for pedestrian and bike connections Oceanview/Nye Street (this question was not included on the printed survey). The majority of respondents **(58%)** said they thought a multi-use path connection between Nye/Oceanview with no vehicle connection would be the best solution. Another **22%** said they felt a full street connection would be best of the community. Twelve percent said they had no preference and **7%** said they wanted the streets to remain as they are today.

Respondents were asked to choose from a list of factors that were important to them in making the above selection. *Counts for those responses are listed here, as well as the most relevant comments in the "other" option. A full list of the comments left for this question can be found in Appendix A.*

- Multi-modal (bike/pedestrian safety) – **46**
- Improving car/vehicle access – **13**
- Removing car/vehicle access – **8**
- Other – **9**
    - "A new intersection that would be difficult to transition from the extended Nye to Oceanview for vehicles? As a bike path it could take Bicycles and some foot traffic off Oceanview in a difficult area."
    - "Environmental impact, vehicle intersection on a curve, cost."
    - "Losing car traffic on 101 hurts local businesses. Losing bikes doesn't."
    - "Motor vehicles already use Oceanview too much and there's no reason to force a lot of vehicles into what's now a quiet neighborhood w/a gravel road where the Nye St dead ends."
    - "It would serve no valuable purpose."

Solutions for US 101



Building off the responses from Phase 1 to improve the downtown core and make the entire highway more friendly for people walking or biking, the technical team developed three solutions for US 101. Respondents to the online open house and printed survey were asked to select which solution would work best for Newport's community. Nearly half of respondents **(46%)** selected Option 1 as the best solution. Forty-one (41%) supported some form of a couplet, with **32%** of respondents selecting Option 3 and **9%** of respondents selecting Option 2. **Eight** percent had no preference and **6%** did not want any of the options.

Of the 40 Spanish survey responses, **21** selected for Option 1, **3** selected Option 2 and **16** selected Option 3 as working best for Newport's community.

Respondents were asked to choose from a list of factors that were important to them in making the above selection. *Counts for those responses from both the printed survey and the online open house are listed here, with the top themes arising from the "other" answers. A full list of the comments left for this question can be found in Appendix B.*

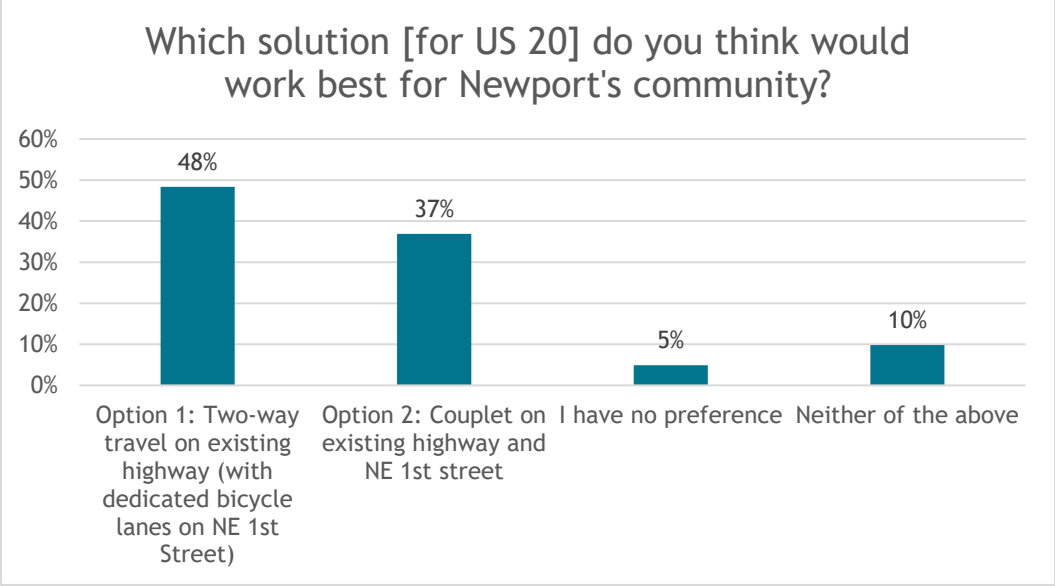
- Improves safety for bicyclists – **121**
- Makes it easier to drive around town – **126**
- Improves safety for pedestrians – **92**
- Promotes mixed-uses and activity centers – **65**
- Increases streetscape improvement opportunities – **65**
- Improves parking – **44**
- Other factors for US 101 – **60**

Themes for the additional factors included:

- The impact of a couplet (positive and negative) on traffic flow
- Keeping traffic away from the hospital
- The need for a center/lane turn lane on 101
- Concern for businesses on 101
- Do not want more traffic on 9th Street
- Decreasing complexity and increasing safety
- Getting bikes off of US 101

Solutions for US 20

Respondents to the online open house and printed survey were asked to select which solution would work best for improving the safety of US 20 as it enters the downtown core. Nearly half of respondents **(48%)** selected Option 1 as the best solution. Just over a third **(37%)** of respondents selected Option 2. **Five** percent had no preference and **10%** did not want any of the options.



Of the 40 Spanish survey responses, **13** selected for Option 1 and **27** selected Option 2 as working best for Newport's community.

Respondents were asked to choose from a list of factors that were important to them in making the above selection. *Counts for those responses from both the printed survey and the online open house are listed here, with a list of the themes arising from the "other" answers. A full list of the comments left for this question can be found in Appendix D.*

- Improves safety for bicyclists – **126**
- Makes it easier to drive around town – **111**
- Improves safety for pedestrians – **86**
- Reduces congestions – **89**
- Promotes mixed-uses and activity centers – **49**
- Increases streetscape improvement opportunities – **50**
- Improves parking – **26**
- Other factors for US 101 – **39**

Themes for these additional factors included:

- Impacts on downtown businesses.
- Increased traffic or concerns the solution will not address congestion.
- Support for and opposition to a couplet.
- Desire for removing bikes from US 20.

Traffic calming measures

Respondents to the online open house and printed survey were asked to comment on their comfort levels with a variety of calming measures on selected neighborhood streets to manage car speeds (due to space constraints the picture of the measures were small on the printed survey and the list of selected streets was only included online). Seventy-six percent of respondents were very comfortable or neutral about the measures (**36%** very comfortable and **40%** neutral). Only **24%** were very uncomfortable.

Of the 40 Spanish survey responses, **21** selected comfortable, **17** selected neutral and **2** selected that they were uncomfortable with the traffic calming measures.

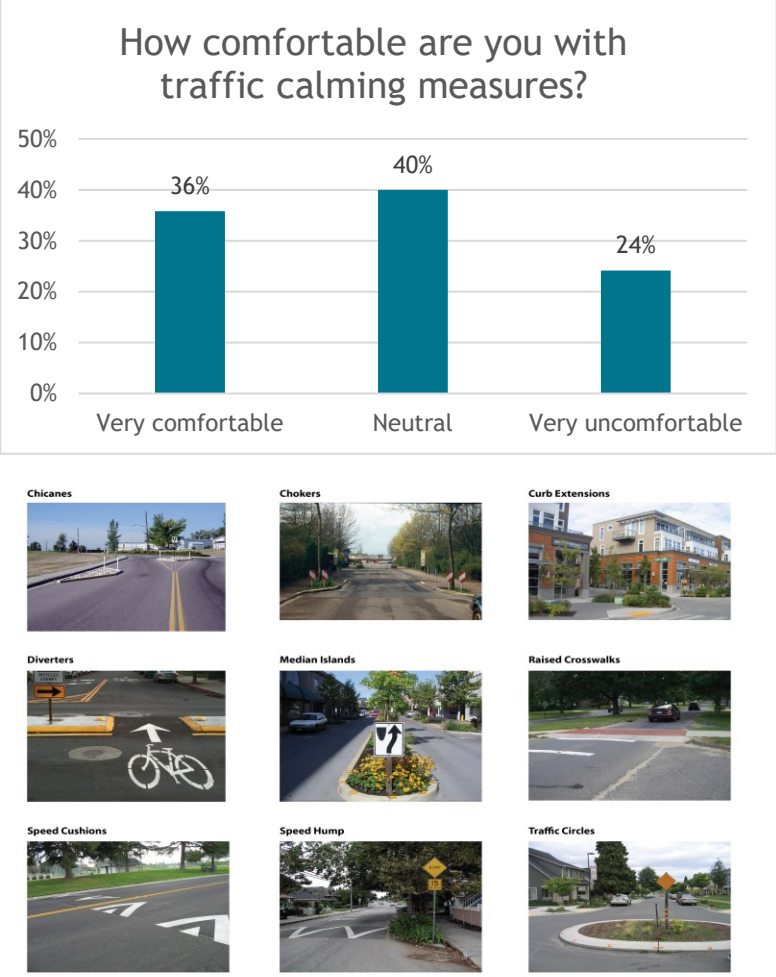
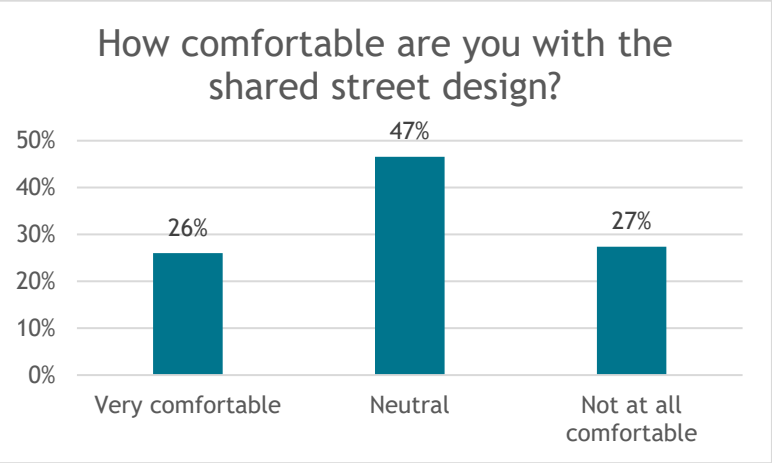


Figure 2 - Nine examples of traffic calming measures for select neighborhood streets.

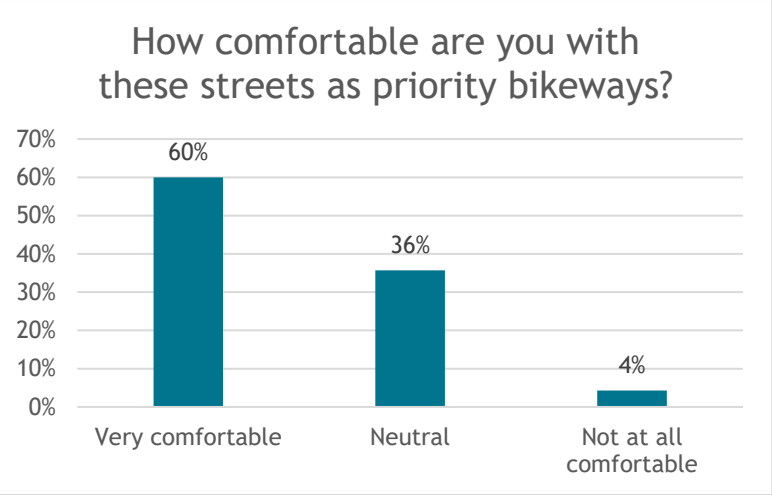
Shared street design

Building off the responses from Phase 1 to improve Newport's streets for people walking or biking, the technical team developed a shared street design. Respondents to the online open house were asked to comment on their comfort level with the proposed design. About half (**47**%) of respondents felt neutral about the proposed design while the rest were split evenly (**26**% said they were very comfortable and **27**% said they were not at all comfortable).



Priority bikeways

Respondents to the online open house were also asked to comment on priority bikeway streets, as a way to create a connected system for safer travel by bike. Almost all respondents were comfortable with these bikeways (**60%** very comfortable and **36%** neutral).



Neighborhood streets or bikeways

Following these questions, respondents to the online open house were given the opportunity to share any other comments on neighborhood streets and bikeways. The most frequently mentioned themes from the **47** responses to this question are listed below. *Answers in their entirety can be found in Appendix D.*

- Concerns about bicycle safety and visibility.
- Desire for separate walking path for pedestrian safety in various locations.
- Desire for stop lights or traffic management in various locations.
- Concerns about continued congestion, especially due to future growth.

Other comments? Are we missing anything?

Many of the printed surveys had additional comments in the margins and some included attachments. *These comments can be found in their entirety in Appendix E.* At the end of the online open house and the printed survey respondents were asked to share any key projects or items they believe the team missed. These comments mostly reiterated the themes spoken to above, but a list of additional themes from the **98** responses are listed here. *Answers in their entirety can be found in Appendix F.*

- Bike and pedestrian improvements, such as lighted crosswalks and a bike path off of main roads.
- Opposition to couplets.

- Desire for plantings and beautification along US 101.
- Concerns about speeding.
- Creation and/or maintenance of back roads for locals.
- Impacts to businesses.

DEMOGRAPHICS OF SURVEY RESPONDENTS

Compared to Phase 1 outreach, respondents were slightly older and more likely to be English speakers. There was a similar geographic distribution and driving was still the most common travel option, followed by walking.

Age

Most respondents were between 65-74 (**46%** responses). A quarter were in the 45-64 age range (**23%**) or the 75 or over age range (**25%**). Only **6%** were in 25-44 and there were no responses from individuals under 25.

Of the 40 Spanish survey responses, **2** were 18-24; **25** were 25-44; **12** were 45-64; and **1** was 65-74.

Transportation

Respondents were asked to share how they got around Newport prior to the pandemic. Respondents could select all that applied from a list provided.

- Driving own car – **61%**
- Walking – **28%**
- Biking – **8%**
- Transit/bus – **2%**
- Other – **2%**

Of the 40 Spanish survey responses, **7** reported driving own car and **2** walking.

Neighborhood

Participants in the online open house and survey were asked to identify the neighborhood they live in. The most representation came from Agate Beach. The majority of those who selected “other” filled in a specific address or location.

- Agate Beach – **27%**
- Bayfront – **9%**
- Downtown – **13%**
- Nye Beach – **15%**
- Other – **28%**
- South Beach – **5%**

Of the 40 Spanish survey responses, **2** live in Bayfront; **6** in Downtown; **16** in Nye Beach; and **16** Other.

Languages spoken at home

All respondents reported speaking English at home, three respondents shared that they also speak Spanish at home and one respondent spoke an additional language not listed. Outreach conducted via phone by Centro de Ayuda was in Spanish with responses recorded in English

NEWPORT TSP: PHASE 2 OUTREACH SUMMARY

APPENDICES

Comments from the online open house and survey have been listed below in their entirety. Some comments have been edited for clarity and to remove personally identifiable information.

Appendix A: Other answers for Oceanview/Nye Street

Eight respondents selected “other” on the online open house and filled in their own answers for this question:

- A new intersection would make it difficult to transition from the extended Nye to Oceanview for vehicles. As a bike path, it could take bicycles and some foot traffic off Oceanview in a difficult area.
- Environmental impact, vehicle intersection on a curve, cost.
- It would serve no valuable purpose.
- Knowledge of the traffic pattern in the area.
- Losing car traffic on 101 hurts local businesses. Losing bikes doesn't.
- Motor vehicles already use Oceanview too much and there's no reason to force a lot of vehicles into what is now a quiet neighborhood, with a gravel road where the Nye St dead ends.
- Not a resident of this area.
- Not familiar enough with this area to comment.

Appendix B: Other answers for factors impacting US 101

Fifty-eight respondents to the online open house and the written survey selected “other” and filled in their own answers for this question:

- A couplet does nothing constructive. There isn't sufficient space for either the necessary traffic lanes or bike lanes on 9th Street.
- Both direction’s travel through the business area are paramount; bikes aren’t as important.
- Can't have the one way in front of the hospital, and if you did Option #2, the distance of the change is too short and will lead to more accidents
- Cheaper fix. It keeps 101 where it is and doesn't mess up existing neighborhoods east of 101.
- For bicycling to be appealing it must be away from 101. Dedicated bike lanes on 9th street would be a great improvement for easy/safe movement. This keeps the pedestrian activity away from busy 101 (avoiding couplet there) and allows the Farmers Market to stay in an ideal, flat parking lot.
- I think a couplet in the locations shown are a horrible idea. Really horrible. I think a "neighborhood bike route" shown running into Nye St. ignores the motor vehicle traffic on SW 2nd St., and Olive Street. People run the stop signs (especially if making a right-hand turn) or roll through that intersection frequently to constantly. Putting cyclists into that mess, particularly on crossing SW 2nd where the visibility is poor near the post office is not smart. Not unless the intersections are changed either to red

light NO RIGHT ON RED intersections. I frequently walk in that area (or did pre-pandemic, restarting recently) & have been almost hit--while in a cross walk at the Nye/W.Olive intersection numerous times. Right now the city can't even manage to maintain the sharrows on Oceanview (4 or 5 are almost completely gone/invisible) which is the route of the Oregon Coast bike route. No reason to expect the city will actually put bike lanes in any time on Nye, etc., particularly not protected bike lanes as I've seen in some cities. Are the sharrows on NW 6th street still there? Or did they disappear when it was repaved? I'd say former Council person Bertuilit's suggestions (to get rid of the parking on 101, make a left-hand turn lane) would be a better idea. So would building bypasses from NE 73rd to highway 20, without forcing vehicles to pass within 2-3 blocks of 2-3 schools.

- I think it would be best to attempt to divert all bicycle traffic off of Highway 101. These lanes are narrow in a number of places. Divert all bicycle traffic from the bridge north to Fred Mayer onto a parallel side street with bike lanes.
- I'm less concerned about traffic and more about the utter ugliness of 101 in town. Businesses on 101 need to do beautification projects.
- It makes way more sense to route bicyclists on 9th street, is way more cost effective, and does not create pedestrian hazard for the hospital campus.
- Locals use 9th Street as alternative to get away from congestion of tourist traffic to get to the rec center, city hall and hospital.
- Makes access for businesses along Ninth Street and neighborhoods on the Bay side of 9th Street.
- Spread out core development. Improve through traffic flow.
- The couplets pose several problems, chiefly access to the hospital and clinics. Even the short couplet will take away a route for locals that eases the traffic burden on 101. Far preferable to keep 101 a 2-way route, eliminate parallel parking on those couple blocks.
- The term couplet is uninformative if that means converting a portion of 101 into two one-way streets. I'm for it as it seems the only wat to avoid the congestion there. So, I'm for the change but think the city would do well to develop an elevated parking structure where the farmers market happens now, with some excavation and thought a place for events could be set regardless of weather. That could become a hub for transit and even provide overflow parking for the bay front and be serviced by the bus system.
- A turn lane on 101 in 2 block area.
- Allows both directions to flow past businesses. Bike percentage vs. vehicles.
- By removing street parking, Hwy 101 and the surrounding area will be safer and look much better.
- Bypassing the downtown shopping street will be even more disastrous for the downtown businesses.
- Concern for business on 101. The change in Philomath made business access difficult.
- Couplets would defeat side street use by locals who know when to stay off the highway at peak hours 11am-2pm.
- Danger --> Bike lanes on 101 would increase ped danger + confusion for heavy tourism traffic.
- Does not destroy neighborhoods to provide traffic throughout for tourists less than 1/2 the year.
- Doesn't bypass main businesses for north-bound tourists.
- Don't believe they are a necessity at this time.
- Far too much summer traffic.
- Having northbound 101 traffic go past the front of the hospital (long) is insane.

- I am okay with the current.
- I don't think the alternatives will improve anything.
- I like Hwy 101 as 2-way traffic. Get rid of the parking and provide nearby parking for the businesses. Direct tourists to where nearby parking is.
- Go to some diagonal parking at the business area.
- Instead of impacting 9th Street with couplets, free access by traffic to the hospital area is essential.
- It (The changes) does nothing to improve these problems.
- Just moves bottleneck.
- Keep traffic flowing better through core.
- Keeps through traffic on 101. Remove parallel parking and create dedicated left turn lane.
- Keeps traffic away from hospital.
- Keeps traffic off back streets.
- Marked.
- Must work with businesses, vehicles, bicycles & pedestrians.
- My neighborhood would be horribly affected (Pine St).
- Neither of the couplets improve traffic flow; you still have bottlenecks at the SB bridge and NB where US 20 intersects US 101. To really improve traffic, a new bridge is needed.
- No desire to turn 9th St into a freeway.
- No interest - not a pedestrian - caregiver takes me in her car.
- No parallel parking in downtown core.
- Nothing gained. Could make the problem worse.
- Reduces complexity, adding to safety.
- Reduces congestion.
- Remove on-street parking and add center turn lane for cars, and bike lane.
- Simplicity for safety for all.
- The attached article addresses the best solution.
- The couplet doesn't solve the downtown problem.
- This is a terrible idea. Just accept Newport is a small town and we appreciate the way it is.
- Tourist shouldn't take over our roads and neighborhoods.
- Traffic flow if parking is removed and left turn lanes added. HWY 101 is focused on getting through town or destinations for shopping. City center isn't a destination anymore and should be redeveloped in other uses.
- US 101 thru town could definitely use more curb appeal.
- With a focus on having apartments above shops in Deco District and better access for pedestrians and bikers (by the City, not part of TSP), this center of Newport could again become vibrant.

Appendix C: Other answers for factors impacting US 20

Thirty-eight respondents to the online open house and the written survey selected “other” and filled in their own answers for this question:

- Bike lane for highway 20 traffic is not needed since bikers do not typically use 20.

- Cheaper fix, less confusing and safer for drivers and pedestrians.
- Couplet a good idea but couplet should intersect Hwy 101 rather than a bottleneck connection.
- How are cyclists supposed to get to those bike lanes and where will they lead to? It doesn't do anyone any good to plop down a "bike lane" for a few blocks when riders would end up where? On 101 going north? Avery until it dead ends going north? Back onto route 20 along stretches where there's hardly a paved surface between the fog line & trees/a steep slope? And what about all the vehicles that turn off of 20 onto NE Coos? Heavily used by vehicles to bypass 101 until you're forced back to 101 at NE 11th (NE Benton effectively ends there). Will a stop sign (which drivers will ignore) be placed at the intersection of NE Coos and NE 1st to protect cyclists from vehicles speeding north on NE Coos? Doesn't anyone pay attention to current traffic patterns in Newport? Want to do something for everyone? Fix the intersection of NE Harney & 20, put in left hand turn signals on BOTH SIDES of the intersection and GET rid of right on red on NE Harney so that pedestrians might actually be able to cross 20 safely at that location. Extend the sidewalk ALL THE WAY to the intersection & down Moore. Both sides of Moore.There's not even a full sidewalk network from that intersection, along route 20, going west to the 101/20 light. How about building one? And putting in some planted space between the sidewalk & 20 so people aren’t asphyxiated by fumes & noise as quickly as they are now--along that sidewalk that has yet to be built?
- I don't see how these options address anything.
- Locals now use 1st Street to avoid tourist congestion at 101/20 intersection, makes it easier to utilize businesses in area.
- Neither of these options helps the congestion at the actual confluence of 20 and 101.
- Neither option seems to make that significant of an improvement to pedestrian/bike safety nor does it sound like it improves the streetscape, something I think 20 desperately needs as you enter Newport from the Valley and see the ocean (an awesome view).
- This gives businesses along 1st street access to be able to egress from their businesses and not be blocked by a busy highway running right by their doors.
- Traffic going past businesses helps them which helps the city. Don't change their routing.
- Bypassing the downtown shopping street will be even more disastrous for the downtown businesses.
- Cannot see that splitting 101 will help, it would make it more confusing.
- Causes congestion on either end of "couplet".
- Continue the couplet on NE 1st all the way to the intersection of US 101.
- Couplet makes no sense if the lanes merge again before the 101 highway.
- Couplets result in high-speed traffic.
- Don't see any problems on Hwy 20.
- Ease at access. Proceed in a left-hand circle to curve any destination on the couplet.
- Expense of land purchase and push of traffic towards residential neighborhoods and heed start bldg.
- Helps to make the center of Newport a vibrant area, not just an intersection for cars.
- I am ok with the current.
- Increased bicyclist safety.
- Increases traffic through mixed commercial/residential areas.
- Keeps traffic out of the neighborhood.
- Marked.

- Must find a way to help merchants w/ this.
- New 1-way routes too disruptive to neighborhoods and businesses.
- No couplet
- None
- None of the solutions improve pedestrian experience.
- Other selections are too expensive.
- Others are not improvements
- Proposal doesn't appear to improve traffic flow, especially the idea of a couplet getting right back to an impacted area
- See other above.
- Stop making tourism a priority, please!
- Stop the couplet nonsense!
- The changes would not help.
- Unfortunately, the long couplet would hinder using merchants for north bound traffic.

Appendix D: Additional comments on neighborhood streets or bikeways

Forty-seven respondents to the online open house shared these additional comments:

- Any pedestrian/bikeway between CR13 (Oceanview Map, existing crossing to Walmart) and N 52nd (out to Yaquina Head) should be on the EAST side of 101. The majority of residences (current and future) are on the EAST side. There should be NO MORE 101 CROSSING POINTS FOR PEDESTRIANS/BIKERS between these two intersections. The new paths could connect with the existing loop trail on the EAST side that goes down to Agate Beach Wayside. Please do not put a pedestrian/bike path on the West side along this stretch. It is too difficult NOW, for drivers/bikers on the West side of 101 to get out onto 101 (particularly heading north), due to heavy traffic and poor visibility in both directions, without also having to look out for pedestrians and bikers coming along a dedicated pathway (going either direction) on the west side of 101. We've had many accidents and at least one pedestrian fatality at Wade Way and 101.
- Bicycles never stay where they are supposed to. On roads they are hard to see and a danger.
- Bike lane between Y Head and Oceanview Drive. Use the current power easement.
- Bike lane from Agate beach just west of 101 and the east of the houses
- Consistent sidewalks, try to traverse Nye St on the East side from Olive St to 16th St the sidewalk where it exists at all is covered with Blackberry diverting most pedestrians into the street. As a disabled person I find walking in Newport to be dangerous and daunting, the public transportation is laughable, I was turned away from a bus for not making an appointment to catch the public bus, the ride share is also fraught with people who don't care and forgotten pickups. I have failed to make medical appointments that take a month or better to reschedule, then to make an appointment to use ride share, one has to call in with a few weeks' notice but never over a month in advance. Your system is flawed and the public Cab service is little better many times they have not been available even before Covid began the problems were there.
- Controlling traffic and enhancing pedestrian and bicycle use on Oceanview is critical. It is extremely dangerous. Speeds are often extensive as people use the route to get around 101 traffic.

- Fix the timing of the traffic lights on Hwy. 101 to prevent the unnecessary congestion of vehicles in Newport. If it's ODOT's fault, get them to redo it right this time. This would help everything, including bicycle safety. Change the rights things. Not the wrong things!
- From Hwy 20 on Benton Street - onto Angle Street, then to 9th Street - and all the way to the cutoff on 101 (just next to the hospital) ...is a very busy thoroughfare. I live on Benton Street, and if there were any way to SLOW TRAFFIC DOWN at the corner of SE 2nd Street and Benton (LIKE PUT A STOP SIGN OR A LIGHT), it would be MUCH appreciated. Accidents happen there all the time, as well as pedestrians almost getting hit on a daily basis. It's a horrible place for a crosswalk to Oceana/Rec Center side, when people tend to go 35-40 around to the top of the curve. PLEASE INSTALL a STOP SIGN at the LEAST. PLEASE.
- I live in Agate Beach and walk to the Yaquina light house enough to know how dangerous it is for walkers along Lighthouse Drive. IT IS SCARY due to lack of physical separation between the edge of the road where pedestrians are forced to walk, and vehicle traffic - which is typically traveling at high speed as cars transition from Hwy 101 (45 mph) to Lighthouse Drive (posted as 25 mph). Ideally, PLEASE create a separate WALKING path completely separated from Lighthouse Drive (by distance/barriers) and running from the intersection of Hwy 101 to the west end of Lighthouse Drive (at the Lighthouse), so that walkers can avoid danger from automobiles. Also, please work with BLM to install speed bumps, rumble strips, and/or radar speed indicators along Lighthouse Drive to slow cars down.
- I live in agate beach and walk/run in the area regularly with my dog, daughter, my wife, friends, etc. and have had MANY very close calls at the intersection of 101 and lucky gap due to speeding. I want to recommend speed bumps on the portion of lucky gap that is north/southbound. Lots of cars speed on the street, and there is a blind curve leading to 101, and people try to "beat the light", which is when myself and others have all had close vehicle vs. person collisions. Thank you.
- I would like to see a cross walk with flashing lights on highway 20.
- I'm very concerned about speeding on roads that are designated shared space for bikers and pedestrians. Specifically, I live on Oceanview Drive and the speeding is very dangerous. There are many pedestrians and bikers on that road, especially near Agate Beach State Park, and it is not safe for bikers and pedestrians. Speed bumps, one way traffic, other measures are necessary to give more room for bikers and pedestrians.
- In Agate Beach, the city should be aware that Tim Gross, the former public works director, put a CURB in where NW Gladys, shown as a "connector street" on the map, should enter NW 58th St (shown on a plats of that area). Why did that happen? I'm fine w/Gladys being a pedestrian connector but do not see the point of it being a bicycle connector, why would a cyclist ride there instead of on 101? I would focus on building an OFF ROAD but adjacent to 101 multimodal (bicycle, pedestrian, mobility scooter) path from the north city limit into central Newport. There is a RR right of way on the west side that provides a great location for such a path. There is also inadequate explanation of what a "priority bikeway" means in terms of what will be provided for cyclists. Or what kind of traffic calming devices will be used to make it safer for pedestrians too. Right now the city can't manage to maintain the few sharrows it's got, it has shown almost zero regard for cyclist safety (pedestrians too), so what's proposed in this TSP seems to be aspirational only, we'll say we'll do it but it'll never happen. On the Yaquina estuary, the "priority bikeways" don't connect, so people can't ride one route going in one direction, another returning even though there are streets that would enable them to do so. The city

needs to think in terms of people using bicycles for TRANSPORTATION, daily transportation, same way motorized vehicles are used. The Oceanview map shows huge gaps in a priority cycling network--cyclists, like everyone else may want to minimize energy output by being able to travel along the shortest line to their destination, so that network is clearly inadequate--it does not implement that principle. Downtown area shows same deficit as the Yaquina estuary, there is no real network, there are multiple legs that just end. What happens then? The cyclist is dumped into a mass of motor vehicle traffic?

- In favor of getting vehicular traffic off Oceanview Drive between NW 12 to Agate Beach to increase safety of pedestrians and bicycles on Oceanview Drive. In favor of connecting north/south traffic from Oceanview Drive onto NW Nye.
- In particular, Oceanview has a lot of cars, many of whom travel very fast through the more northerly section. The parking that occurs on the side of the road around Agate Beach Wayside creates a danger to the occupants getting in and out of the cars. The speed limit needs to be less and probably no parking allowed beside the road, no matter which option of road design is chosen.
- "INT7 (right in/out only) is very worrisome. While I understand the hope is to limit congestion on 101 by doing so, changing this intersection will severely limit residential neighborhoods between 101 and Bayfront from safely and easily accessing 101. Likely traffic from these neighborhoods will fall onto SW 10th and SW 11th street, which is very residential and has no traffic calming measures proposed, to access 101. Please consider an alternative solution for the sake of long-time residents in these neighborhoods.
- Making 9th street a priority bikeway sounds great if 101 does not become a couplet. It would be a fantastic solution. Keeping cycling off of 101 and providing a parallel and relatively flat path for bicyclists is ideal.
- Disappointed to see the shared street draft image. I think the only way to make Newport enticing for walking and bicycling is to provide a path separated from the road (separated by curb, vegetation, or something else). This image seems to depict a 'sharing of the road' situation, which never seems to increase walking or bicycling appeal.
- I believe 9th and 10th street should be classified as a neighborhood collector and not a major collector simply because of the hospital and Newport Recreation Center pedestrian activity. Already vehicles are driving too fast on these roads, especially 10th street, making crossing the street and pulling out of the Rec Center parking lot dangerous. They should be classified as neighborhood collectors to allow for measures to manage the speed of vehicles.
- It is difficult to see the illustrations and assess how they would work. We have WAY too much traffic at the intersection of Hwy 20 and 101. There are too many vehicles backed up at the lights, too many trying to make turns on the off streets. It would not be safe for bicycles to be there at all. The pedestrian crosswalks with blinking lights aren't even safe. I have seen way too many cars not stopping when people are crossing!!!!

  1. Trucks, RV's and other large vehicles need to be redirected some other way to 101 and away from the main intersections and avoid driving in town as much as possible.
  2. PRIORITY issues after Covid decreases but start now:
     a. Need electric buses and more is a must! (first on agenda) More bus stops (covered for the winter climate) better routes to encourage more use. The dial a ride works well but one person per bus is not energy efficient. The regular bus schedule is complicated and trips take too long. No one wants

to take all day to go to one or two stores. We need to encourage more bus use. That would free up the roads for more bicycles also.

b. Electric shuttle buses for tourists.

c. Speeding. Have more speed signs with fines listed on them and enforcement. People drive like maniacs without much consequences. Can your volunteers with the police give speeding tickets?

d. Where is the education? EVERY license renewal should require a manual test with all updates of new traffic rules and old ones that people are not abiding by! And those questions to be on every exam.

- It would be nice if the Toledo business 20 intersection at the DQ would be addressed. Perhaps a roundabout could be built to create a better flow for traffic?
- It would be nice to someday have a bike/walking path that connects all the way through Newport that is not accessible to cars so we can feel safe riding and walking.
- Oceanview should be closed to through traffic except bikes and peds.
- "On ""TR6"", I think you would have more use of that route if it were to connect to Fred Myer/Safeway area via Frank Wade Park. I do this all the time. Otherwise, for that section of town, the only way to get to that part of town from the NE section is on the HWY. Also... 101,(in my opinion) should be avoided as an option for cycling at any point in the downtown area/core. I've ridden in Newport most of my life (I'm 61). Lastly: an improvement in the 1800 blk of Ocean View Dr by widening, even a few feet, would improve pedestrian and cycling safety."
- Overall in all area maps, there is too much emphasis on bikes considering low bike use by Newport residents. Priority should be on improving bike safety route most bike tourists take from 101 on Oceanview through Nye beach area to the Bay bridge going south and through South Beach.
- Please take this opportunity to add some beautification to our town. Most especially the downtown core where not only is there no apparent landscape plan, but vacant buildings are allowed to decay.
- "Re: Agate Beach .... Is this about residents' or tourists' needs/safety?
  Your informants' identification of ""neighborhood street collectors"" in Agate Beach, i.e. 55th NW & Gladys, is specious. Gladys does not even go through from 55th to 60th, though it needs to.
  58th has more, faster traffic and more children/pedestrians than 55th.
  But then it is mostly residential, i.e. not so much for tourists other than a few modest rental.
  55th is gravel and obviously rates attention as it goes to the posh houses.
  58th is paved to the 300 block and direly needs speed bumps/limits and children-crossing signs."
- Regarding the Oceanview Connection to Nye St, only one choice was allowed. We like both Full Street Connection and Multi-use Path (no vehicle), but since forced to choose, went with multi-use path because we think it will be easier for the city to implement.
- Regards to the Electric car charging areas, how about the old Chevron gas station next to City Hall? That would be a great location for another EV charging station.
- Shared streets option looks fine, but I would prefer the buffer between the cars and pedestrians to help protect pedestrians from cars losing control and hitting them.
- Some of these plans would be easy to establish. There is no way to enhance bicycles going across the Bridge. There is ample room to widen 101 south of the bridge and North of 20th street. Planning needs to look further to the future not just try to fix the issues that there are right now.

- Some years back, Golf Course Drive was slated for basic improvements to meet city codes. Are those plans still going to be carried out?
- South Beach residents need improvements on SW Jetty Way to more safely separate bicycles/pedestrians from vehicles entering and exiting the day-use area of the state park.
- SW 2nd needs a sidewalk on the North side for pedestrians walking to work at hotels, families going to the beach and playground, and locals walking to and from services on 101. The road is wide enough there could also be a bike lane. The intersection of 2nd with High-Alder-4th needs to be calmed with speed humps or something. Cars speed around the corners and it is a confusing intersection, especially with the odd-angled intersection with 3rd just beyond that. It is also the ambulance route to 101 from Nye Beach, so it needs to be made safe somehow. Thank you!!!
- "The bicycle/pedestrian improvement seems to fall short on SW 2nd street and should go all the way to the 101 and Angle Street intersection. Lots of pedestrians crossing there so it makes sense to do so to help the current flow of pedestrians and bicyclists.
- Perhaps consider some 'enhanced crossings' to be under the highway (101 or 20) or to be over the highway. Seems like one in Oceanview section for 101 crossing and one in Downtown section for 20 crossing would be ideal. Boulder, CO has under highway crossings for bike paths and it makes for a super bike friendly and safe feeling place.
- The shared street design looks like it will create one-way streets? If that is the case, I am disappointed that this is the direction the city is leaning towards especially when this one-way incipience does not result in dedicated bicycle only paths or buffer vegetation to separate the vehicle traffic from the pedestrian path."
- The first block of NE Harney St north of Hwy 20 is dangerous for bicyclists (narrow--very poor-quality pavement) and needs to be widened. Also, signal light triggers for bicyclists are needed at this intersection (Hwy 20/NE Harney-SE Moore) especially at the SE corner. The pedestrian one is too far to be easily reached on a bicycle due to placement and curbs.
- The long and short couplet ideas are just really bad ideas for Newport for so many reasons.
- The maps are difficult to decipher without any street names on them.
- There needs to be more pedestrian crossings, either stop lights or at least flashing lights, across Hwy 20 between 101 and the current pedestrian crossing near Eads.
- "Think about partnering with Newport High and the art program and make 3-D crosswalks on Eads. If successful, then do it on the Bayfront and possibly Hwy 101! 3-D crosswalks in Iceland
- Traffic circles are a poor solution for traffic calming. Many I have seen have been abandoned for 4-way stops.
- Very concerned that paving 55th Street will increase speeding and congestion. In favor of including several speed bumps and other measures to slow traffic in the Agate Beach neighborhood.
- Very difficult to turn West onto 20 from Fogarty SE. Very unsafe to cross as a pedestrian at this intersection as well! I'm sure it's similar for most of the side streets connecting highway 20. Need lights or roundabouts to help with long wait time and unsafe merging, especially during high tourist times. It's a priority to create safe bikeways. I've seen them in other towns and the lanes are colored green.
- We live in the Agate Beach community and have 2 non-drivers (by choice) in our family. My wish for Newport is that there is a designated pathway for pedestrians and bicyclists along Hwy. 101 (such as the one in Corvallis along Hwy. 20) that starts around NW 60th Street and leads into Newport. There

are so many speeders and distracted drivers along Hwy. 101, my 2 walkers in the family feel it's not safe to travel along Hwy. 101 on foot. If I'm looking at the map correctly, this looks like it may be in plans??? Also, we have a lot of tourist traffic coming off of the highway and flying down NW 55th and NW 56th Streets, many times ignoring the stop sign on NW 55th. They're trying to get down to the parking area on NW Pinery/NW 55th Street to view the lighthouse/ocean or go surfing. It would be nice if there was a traffic calming solution for these two streets. We've lived in this neighborhood since 1993, and it seems to be getting worse in recent years.

- We need to slow down traffic on Lighthouse Drive AND make provisions for separation of biking and pedestrian traffic from speeding vehicle traffic in this area.
- "Who is more important? The businesses struggling to eek by or the few bikes traveling north and south that could very easily change their path to quieter streets. Try doing that with a truck or large RV. Can't be done. Leave what works. Who was the Einstein who brought this up?"
- Why are there no enhanced crossings on Hwy 20 and Eads or along the Hwy 20 to 101 section? There are kids and people that try to cross all the time, especially when school is in session. The same goes with people crossing at the Eagles and Shell while cars are stacked at the lights. Traffic congestion is one issue and speed on Hwy 20 is another issue, I would like to see these addressed in this conversation as well.
- With limited funding available, I suggest we focus on a handful of good projects that could actually be implemented within the next 10 years. There are so many potential bike improvements listed the vision is muddled and not focused.
- With the new addition of apartments near the Big Creek neighborhood, traffic congestion is going to get serious at the intersections of the entrances from 101 (31st especially, but also at 36th). It's already an issue pulling out onto 101 during the summer, and with that addition of hundreds of new residents, it will be ugly. Plus the fact that the little road on 31st is already dangerous for bikers and pedestrians, I think those areas should be considered in this overall plan, but I didn't see much on the Oceanview map to show improvements to these areas.
- You employ a lot of jargon and limited choices of response throughout this presentation. The couplet proposals don't seem to really address anything; they leave all the same bottlenecks that exist now. Identifying ""priority bikeways"" is fine, but what exactly will you do with them?

Appendix E: Additional written comments

Forty-one respondents to the printed survey wrote in additional comments on the margins of their surveys.

- 91-year-old
- And continue couplet all the way to us 101
- Arrow to short/long couplet: absolutely not
- Attachment: pg. 11.43 "Proposed Route #4?"
- Attachment: pg. 11.46 cutout from newspaper
- Circled speed cushions and speed hump and wrote "no"
- Circled Speed cushions; Longer crossing lights for disabled persons/and people on wheel-chairs!; Not SE 9th/Government
- Circled speed hump

- Circled speed hump: Coming down 3rd to Birch
- Ease; 513 NW 9th, Newport (Actual)
- Eliminate parking in downtown core street/101; put in turning lane at Hubert; bike lane not needed for Highway 20 traffic
- If traffic separated, only 50% are flowing through district causing only southbound traffic to see shops.
- Make pix bigger :(
- Marked X over traffic circles - Poor solution for traffic calming
- Multiple selections: 45-64, 65-74
- On maps of US 20: "Are the yellow circles traffic circles?"
- On Q2: Remove street parking on Hwy 101 and put in turn lanes.
- Other transport: "Would use with transit/bus with improved service, perhaps more frequent mini-buses, particularly in summer for tourists."
- People speed in that area now. They will continue to speed. Now they will have more room to speed. (unreadable)
- Q1. "creates hazards"
- Q1. "some people don't stop for pedestrian lights." Q2. "I don't understand this very good."
- Q1: "don't like any."
- Q2: "eliminate parking on 101, but where is parking for businesses in those 2 blocks?"
- Q2: "eliminate street parking on 101 and make turn lanes."
- Q2: "turn lane from both directions."
- Q2: crossed out "with dedicated bicycle lanes on 9th Street"
- Same as now!
- Scratched out neutral "OK, if well thought out and necessary; smart planning can improve existing traffic flow; I drive everywhere”
- See attached article, could not say the solution any better!!!
- Selected two-way travel and short cuplet (US 101 option)
- Speeders! Have requested a 25 mph solar sign but nothing yet!
- Sticky note attached: Resident and visitor concerns re: 26th St access to So. Beach State Park and beach/jetty area. Currently 26th St. is used by RVs, trucks with trailers, pedestrians, mothers with strollers, bicyclists, etc. A shared use path as an extension of the existing path around Rogue is desired for public safety and enjoyment of visitors and residents alike. Extend it to the end of jetty without excessive cost or environmental impact. I think that Newport should adopt a transportation goal to be carbon neutral by 2035.
- Sticky note attached: What is missing here is all effort to reduce carbon emissions by making public transportation available to more people. Can be done with a mixture of buses and vans. Bike paths are very important.
- Thank you for this input opportunity; Wish I could read the streets. It's too small to see!!; Same Q; What is streetscape?; See Q#2 9th street; Redundant Q
- The bump-outs are dangerous and ridiculous!
- The only thing they wrote on their survey were big red Xes over the couplets on the US 20 maps and on the "traffic circles" image.

- The only thing they wrote on their survey were big red Xes over the couplets on the US 20 maps and on the "traffic circles" image.
- Totally circumstantial to each event
- Underlined "makes it easier to drive around town"
- Wrote "no" across "with dedicated bicycle lanes on 9th street;" wrote "maybe" on improves safety for peds and improves parking. Bicycle community uses to many highway (unreadable) from traffic improvements. Bicycling makes up less than 2% population and bicyclists contribute little (unreadable).
- Yes - thank you!
- Your maps are too small - What is a couplet?

Appendix F: Comments for “Are we missing any key projects?” “Are we missing anything?”

Ninety-eight respondents to the online open house and the written survey shared additional comments:

- Additional off street parking options for 101 through downtown with street improvements to encourage visitors to get out of their vehicles and eat and/or shop, whether they are coming from the north or the south. Eliminate on street parking from SW Fall through Angle to maximize visibility of businesses? Flowers on light standards? Planters on curbs?
- Again, it is important to me that we show some pride in our town. You only have to look at our neighboring towns to see what can be done.
- As mentioned above, South Beach residents need safe pathways along SW Jetty Way to separate pedestrians and bicyclists from motorists accessing the South Jetty day-use area of the state park.
- Bike and ped trails should connect neighborhoods so people can commute to work, shopping and play.
- Harney Bypass
- I did so above.
- I feel there should be more lighted crosswalks between Hurbert and the bridge on Hwy 101, it would make it easier for people who walk and bike to be able to get across the street.
- "I have never heard of a pedestrian friendly street that doesn't place the BUFFER between motorized traffic and pedestrians, yet one of the city's examples of a street does just that. I see little to demonstrate any commitment to creating a complete sidewalk network and/or off-street multi-modal transportation network so that people can safely, maybe even pleasantly use walking or cycling as their primary mode of transportation. Without having to walk or ride twice as far as motor vehicle drivers drive to get to their destination. Will these proposed networks bring people from Agate Beach (particularly north of Yaquina Head) to workplaces in SAFELY and as directly as possible (short a trip as possible) into central Newport? If not, then the plan is fatally flawed as it does not provide people with other ways of getting around other then motor vehicles. You want to make 101 less congested? Then get people out of their vehicles. The city can do that funding a GOOD bus system that full time workers, and shift workers can take to their jobs, meaning the bus goes from residential to where most of the jobs actually ARE in Newport, and/or the city can make it as easy as possible for people to walk or cycle or use a mobility scooter or electric wheelchair. Right now, people risk their lives & health cycling and walking, using electric wheelchairs, immediately adjacent to all the huge trucks, RVs, BIG pickups, and other motor vehicles on 101. As in 3 feet away. The area outside of the fog lane, if paved,

is NOT kept cleared of trash, pebbles, small rocks, to make it safer for cyclists to use. Many vehicles travel at speeds greater then 45 mph from Moolack Beach to the light at 25th street. I have not seen any proposal in this plan that will make it safe for people to walk/cycle along the most direct route into town, ie., 101. If that's what's provided for drivers why does the city refuse to provide the same direct route for pedestrians & cyclists--a SAFE route. Maybe even one that's not unpleasant due to the roar & fumes of traffic.

All I see are piecemeal solutions. I have seen no proposals to improve or greatly expand the sidewalk network, not even in central Newport. The proposed couplets are horrible ideas. I would suggest building true bypasses, like from NE 73rd to route 20, so that only those people who WANT to come into Newport come into the central part of Newport. Anyone who's wants to get only to 20, could do that on a bypass, that would include some huge trucks, etc. The couplet would not help anyone get through Newport faster. Anyone who's driven the couplets in Philomath knows that, all that's happened is that some formerly residential areas are now exposed to alot more exhaust and noise pollution and it's far more dangerous for them to cross what used to be a far less traveled street. Both proposed couplets will increase the noise & pollution of vehicles near the hospital, hard to imagine how the city could think that would be a good idea or good for the patients."

- I hope that as the housing opportunities continue to grow in Newport as new developments pop up, consideration for congestion mitigation becomes a requirement. As the number of places grow on the northern end of 101, safe ways to enter and exit the highway should be considered BEFORE it becomes an issue and people get into wrecks trying to pull into relentless traffic.
- I live just outside Newport but am in town almost daily. I think the biggest problem is 101's incredible ugliness. I have joked that Newport's motto ought to be, "Not quite as ugly as Lincoln City." We need a plan to slowly change 101 so its businesses put parking in back instead of in front and do much much more to with plantings and other beautification measures along 101.
- I shared my Hwy 20 concerns in the past section.
- I would like to repeat my opposition to making 9th St one-way. It compromises access to the hospital and clinics, takes away a valuable option for locals to bypass the seasonal congestion on 101, and is a costly and disruptive project. Instead, eliminate the parallel parking on that short stretch of the highway. Put bike lanes in its place and locate additional parking spaces nearby.
- "I would love to see a focus on funding and implementation for all of the solutions included in the final TSP. Many of the bike and pedestrian improvements proposed here were included in the previous TSP and remain unbuilt. I also think it's important to prioritize projects to some extent so the city has a guide to phase in and fund changes and improvements over time. Lastly, I am in favor of the couplet concepts but only if they do not add any more travel lanes or widen existing lanes. If the focus continues to be on moving more vehicles through Newport at minimum speeds of 35-45 mph, the city will be planning for more of the same: promoting dangerous conditions for pedestrians and cyclists and creating non vibrant, unattractive and unwelcoming auto dominated streetscapes along the “gateways” of hwys 20 and 101."
- I've lived in Agate Beach for greater than 10 years and have not used my bicycle once since moving here. Whereas before that, I was an avid road bike rider. The reason I do not ride now is that Hwy 101 is just too dangerous for me. If I want to ride anywhere, I would have to load my bicycle and go somewhere else. I would love to see a secondary route parallel to Hwy 101, or a dedicated bicycle path that is completely, physically separated from Hwy 101, running from the traffic light at the

intersection of Lighthouse Drive and Hwy 101 south - all the way to the Oceanview area where connections can be made with other routes to completely avoid having to ride on Hwy 101. That would be enough motivation to get me back on my bike.

- Let me toss this in, build a light rail system to connect Newport, Lincoln City, Toledo and Siletz to start, this could be a project for the Tribes to become involved with, Imagine Grand Ronde setting a line to Salem to connect the coast to the valley. Just a thought. Better overview of the offered public transit Busses and Cabs should run on time provide dependable transit and get rid of the more offensive drivers.
- Many years ago there was serious talk about connecting Nye Street between NW 16th through to the north. This would help create a back
- Pedestrian path from recreation center parking lot to SW Hatfield Dr. People have created paths there already, preventing vegetation and increasing chances of eroding the hillside.
- Plans should focus on keeping traffic on 101 flowing through Newport with synchronized traffic signals and by not adding many more pedestrian crossings. Priority for biking should be on making biking safe for tourist biking on Oceanview.
- Please see my previous comment about installing a STOP sign, or a traffic light at the corner of SE 2nd Street and Benton Street. It is a VERY dangerous corner. Many accidents happen there, and pedestrians cross that road all the time in the crosswalk.
- "Strongly against a Highway 101 couplet (short or long). Strongly against roundabout at Highway 101 & Highway 20."
- The light by Szabo's has created traffic backed up to NW 36th Street (or a few times back past the light at WalMart). During heavy traffic flow times (summer, spring break, etc.), maybe adjust the traffic light so it stays green longer for the highway traffic to flow and have those turning onto the highway coming from the east and west making a left turn wait a little longer. Just one thought. There may be a better solution than this, but it has been a problem for us locals just needing to make a quick trip to the store to pick up a few items.
- "This survey is about transportation but I do not see anything about improving the poor bus availability in the 'off' season. Especially for people living in the low-income housing north of town. How are they to get home in the off-season other than walking/hiking in the rain/dark?"
- Very difficult to visualize the proposed improvements shown in these simple graphics.
- Very opposed to 101 couplet. It doesn't seem the expense of creating it, the negative effect on residents between 101 and the Bayfront (increased traffic, noise), or the one-way street inconvenience for drivers on 101 would be worth the benefits that are predicted from creating such a change. Please do not create the couplet.
- Where is the public transit option?
- #1 Will a stoplight be added at Hurbert and 9th St. #2 Desperately need additional parking and possible shuttle for tourist areas. Shuttle can pick up and drop off Nye Beach, Bay Front, Aquarium, etc.
- Additional light on Hwy 20, maybe on Eads St.
- Alternate 101 routes disrupts community ambiance and disrupts residential areas and negatively affect businesses.
- Any couplet will by pass businesses.
- Bridge is really the actual bottleneck

- Bypass from Hwy 20 to Big Creek Res. Taking the pressure off of Hwy 101. Making this bypass autos only, no heavy trucks/trailers/RVS/becoming safer for students.
- Can we reset the lights so more side street exits and turns are not held up for 7-8 mins
- Cars speed up and down NW Coast!!
- City bypass before reaching Hwy 20/101 junction.
- Consider using traffic circles instead of stop lights.
- Consider which solutions are doable in the near term rather than always reacting for a future vision.
- Costs on Hwy 20 and 101 intersection.
- Couplet adds unnecessary complexity and dangerous conditions.
- Couplets are a nice ideal however I'm concerned about re-routing cross traffic and congestion of the ends.
- Don't use the bus
- Downtown is horrible - hard to park. I rarely shop there. Also dangerous trying to get out of car or parking spot.
- Eliminate parking along 101 from Hurbert to Columbia Bank
- Extreme congestion on Hwy 101 during summer months - cannot turn left from NE 71st
- Forget the traffic circle @ 101 & 20!
- Harnet Bypass
- How are you proposing to SLOW traffic in 101 from Walmart to Hwy 20 intersection? Speeding trucks are HORRIBLE
- I have property on NE 1st street/property value decreases with couplet
- I never ride the bus so I don't know what would suit a commuter or visitor
- I think building roundabouts on Highway 20 and Moore as well as Highway 101 and Highway 20 would greatly facilitate traffic.
- I think we should have a regular traffic light at 101 and SW Angle. Some people don't stop for pedestrian lights.
- I think you should deal with our aging bridge and then work on traffic flow.
- I would like to see a traffic mgmt project put into NE Big Creek Road. Speeding and going down the wrong way road is norm. People doing doughnuts in gravel - high pedestrian use walkers, joggers, bikes - including families - small children etc.
- I would need more info. Whatever you choose it will not reduce number of cars, etc. More every day, year.
- If something is not really broke… don't try to fix it; the real problem is overpopulation!
- I'm assuming pavement improvements would be made on NE 1st for the couplet option
- Improve/create pedestrian sidewalk from fairgrounds/high school to/past Elks on Harney/Moore, west side, for safety.
- It is not at all clear where the "eligible streets" can be seen online within the website. Regardless, there are several 3-way stops at 4-way intersections that would be well-served by traffic circles.
- It's not clear how this would affect (solve the bottleneck) at 101-20 intersection
- Maintain gravel roads - cutting grass and bushes encroaching on roadway! SW 11th and Hurbert.
- Make a back roads route for locals. Do this by changing the direction of stop signs and putting in a stop light on Hwy 20!

- Make every dollar spent improve conditions for every interest - simple - not easy
- Making existing residential areas a highway is horrendous
- Making existing residential streets A (Hwy 20 or 101) state highway is a horrible idea!
- More bike lanes
- More options on #5 above
- NE 1st St at 101 should be a right turn only - also would like to see photo traffic ticketing @ 101 and 20
- Need a pedestrian light at Eads & 20
- Need more parking areas. If we are a tourist town we need some place to park their cars other than the city street
- Need turning lane at Avery and 101 (or middle lane)
- News-Times Aug 11 2021 "Viewpoint" I agree on all points!!!
- No street parking on 101. Clean sidewalks. Put in more left turn lanes. Light at 40th for OCCC students. Light on 101 to exit hospital.
- On Hwy 20/1st couplet have west lane on 1st - right turn onto Hwy 101.
- Our traffic on 101 both N& S very heavy - hard to get out onto HWY from Avery St 71st or 70th
- People who buy things do so from a car. Retail street locations are for shopping.
- Please fix the Harney St/Hwy 20 intersection as a priority. Don't use bump outs like in Nye Beach or roundabouts.
- Remove on street parking from US 101 downtown. Then widen traffic lanes.
- See my comments above
- Stop sign at NE 8th and Benton. Too much speeding on NE 8th. Several recent collisions
- Synchronize stop lights on 101 to keep traffic flowing (as in downtown Corvallis)
- Take care to recognize the influence on those business which may lose customers due to a couplet.
- The attention to rural streets in Agate beach.
- The intersection at Hwy 20 and Harney. This is a VERY dangerous one and should be modified.
- The left turn on Avery & 101 - impossible to get out, we need a turn lane.
- The main problem is where 101 goes through downtown starting with the Armory and ending at Hwy 20. None of these (unreadable) solve that problem.
- There need to be more signs or markers on our roads and streets for all the idiots making terrible u-turns.
- There was no mention of traffic control by utilizing enforcement lights, directional ??? (pg 30), with clearly marked lanes, etc. mentioned in survey. What was the overall focus of this ????
- Tourists driving 101 can see entire downtown business area.
- Transportation won't take climate change into account.
- Turn lane on 101 instead of couplets.
- Uniformity of building colors and designs and beautification ie, ??? in concrete pots (p16)
- US 101 and US 20 junction needs to get pedestrians across without putting them in crosswalks!
- We're at a time where hwy/street funds are at a premium. We cannot commit funds to anything by traffic and sidewalk. ??? (p6)
- When you make maps so small it is difficult to figure out where the streets are!
- Would there be parking on both sides of the one-way streets?

- Yes bayfront traffic!!! Perpendicular parking - cars only! Parallel parking and lot parking trucks only!! Truck and parking makes 2 lanes and traffic impossible
- Yes, where I live it would impact our ability to get out of our neighborhood - Hatfield evacuation??
- You don't get it! Couplets increase complexities on and off to two way travel
- You need one or two flashing crosswalks like on 101! It is practically impossible to cross 20 on foot or bike! One by Coos and one by Eads.

City of Newport

TRANSPORTATION SYSTEM PLAN

DECEMBER 2021

NEWPORT
OREGON

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Chapter 1: Executive Summary

[PLACEHOLDER - TO BE WRITTEN LATER]

Chapter 2: Transportation System Context

This chapter introduces Newport and describes what a Transportation System Plan (TSP) is and how it was developed. The process involved a formal decision-making structure, community engagement, and a structured technical analysis.

NEWPORT AT A GLANCE

Located along the shores of the Pacific Ocean and Yaquina Bay, Newport is a dynamic City with neighborhoods that cater to residents and visitors of all ages and interests. The population of permanent residents in the City is 10,125, but that can rise to 25,000 during a summer day, as visitors are drawn to the City's beachfront, numerous outdoor activities, attractions, eateries, shopping and more. It is home to an active fishing industry, miles of sandy beaches, Oregon State University's Hatfield Marine Science Center, the Oregon Coast Aquarium, and the home port of the National Oceanic and Atmospheric Administration (NOAA). Several neighborhoods are within Newport including Agate Beach, the Deco District (aka Downtown Newport), Nye Beach, Bayfront and South Beach, each with its own unique character.

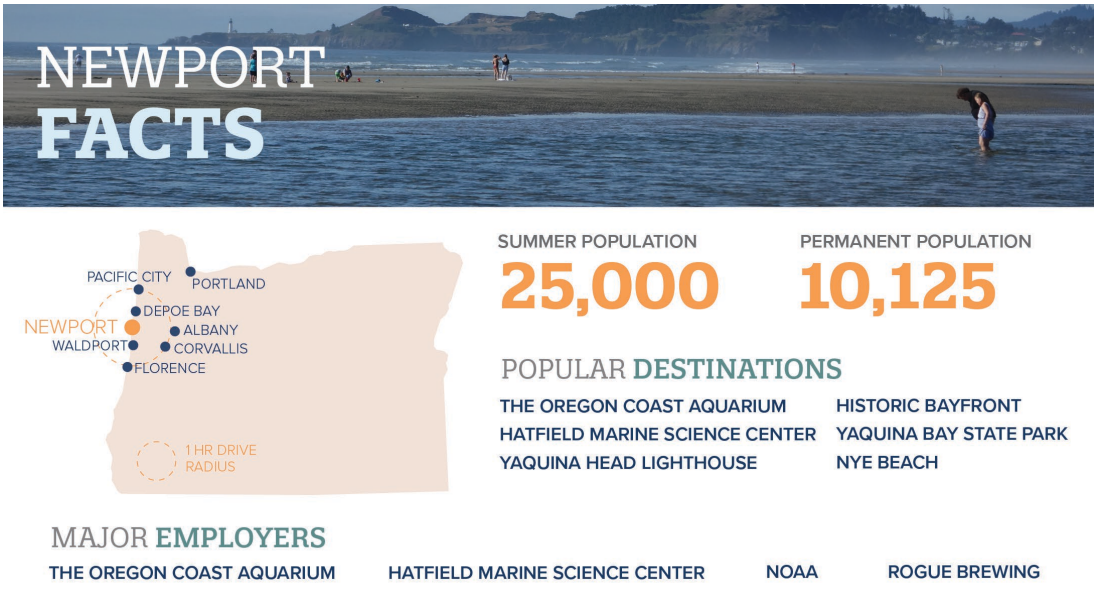


FIGURE 1: KEY TRANSPORTATION FACILITIES (NORTH)

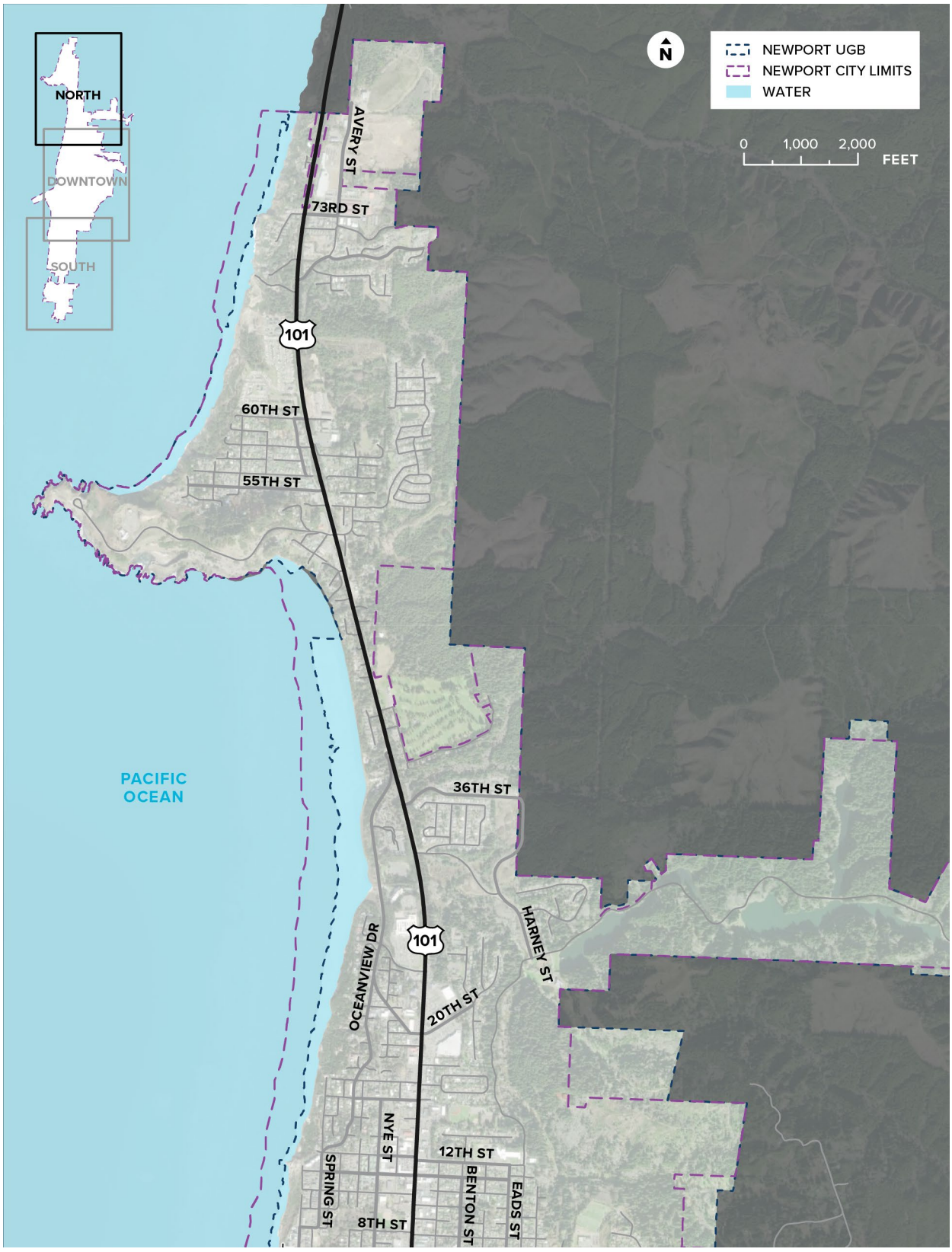


FIGURE 2: KEY TRANSPORTATION FACILITIES (DOWNTOWN)

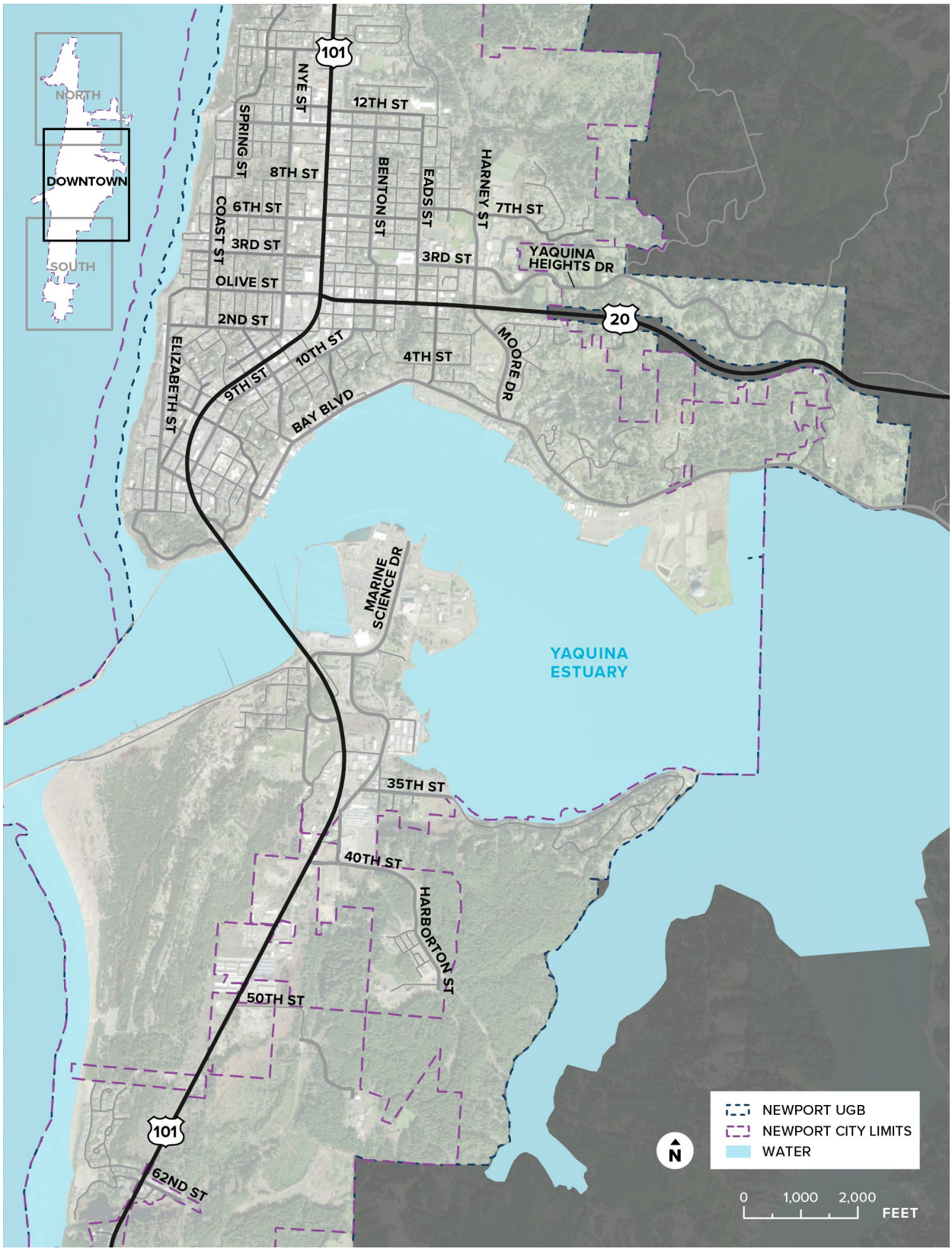
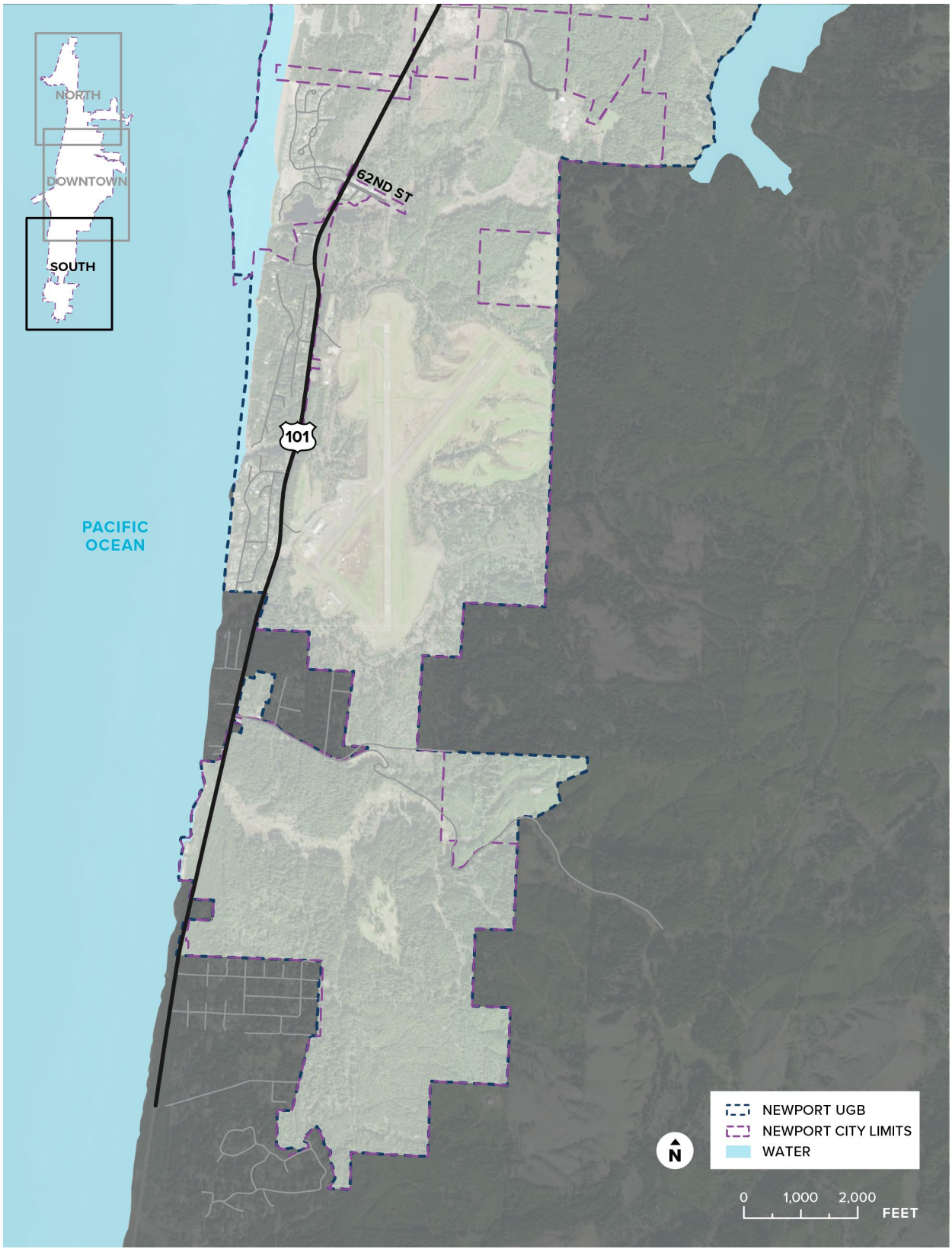
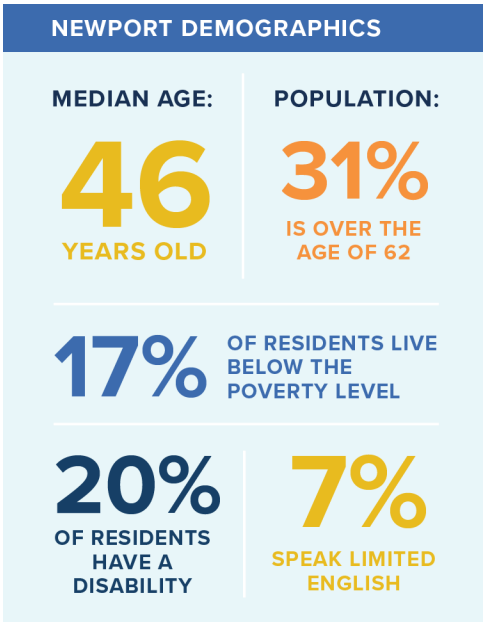


FIGURE 3: KEY TRANSPORTATION FACILITIES (SOUTH)



Residents of Newport have a median age of 46 years and just over half, 51%, of all residents are within the peak working age range. Also shown in Figure 4, about one-third (31 percent) of the population is over the age of 60. The city has similar demographics with the rest of Lincoln County in terms of the share below the poverty income level, 17 percent, and people with disabilities (20 percent), while 7 percent speak limited English. These demographics are significantly different than those of the State, with the City accounting for a 10 percent larger share of residents aged over 62 and up to a 5 percent greater share of residents living below the poverty level, with a disability, or speaking limited English. The source for the Newport demographic data was taken from the American Community Survey, 2015 to 2019, as reported by the US Census Bureau.

FIGURE 4: KEY DEMOGRAPHICS



As growth continues in the City, it will likely to show a higher share of older residents choosing to retire on the coast compared to other areas of the State, which influences the likelihood of more residents living on limited retirement incomes or having a disability. The City will also likely continue to see younger people and families choosing to visit and live in Newport, and likewise will continue to see people of all ages and abilities walking, biking and using transit.

KEY TRANSPORTATION OPPORTUNITIES AND CHALLENGES

Newport faces the challenge of accommodating population and employment growth while maintaining acceptable service levels on its transportation network. The transportation system must accommodate highway through traffic, residents, and thousands of tourists who are here in the summer and over holiday weekends. With limited funding for transportation improvements, and built and natural environment challenges, the City must balance its investments to ensure that it can develop and maintain the transportation system adequately to serve the City and everyone who travels in it. Some of the key transportation opportunities and challenges in the City are summarized below, with more details provided in Chapter 3 of this TSP.

US 101 and US 20

U.S. Highway 101 (US 101) and U.S. Highway 20 (US 20) are the spine of Newport's transportation network. US 101 runs north to south through the City, connecting coastal communities along the entire west coast of the United States, while US 20 runs east to west through the City, connecting it to Corvallis, Interstate 5 and eventually Boston, Massachusetts 3,365 miles to the east. These roadways intersect in the downtown area forming one of the most complex intersections in the City. These statewide highways serve as designated freight routes along all of US 20 and the northern portion of US 101, specifically the section north of US 20 which serves the primary commercial centers. Because these highways carry the highest levels of traffic in the city, they

present many great opportunities, but also bring many challenges. Each day these highways bring thousands of visitors and economic opportunities for the City, which includes a mix of large recreation vehicles or towing trailers often traverse narrow and busy sections of these streets through the City. These highways were designed and built in an era that focused on serving motor vehicle traffic, and they lag behind ODOT's current vision of a complete multimodal street facility. As a result, this creates conflicts with parked vehicles, and often leads to uncomfortable and difficult walking and biking conditions for residents and visitors along and across these highways.

Downtown

US 101 runs through Newport's downtown area and the historic heart of the City, spanning both sides of US 101 between US 20 and Yaquina Bay to the north and south, and Bayfront and Nye Beach neighborhoods to the east and west. The central city is an area where many of the properties are underutilized or in economic distress with vacant storefronts and aging, poorly maintained buildings. The City established an urban renewal district in 2015 to generate funding to revitalize the area and is considering how the transportation system can be redefined to catalyze economic development and provide infrastructure needed to support additional density. The downtown area is home to many shopping, dining, cultural, and City service establishments and has emerged as a destination for residents and visitors alike. The increased energy draws many people who walk, ride bikes and take transit to and from nearby neighborhoods and along and across streets throughout downtown. Many more people drive vehicles and park within the area, and then walk or bike. Streets will need to be repurposed and reimagined to complement the street side activity, support desired economic development and balance the expected uptick in travel among all travel modes.

Yaquina Bay Bridge

Just to the south of Newport's downtown area, is Yaquina Bay and the iconic Yaquina Bay Bridge. Here the structure serves US 101 and spans 3,223 feet across Yaquina Bay. It opened in 1936 and provides the only crossing of Yaquina Bay and connection to the South Beach area of the City and its major employment and recreational destinations. With one travel lane in each direction, today the bridge is one of the top bottleneck locations in the City carrying nearly 17,000 motor vehicles per day during the summer and 14,000 per day during an average weekday. With narrow roadway-adjacent walkways and no separated bicycle facilities, the crossing is often uncomfortable and challenging for pedestrians and bicyclists.

In 2013, ODOT placed weight limit restrictions on this bridge considering the degraded maintenance conditions of the structure, particularly as it relates to seismic events. This weight limitation was intended to prolong the effective service life of the bridge before major reconstruction would be required. The current estimate for replacing the bridge is $200 million. Given the uncertainty of the bridge's viability long-term, the Newport City Council requested a statement from ODOT regarding their plans for this facility. In a letter dated February 4, 2021, the ODOT Director responded and indicated that the Yaquina Bay Bridge is on their Seismic Resilience Plan, and a specific date for funding major construction is uncertain at this time. However, the letter did also indicate that based on their understanding to date, retaining the bridge essentially in

its current location would be the preferred option to minimize environmental, engineering and community impacts.

Nye Beach

Nye Beach was named for John Nye who claimed a 160-acre parcel in 1866, In the 1880's the property was purchased by Sam Irvin, and in the 1890's the "summer people" began coming to Newport Beach in large numbers. They came by train to Yaquina Bay, where the railroad ended, then by ferry boat to the Bayfront, and finally by the boardwalk built in 1891 to connect the Bayfront with Nye Beach.

Today, Nye Beach has become a mixed-use neighborhood with direct beach access anchored by Performing Arts and Visual Art Centers. Commercial development is concentrated along Beach Drive and Coast Street, both of which include streetscape enhancements that encourage a dense pedestrian friendly atmosphere. This area includes a mix of retail, dining, lodging, professional services, galleries, single family homes, condominiums, long term and short-term rentals.

Bayfront

A working waterfront with a mix of tourist-oriented retail, restaurants, fish processing facilities (e.g. Pacific Seafood), and infrastructure to support the City's commercial fishing fleet. The Port of Newport is a major property owner, and a boardwalk and fishing piers provide public access to the bay. The area is terrain constrained, with steep slopes rising up from commercial sites situated along Bay Boulevard.

South Beach

Nestled on the south side of the Yaquina Bay Bridge, Newport's South Beach provides a mix of regional institutions, recreational facilities, neighborhoods, and retail businesses, including the popular Oregon Coast Aquarium, Hatfield Marine Science Center, OMSI's Camp Gray, Oregon Coast Community College, Newport Municipal Airport, and the Port of Newport's South Beach Marina and RV Park. The City largest residential planned development is also located in South Beach. Known as "Wilder" the community is in its initial phase of development.

Natural Hazards

As an Oregon coastal city, Newport is at risk to a variety of natural hazards that should be considered in developing a Transportation System Plan to reduce risks to public health, facilitate emergency evacuation and prolong the serviceable life cycle of transportation infrastructure.

The first category of hazard is the tsunami events that follow earthquakes. The impacts on the Oregon coastline for a range of potential major earthquake events has been studied extensively by Oregon Department of Geology and Mineral Industries (DOGAMI), which is the best source of information for identifying areas that may be subject to tsunami inundation. The City and State have taken actions to prepare for these events, including developing emergency response and evacuation routes, and designating evacuation assembly areas. Establishing resilient transportation facilities and bridges along these routes is a critical element to facilitate the movement of people

during these emergency situations. The tsunami inundation and assembly areas in Newport can be found in the Appendix, Technical Memo #5, Existing Conditions.

Landslides and bluff erosion also present significant challenges to maintaining a stable foundation for roads and structures. The soil composition in many beach areas require special design considerations to adequately treat storm drainage and runoff to mitigate against degrading soil conditions. These design treatments are commonly applied in designated areas such as Agate Beach, which has experience chronic bluff erosion in recent years.

PURPOSE OF THE TSP

The TSP is a long-range plan to guide future transportation investments for the next 20 years and beyond within the Urban Growth Boundary (UGB). It is a key resource for implementing transportation system improvements that address current deficiencies and will also serve expected local and regional growth, and ensure that they align with the community's goals, objectives, and vision for the future. This TSP was developed through community and stakeholder input and is based on the transportation system's needs, opportunities, and anticipated available funding. The requirements of a TSP are summarized in Figure 5.

FIGURE 5: REQUIREMENTS OF A TRANSPORTATION SYSTEM PLAN

REQUIREMENTS OF A TSP

A TSP is required by the State of Oregon Transportation Planning Rule (TPR). Oregon Administrative Rule 660-012-0015 defines the primary elements of a TSP. The TPR requires that a city TSP includes the following components:

1. Comprehensive understanding of the existing multimodal transportation system that serves the city and how well that system performs its expected function today
2. Reasonable basis for estimating how the city and the surrounding region might grow in its population and employment over the next 20 or more years
3. Evaluation of how the expected growth could change system performance
4. Goals, policies and transportation system improvements that address community multimodal transportation needs
5. Understanding of the on-going funding required to build and maintain the transportation system as the city grows

In compliance with State requirements, the City of Newport updated their 2017 TSP. This latest update provides a plan for the City to support the transportation needs from land use growth within the UGB through the 2040 planning horizon. The City's UGB is shown earlier in Figure 1. The UGB is a land use planning line to control urban expansion and promote the efficient use of land, public facilities, and services. Land inside the UGB supports urban services such as roads, water and sewer systems, parks, schools and fire and police protection. This boundary also supports 20-years' worth of population and employment growth, of which cities must plan for urban services.

The TSP is the City's tool for planning transportation infrastructure for all modes within the UGB. This TSP will be used by the City to make strategic decisions about transportation system investments and will be instrumental in supporting grant applications to fund future projects, and ensuring projects are built in coordination with land use actions and future development.

SETTING DIRECTION FOR THE PLAN

A transportation vision, and set of goals, objectives, and evaluation criteria (see Figure 6) were used to guide the project team in the development, evaluation, and prioritization of solutions that best fit the community and provided the basis for policies to support Plan implementation. They were established with guidance from the Newport City Council and Planning Commission, Project Advisory Committee (PAC) and general public.

Collectively, the transportation-related goals, objectives, and evaluation criteria describe what the community wants the transportation system to do in the future, as summarized by a vision statement. A vision statement generally consists of an imaginative description of the desired condition in the future. It is important that the vision statement for transportation align with the community's core values.

Goals and objectives create manageable stepping stones through which the broad vision statement can be achieved. Goals are the first step down from the broader vision. They are broad statements that should focus on outcomes, describing a desired end state. Goals should be challenging, but not unreasonable. Each goal must be supported by more finite objectives. In contrast to goals, objectives should be specific and measurable. Where feasible, providing a targeted time period helps with objective prioritization and achievement. When developing objectives, it is helpful to identify key issues or concerns that are related to the attainment of the goal.

The solutions recommended through the TSP must be consistent with the goals and objectives. To accomplish this, evaluation criteria based on the goals and objectives were developed. For the Newport TSP, they were used to inform the selection and prioritization of projects and policies for the plan by describing how well they support goal areas.

FIGURE 6: DIRECTION FOR THE PLAN

VISION FOR THE PLAN

VISION STATEMENT

Travel to and through Newport is safe and efficient, with convenient options available for everyone. Investments in the transportation system are made in a cost-effective manner and respect the City's resources. The system supports local business activity, and all streets, including US 101 and US 20, complement a vibrant streetscape environment where people stop and visit and can travel by all modes safely and comfortably.

GOAL 1 **SAFETY**

Improve the safety of all users of the system for all modes of travel.

Objectives:

- Reduce the frequency of crashes and strive to eliminate crashes resulting in serious injuries and fatalities.
- Proactively improve areas where crash risk factors are present.
- Improve the safety of east-west travel across US 101.
- Improve the safety of north-south travel across US 20.
- Apply a comprehensive approach to improving transportation safety that involves the five E's (engineering, education, enforcement, emergency medical services, and evaluation).

GOAL 2 **MOBILITY AND ACCESSIBILITY**

Promote efficient travel that provides access to goods, services, and employment to meet the daily needs of all users, as well as to local and regional major activity centers.

Objectives:

- Support expansions of the local and regional transit network and service.
- Support improvements that enhance mobility of US 101 and US 20.
- Manage congestion according to current mobility standards.
- Support transportation options and ease of use for people of all ages and abilities.
- Ensure safe, direct, and welcoming routes to provide access to schools, parks, and other activity centers for all members of the community, including visitors, children, people with disabilities, older adults, and people with limited means.
- Provide an interconnected network of streets to allow for efficient travel.

GOAL 3 **ACTIVE TRANSPORTATION**

Complete safe, convenient and comfortable networks of facilities that make walking and biking an attractive choice by people of all ages and abilities.

Objectives:

- Continuously improve existing transportation facilities to meet applicable City of Newport and Americans with Disabilities Act (ADA) standards.
- Provide walking facilities that are physically separated from auto traffic on all arterials and collectors, and on streets and paths linking key destinations such as employment centers, schools, shopping, and transit routes.
- Provide low-cost improvements to enhance walking and biking on all arterials and collectors, and on streets and paths linking key destinations such as employment centers, schools, shopping, and transit routes.
- Provide safe street crossing opportunities on high-volume and/or high-speed streets.
- Provide walking access to transit routes and major activity centers in the City.
- Work to close gaps in the existing sidewalk network.
- Provide biking facilities that are comfortable, convenient, safe and attractive for users of all ages and abilities on or near all arterials and collectors, and streets and paths linking key destinations such as employment centers, schools, shopping, and transit routes.
- Provide biking access to transit routes, major activity centers in the City, and regional destinations and recreational routes.

GOAL 4 **GROW THE ECONOMY**

Develop a transportation system that facilitates economic activity and draws business to the area.

Objectives:

- Support improvements that make the City a safe and comfortable place to explore on foot.
- Manage congestion along freight routes according to current mobility standards.
- Provide safe, direct, and welcoming routes between major tourist destinations in Newport.

GOAL 5 **ENVIRONMENT**

Minimize environmental impacts on natural resources and encourage lower-polluting transportation alternatives.

Objectives:

- Support strategies that encourage a reduction in trips made by single-occupant vehicles.
- Minimize negative impacts to natural resources and scenic areas, and restore or enhance, where feasible.
- Support facility design and construction practices that have reduced impacts on the environment.

GOAL 6 **SUPPORT HEALTHY LIVING**

Support options for exercise and healthy lifestyles to enhance the quality of life.

Objectives:

- Develop a connected network of attractive walking and biking facilities, including off-street trails, which includes recreational routes as well as access to employment, schools, shopping, and transit routes.
- Provide active transportation connections between neighborhoods and parks/open spaces.
- Provide for multi-modal circulation on-site and externally to adjacent land uses and existing and planned multi-modal facilities.

GOAL 7 **PREPARE FOR CHANGE**

Ensure that the choices being made today make sense at a time when Newport is growing, and the transportation industry is rapidly changing.

Objectives:

- Anticipate the impacts and needs of connected and automated vehicles.
- Seek to supplement traditional transportation options with more emphasis given to walking, biking, and transit and consideration for new alternatives such as car sharing, bike sharing, driverless vehicles, ride sourcing, and micro-mobility.
- Explore opportunities to partner with state, regional, and private entities to provide innovative travel options.

GOAL 8 **FISCAL RESPONSIBILITY**

Sustain an economically viable transportation system.

Objectives:

- Improve transportation system reliance to seismic and tsunami hazards, extreme weather events, and other natural hazards.
- Identify and develop diverse and stable funding sources to implement transportation projects in a timely fashion and ensure sustained funding for transportation projects and maintenance.
- Preserve and maintain existing transportation facilities to extend their useful life.
- Seek to improve the efficiency of existing transportation facilities before adding capacity.
- Ensure that development within Newport is consistent with, and contributes to, the City's planned transportation system.

GOAL 9 **WORK WITH REGIONAL PARTNERS**

Partner with other jurisdictions to plan and fund projects that better connect Newport with the region.

Objectives:

- Coordinate projects, policy issues, and development actions with all affected government agencies in the area.
- Build support with regional partners for the improvement of regional connections.

SUPPLEMENTAL STRATEGIES

In addition to the goals and objectives outlined above, a set of supplemental strategies and guidelines were developed to address specific issues of concern within the Commercial Core and the Agate Beach areas of the City. The Commercial Core area is also commonly referred to as the Downtown. The strategies are extensions of the citywide goals and objectives to provide adequate depth and context for addressing the unique issues within these areas.

Commercial Core

- Consider improvements that enhance the safety of US 101 and US 20 and their intersections through the Commercial Core.
- Explore options for alternative highway routing through the Commercial Core.
- Consider options to meet the future capacity needs of the Yaquina Bay Bridge.
- Explore options for improved pedestrian and bicycle facilities across Yaquina Bay.
- Explore options for safe crossing opportunities of US 101 and US 20 in the Commercial Core.
- Consider streetscape improvements that define and enhance the character of the Commercial Core and serve as attractive gateways.
- Support the economic vitality of businesses in the Commercial Core by making multi-modal access safer, more convenient and more attractive.

Agate Beach

- Provide options for local street sections that consider the stormwater management needs of the Agate Beach area.
- Plan for local street connections adjacent to existing coastal routes given future erosion concerns.
- Evaluate safe crossing opportunities of US 101 in Agate Beach.
- Upgrade vehicle access onto US 101 to correct substandard conditions.
- Explore options to provide pedestrian and bicycle facilities on US 101 in Agate Beach.
- Explore options for a connection for pedestrians and bicyclists in Agate Beach to areas further south in the City.

PERFORMANCE BASED PLANNING PROCESS

The TSP utilizes a performance-based planning process. The community vision is distilled into the measurable goals and supporting objectives. These goals and objectives were used to identify evaluation criteria to help evaluate potential projects and to measure long-term alignment between Newport's transportation system and the community's vision of this system. The plan process is illustrated below in Figure 7, along with the key questions that were considered during three development stages of the TSP.

FIGURE 7: PERFORMANCE BASED PLANNING PROCESS

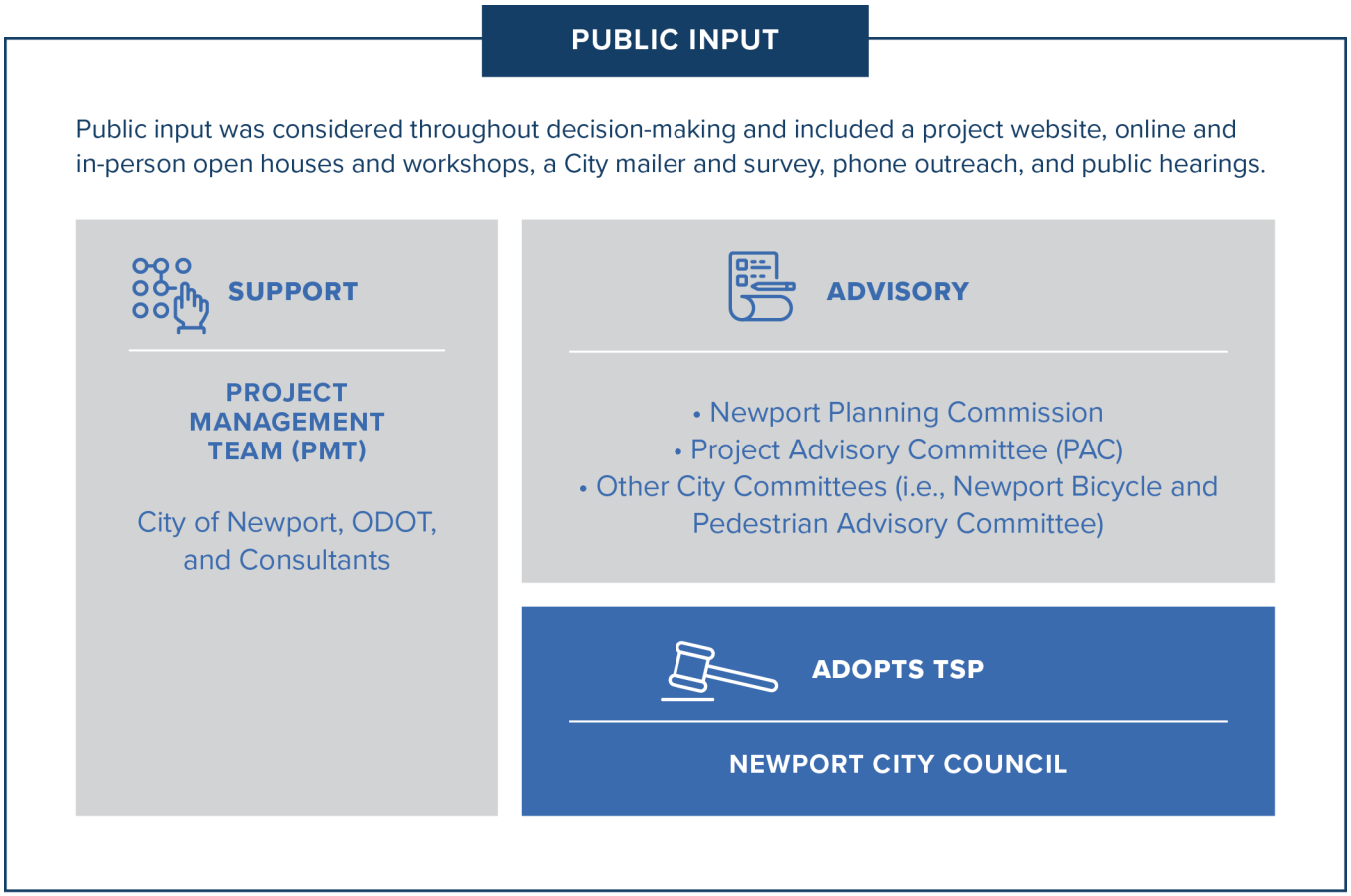
DECISION MAKING STRUCTURE

The decision-making structure for this TSP was developed to establish clear roles and responsibilities throughout the project. The decision-making structure (Figure 8) established a framework for broad-based community engagement for the project.

As the TSP was developed, the Project Management Team (PMT) worked with a Project Advisory Committee (PAC) that included local committee, neighborhood, and business representatives, emergency service providers, and agency staff members from the City of Newport, Lincoln County, and the Oregon Department of Transportation. The PAC was formed to provide community-based recommendations, and informed and guided the plan by reviewing draft deliverables, providing insight into community perspectives, commenting on technical and regulatory issues, and providing recommendations for the TSP.

The City Council and Planning Commission for Newport were all briefed on the development of this TSP throughout the process. The City Council made all final decisions pertaining to this TSP. The PMT made recommendations to the City Council based on technical analysis and community input.

FIGURE 8: NEWPORT TSP ROLES AND RESPONSIBILITIES



PUBLIC AND STAKEHOLDER ENGAGEMENT

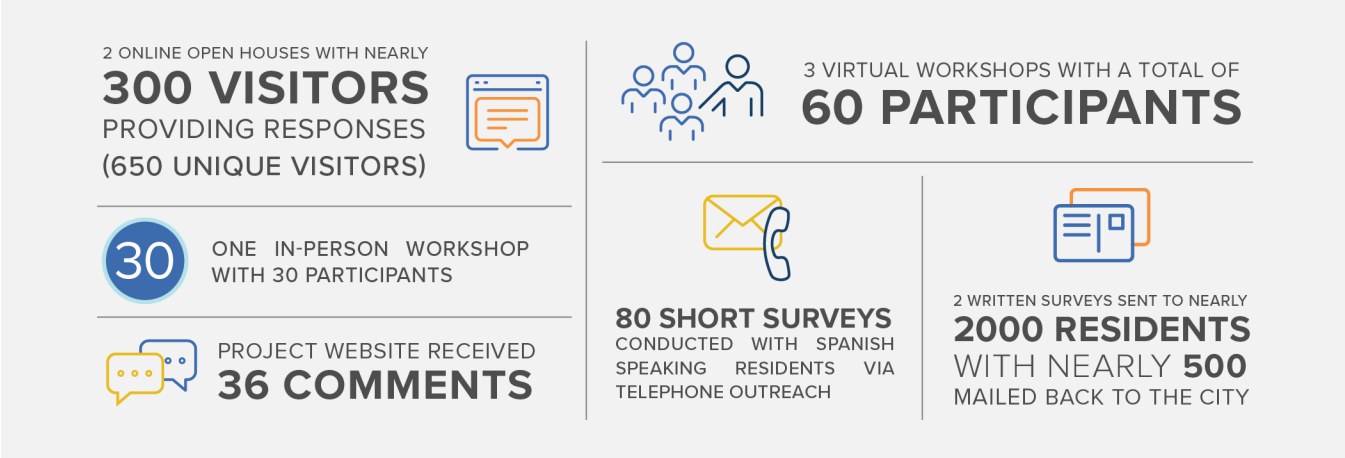
The strategy used to guide stakeholder and public involvement throughout the TSP update reflects the commitments of the City of Newport and the Oregon Department of Transportation (ODOT) to carry out public outreach that provided community members with the opportunity to weigh in on local transportation concerns and to provide input on the future of transportation within the City and UGB.

Public outreach was conducted between November 2020 and August 2021 to share information about the TSP project and community members, stakeholders, and other interested parties were invited to share their ideas and feedback about how people currently get around, what can be improved, and to solicit feedback on transportation projects. Feedback received through this outreach helped the City and its consultants address planned growth and the evolving transportation needs of residents. Feedback was also used to develop a list of transportation projects to be included in this TSP.

The Public and Stakeholder Involvement Strategy for the TSP (included in the Appendix) considered the demographic makeup of the area to inform outreach activities. Considering the COVID-19 pandemic, the project team adapted to provide several engagement opportunities

(virtual, in-person, by phone and by mail) to enable community members to safely participate and provide meaningful input. Approximately 970 people were engaged through a variety of outreach opportunities. These opportunities are summarized in Figure 9. These engagement opportunities were promoted through social media posts, updates on the City and project websites, postcards mailed to residents within the City, emails sent to interested parties, stakeholders, and community organizations, and press releases. In addition, a virtual workshop was held with Spanish-speaking community members.

FIGURE 9: PUBLIC AND STAKEHOLDER ENGAGEMENT FACTS



SUMMARY OF COMMUNITY FEEDBACK

Overall, the respondents wanted to see improvements to Newport's transportation system that will benefit all residents and visitors, with a particular focus on the safety and circulation for the walking, biking and transit modes of travel. There was also a strong call for linking the transportation improvements to the form of the city's buildings and land use and redevelopment opportunities. A complete summary of the outreach efforts can be found in the Appendix, Newport TSP Outreach Summary.

Common themes:

- Pedestrian and bicyclist safety throughout the City
- Increased bus/transit/shuttle options
- Interest in improving traffic flow and reducing congestion, for through travelers and local users
- Parking improvements, especially in the downtown area
- Traffic speeding enforcement
- Preserve/rebuild the Yaquina Bay Bridge in the same location
- Strong support for emerging technology such as electric vehicle (EV) charging stations, parking solutions and solar power

AUGUST 2021 WORKSHOP WHERE PEOPLE COULD TALK TO STAFF AND PROVIDE INPUT ON PROJECTS

TECHNICAL DEVELOPMENT

Figure 10 illustrates the technical tasks involved in updating the TSP. These are categorized in three major stages: the first to understand system needs and constraints, the second to develop solutions, and the third to prepare and adopt the plan. Community input guided the TSP development through all stages.

LEARN & UNDERSTAND	ANALYZE & EVALUATE	RECOMMEND / ADOPT
• Introduce project to stakeholders. • Evaluate existing conditions and future growth trends. • Discuss community values and transportation goals. • Develop performance measures and evaluation. • Coordinate with state and regional plans.	• Determine future conditions. • Develop alternative solutions for all modes of travel. • Evaluate and refine draft solutions with the community.	• Identify preferred alternatives. • Develop draft plan for public review. • Hold public meetings with city boards, commissions and council. • City Council adopts TSP.

Chapter 3: Newport Today and Tomorrow

This chapter identifies the needs for the Newport transportation system. The needs reflect where the transportation system can better accommodate the desired activities of the community. Needs were determined based on a comprehensive multimodal existing conditions analysis and projecting future conditions through the planning horizon (2040) based on assumed growth in households and employment.

LAND USE AND TRANSPORTATION

Land use is a key component of transportation system planning. Where people live and where they go to work, shop, or access services has a big impact on how they get around and the demands they place on the transportation system.

Household and employment information is used as the basis for estimating future transportation activity in Newport. Figure 11, Figure 12, and Figure 13 summarize where household and Figure 14, Figure 15, and Figure 16 summarize where employment growth is expected through 2040 (see Technical Memorandum #6 in the Appendix for more information). High housing growth is concentrated around Newport's urban fringe including in northern Newport along US 101, Big Creek Park, Newport Middle School, in eastern Newport between US 20 and Yaquina Bay Road, and near the Oregon Coast Community College.

High employment growth is concentrated near Avery Street, the Lincoln County Fairgrounds, the Port of Newport, the South Beach area, Oregon Coast Community College, the Newport Airport, and the Holiday Beach area. Moderate employment growth is also expected along US 101 and in Newport's downtown area.

FIGURE 11: NEWPORT HOUSEHOLD GROWTH (NORTH)

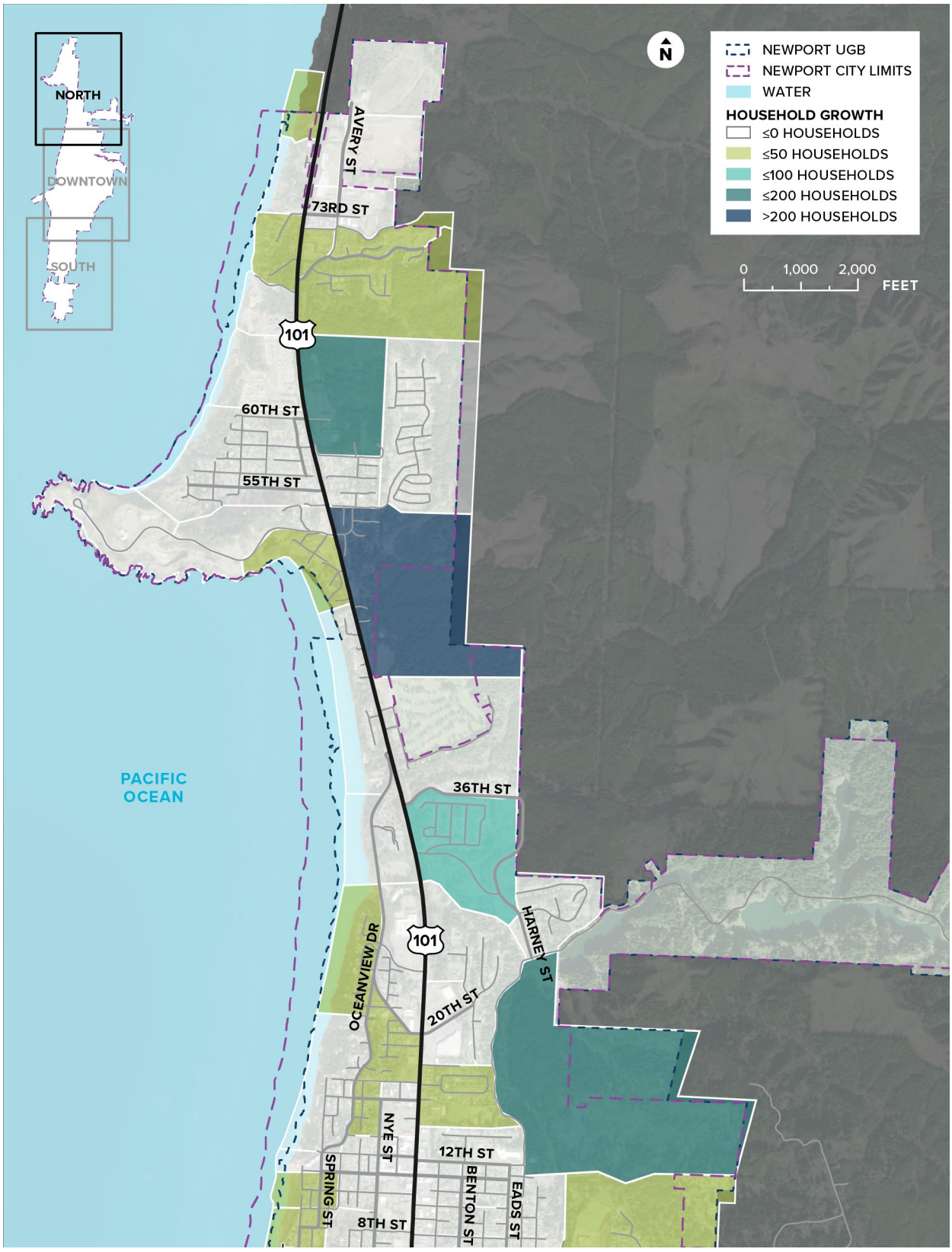


FIGURE 12: NEWPORT HOUSEHOLD GROWTH (DOWNTOWN)

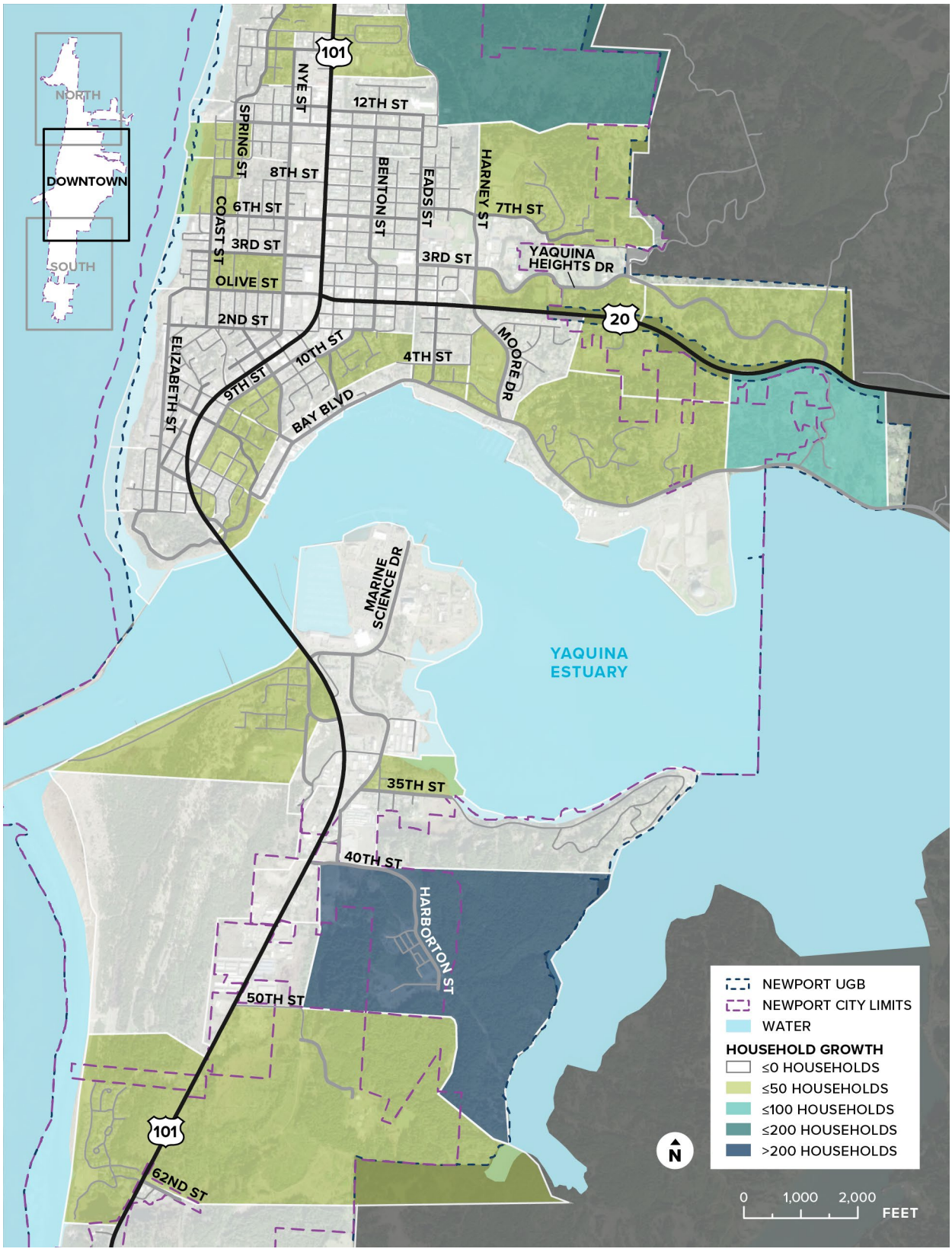


FIGURE 13: NEWPORT HOUSEHOLD GROWTH (SOUTH)

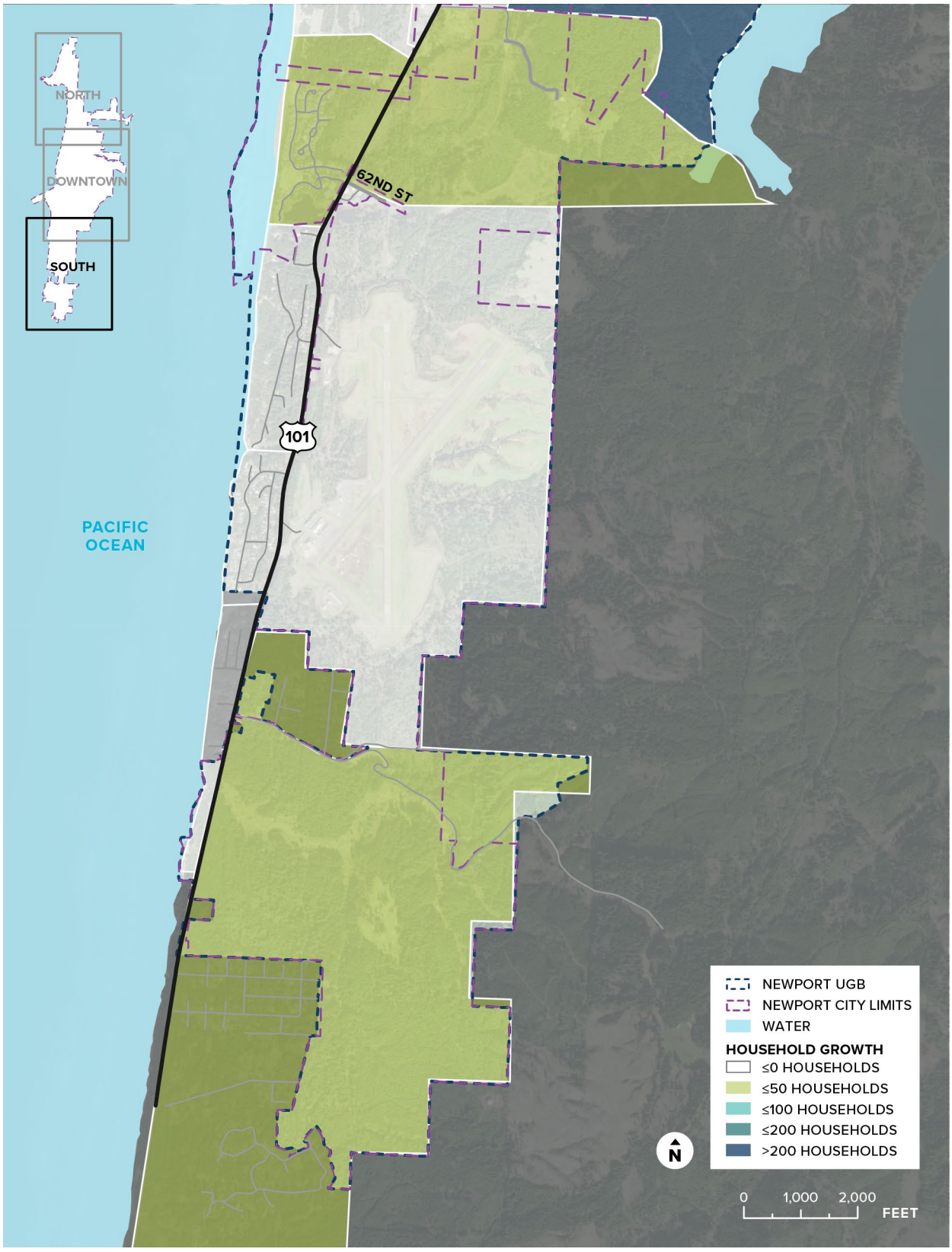


FIGURE 14: NEWPORT EMPLOYMENT GROWTH (NORTH)

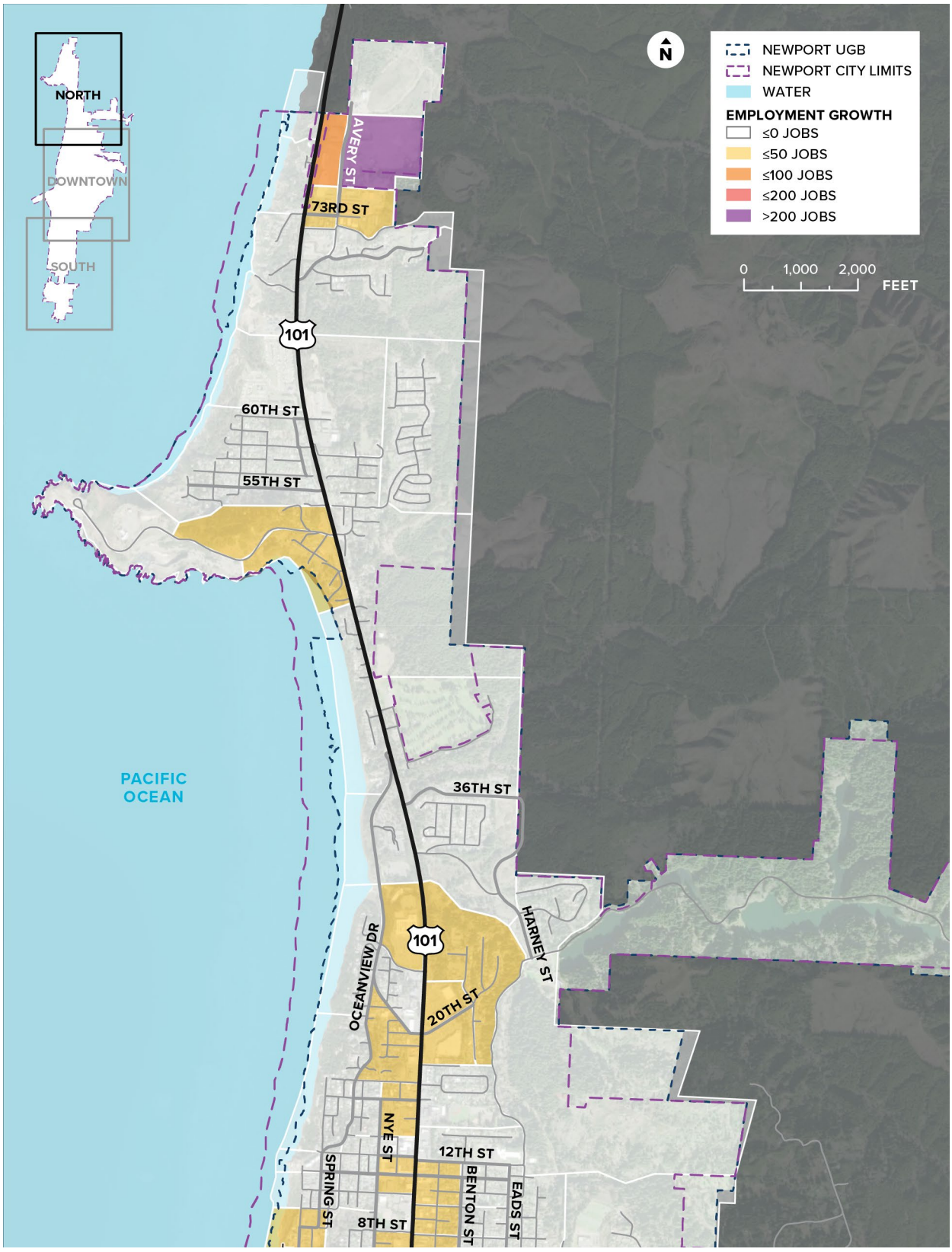


FIGURE 15: NEWPORT EMPLOYMENT GROWTH (DOWNTOWN)

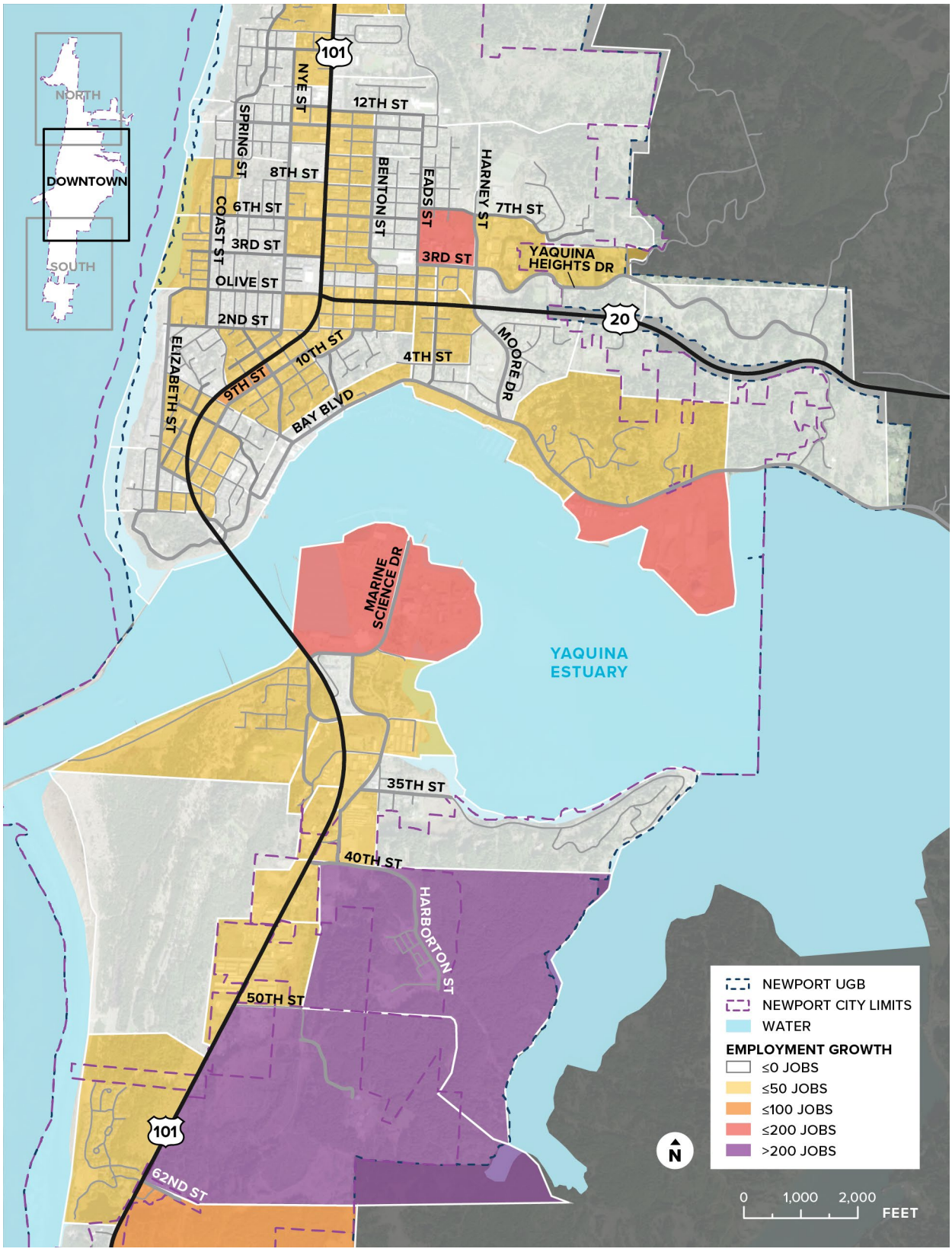
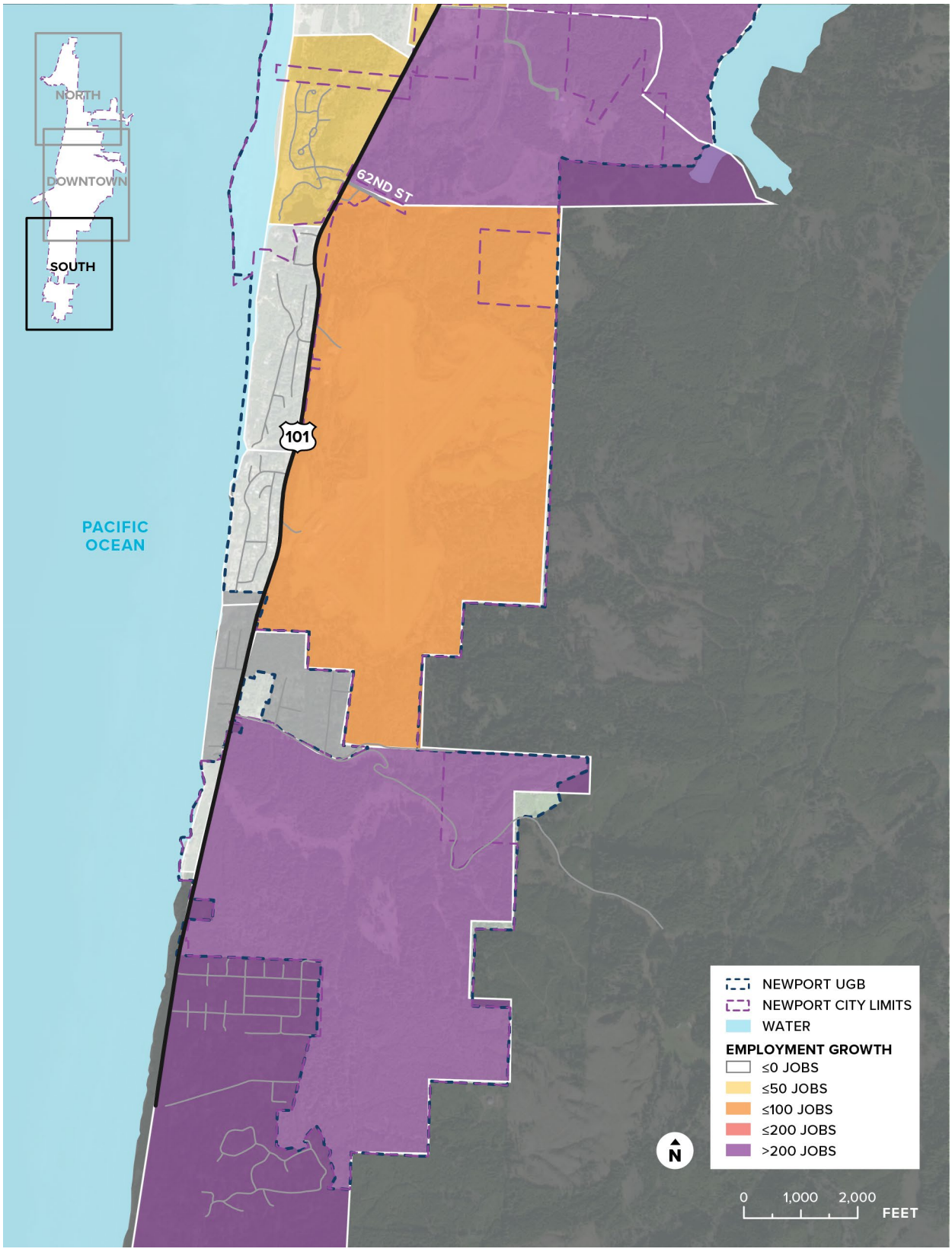


FIGURE 16: NEWPORT EMPLOYMENT GROWTH (SOUTH)

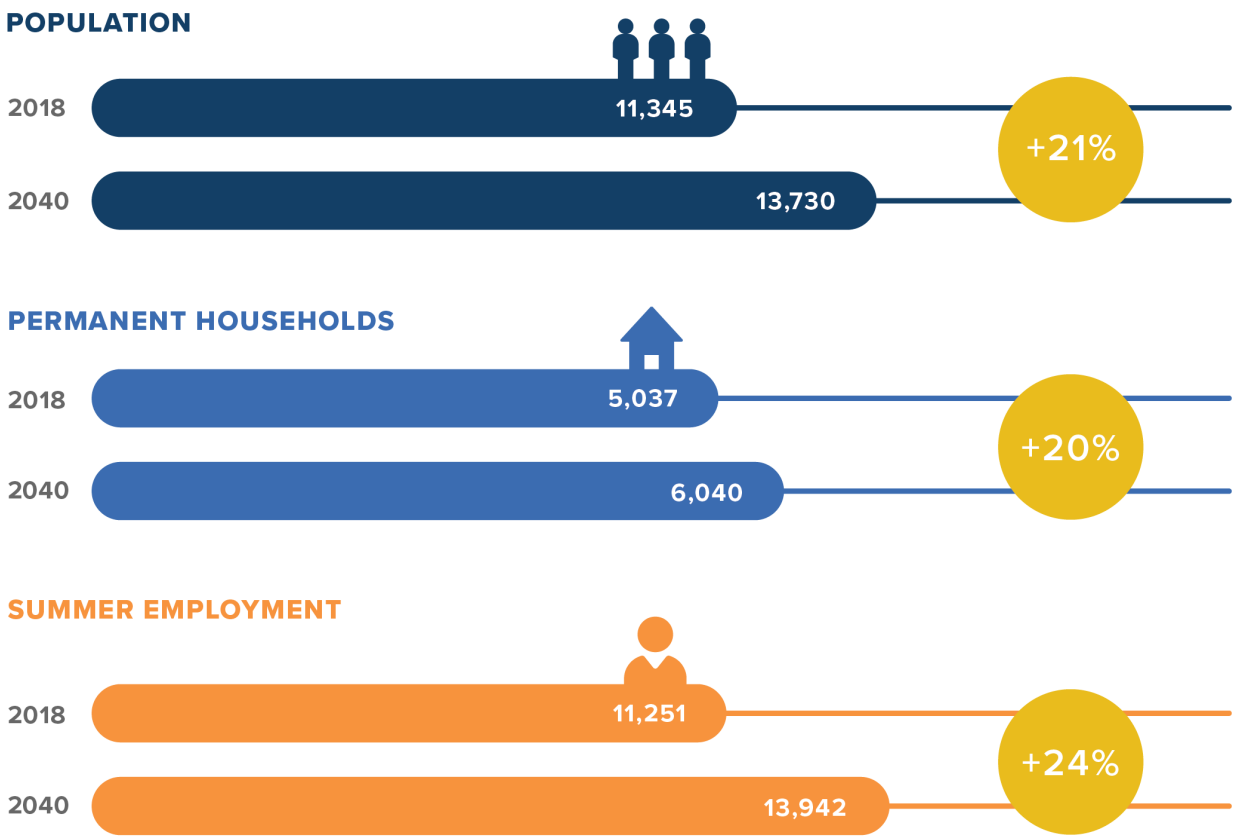


POPULATION, HOUSEHOLD AND EMPLOYMENT GROWTH

As growth continues to the year 2040, the demands on the City's transportation system will be influenced by changes in population, housing, and employment. These changes in travel demands will require better ways to manage the system, more choices for getting around, and targeted improvements to make the system safer and more efficient.

As shown in Figure 17, Newport is expected to add about 2,385 more people[1] living here by 2040. For travel forecasting purposes, the population and employment during the average summer weekday is used, which are higher levels than the off-season. The City population of 10,125 rises to 11,345 during that period. By 2040 that summertime population is expected to be 13,730. This includes an expected 1,003 new households by 2040, for a total 6,040. Newport's current summertime average employment of 11,251 is estimated to increase to 13,942, with 2,691 more jobs in the UGB by 2040 (see Figure 17).

FIGURE 17: NEWPORT POPULATION, HOUSEHOLD AND EMPLOYMENT GROWTH TRENDS



SOURCE: NEWPORT TRAVEL DEMAND MODEL

[1] The 2017 Portland State University population forecast for Newport including its Urban Growth Boundary expansion was 2,385 more people. The 2021 PSU report showed a lower growth total of 547.

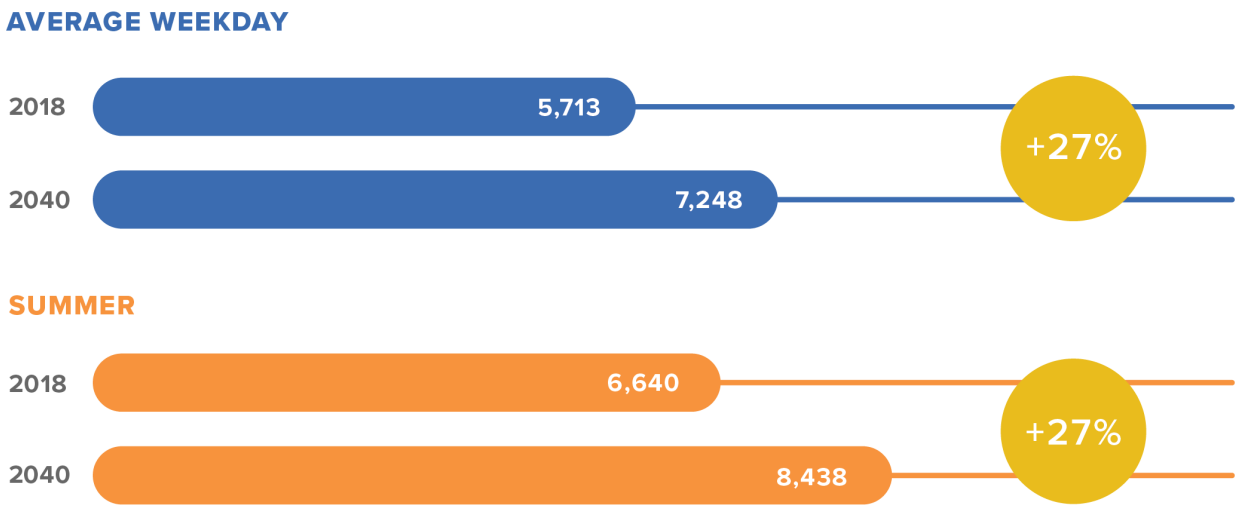
TRAVEL DEMANDS

The number of people who choose to walk, bike, ride transit or drive and the distances they travel is important for assessing how well existing transportation facilities serve the needs of users. Available data on travel mode choice, travel demand and trip length are used to better understand travel behavior in the community and inform the needs analysis for the transportation system.

Travel demands levels are influenced by the local housing and employment, seasonal visitors, and the amount of through traffic on the highway. Each of these components were considered in forecasting how current conditions in Newport will change by 2040. The increase in the number of local households and employees in the Newport UGB increases the overall number of trips generated. Figure 18 summarizes the total p.m. peak hour motor vehicle trip ends for the Newport UGB for year 2018 and year 2040. The number of vehicle trips is expected to grow by approximately 27 percent over this period if the land develops according to the land use assumptions during both an average weekday and the summer.

Being on the Oregon Coast, Newport is also impacted by a significant number of visitors and other regional travel on US 20 and US 101. This regional recreation-based travel significantly increases traffic volumes on these facilities in the summer months when compared to an average weekday. As shown in Figure 18, this tourism and recreational activity adds approximately 900 p.m. peak hour motor vehicle trip ends today (i.e., 5,713 during an average weekday versus 6,640 during the summer) and is expected to add 1,200 p.m. peak hour motor vehicle trip ends by 2040 within the Newport UGB, an increase of over 16 percent (i.e., 7,248 during an average weekday versus 8,438 during the summer).

FIGURE 18: NEWPORT VEHICLE TRIP ENDS (PM PEAK HOUR)



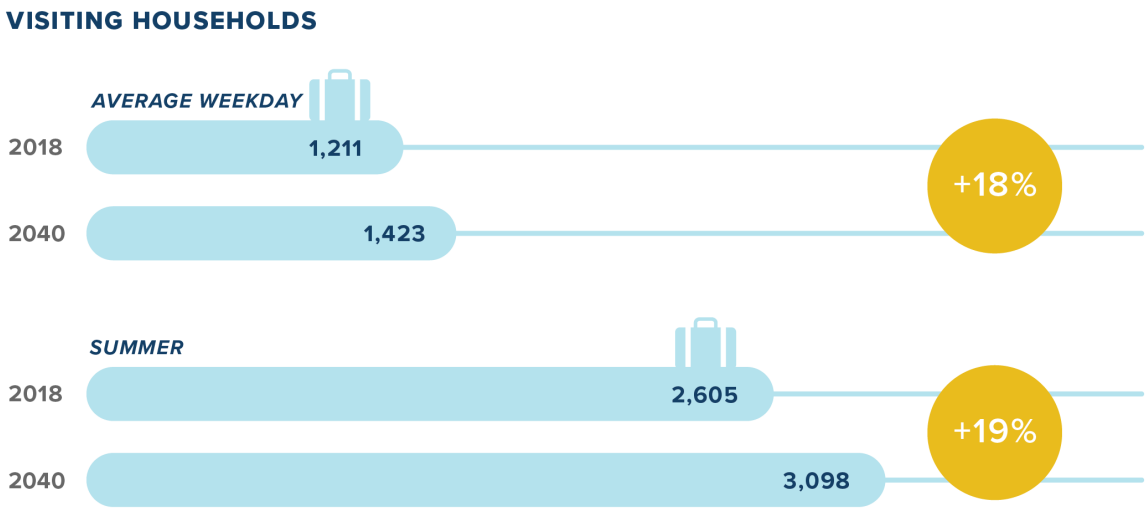
SOURCE: NEWPORT TRAVEL DEMAND MODEL

VISITING HOUSEHOLD TRIPS

Located within a two-hour drive from Albany, Corvallis, Eugene and Salem and a 3-hour drive from Portland, Newport is a desirable choice for getaways. Visitors arrive via US 20 and US 101 and often stay for extended periods, traveling to key attractions throughout the City. During the peak summer travel periods, more than 25,000 people may be in Newport at any time and motor vehicle volumes increase by as much as 45 percent on area roadways[2] compared to the winter months. These visitors are drawn to key lodging areas of the City including downtown, Nye Beach, Bayfront, South Beach and along US 101. Walking and biking is a popular travel choice for visitors among hotels or vacation rentals and the many destinations in the City, with most of the key lodging areas within a 30-minute walk or 10-minute bike ride north of Yaquina Bay. However, narrow sidewalks and lack of bike facilities on the Yaquina Bay Bridge creates a significant barrier for visitors to travel by these modes to tourist destinations located on the south side of Yaquina Bay.

Due to the importance of seasonal tourism on the Oregon Coast, the number of visiting households was also estimated. These visiting households stay in the City at area hotels and other short-term rentals. As shown in Figure 19, Newport is expected to accommodate 212 additional visiting households during an average weekday through 2040, from 1,211 today to 1,423 by 2040, an increase of 18 percent. As tourism increases during the summer, so does the number of visiting households. Today, the City accommodates 2,605 visiting households during the summer, or more than double the number during the average weekday. By 2040, Newport is expected to accommodate 493 additional visiting households during the summer, for a total of 3,098, an increase of 19 percent from today.

FIGURE 19: NEWPORT VISITING HOUSEHOLDS



SOURCE: NEWPORT TRAVEL DEMAND MODEL

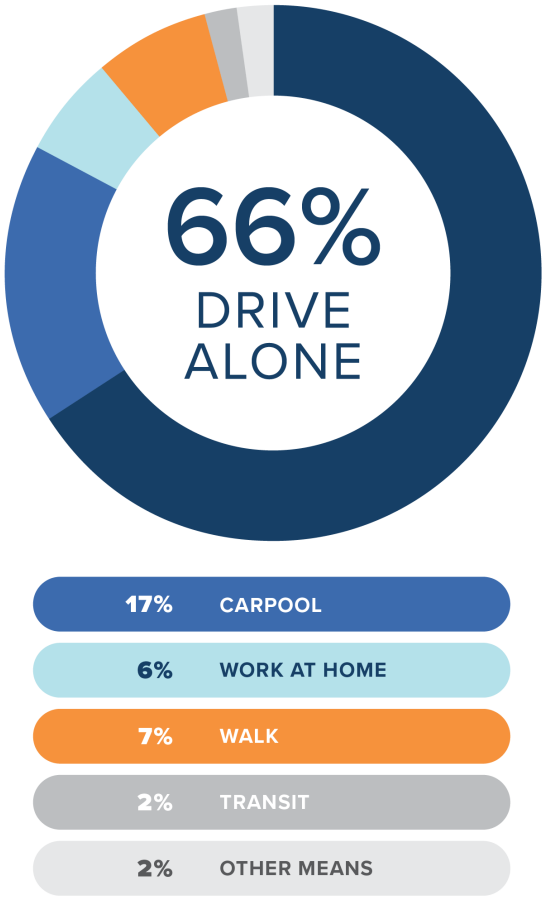
[2] Between January and August, average daily volumes on US 101 can vary by up to 45 percent of the annual average. In January, volumes are 20 percent below the annual average, and in August they are 25 percent above it.

COMMUTER TRIPS

Much of the traffic in Newport, especially during the more congested weekday peak periods, is related to employment. Approximately 70 percent of existing jobs in Newport are filled by people who live in another City[3]. Residents of Newport also contribute to travel between cities, with about 54 percent of employed residents commuting to employment locations outside of the City. Workers in Newport typically commute by single-occupant motor vehicle (about 66 percent), with about 7 percent of residents walking to work, and approximately 2 percent using transit (see Figure 20).

About 6 percent of employed residents in Newport worked from home pre-COVID, and that figure likely increased due to COVID-19. It is not yet known how many of those workers will continue to telework after the threat of COVID-19 passes, but it seems likely that a higher percentage of workers will continue teleworking, at least part time. Any increase in the remote work share will change the demand on streets. It is possible that we may see a decrease in the share of the workers that need to travel during the morning and evening peak commute times and may see an increase during off-peak times.

FIGURE 20: NEWPORT COMMUTER MODE SHARE



Source: US Census Bureau, 2015-2019 American Community Survey

COMMERCIAL ACTIVITY TRIPS

Area businesses also create demands on the transportation system. This includes customers purchasing goods and trucks servicing these businesses. Key areas of the City with commercial, retail or industry related activity includes downtown Newport, Port of Newport, historic Bayfront, Nye Beach, South Beach, and the US 101 corridor. Residents within Newport's historic downtown core are typically within a five-minute drive, twenty-minute walk or seven-minute bike ride of these areas. Recent residential developments north of Agate Beach or in South Beach typically have limited neighborhood commercial opportunities and are located farther from Newport's historic downtown core which increases trip lengths and limits mode choices for residents of these areas. Trucks servicing these areas typically travel from major cities outside Newport and can travel over 60 miles from major distribution centers in the Willamette Valley and the I-5 corridor before using US 20 or US 101. Within Newport, freight traffic is common on US 101, US 20, Moore Drive, Bay Boulevard, and 73rd Street to serve the fishing industry, Port of Newport and businesses throughout Newport.

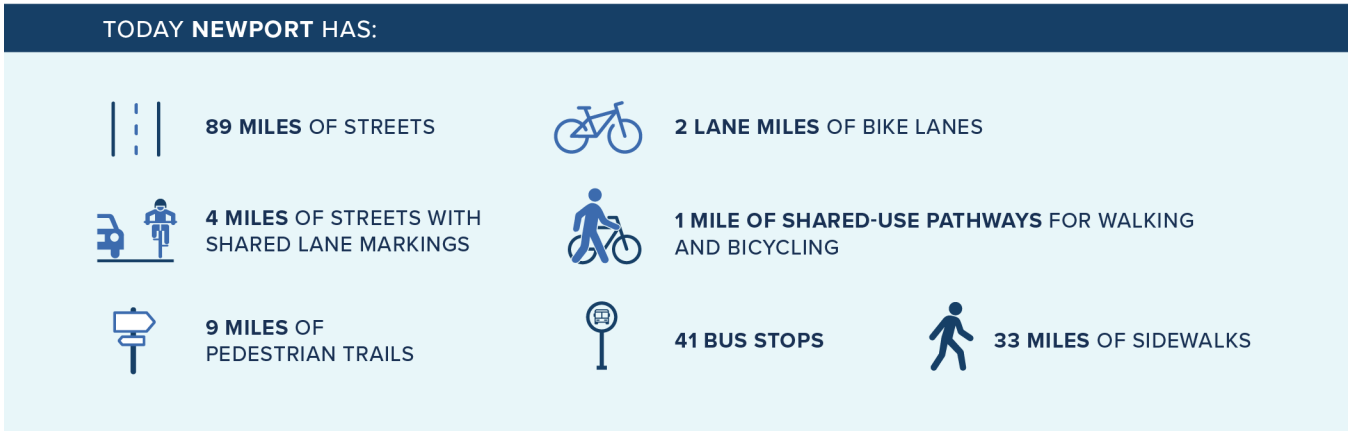
[3] US Census Bureau, OnTheMap. Home/Work Distance/Direction Analysis, 2018.

TRANSPORTATION SYSTEM FACTS

To address changing transportation needs within the UGB though 2040, the existing and future travel conditions were reviewed. The transportation system review documented the existing pedestrian, bicycle, transit, and motor vehicle infrastructure. It also identified shortfalls and limitations into how people can travel within the City (such as lack of bike lanes or sidewalks).

Figure 21 provides a summary of some of the existing transportation facilities in the City, with more details provided in the following sections. A complete summary of existing and future transportation conditions and needs can be found in Technical Memorandums #5 and #7 in the Appendix. Solutions for the transportation infrastructure that are determined to not maintain acceptable service levels for residents are identified in Chapter 6.

FIGURE 21: NEWPORT TRANSPORTATION SYSTEM FACTS



ROADWAY NETWORK

The existing transportation system in the UGB includes 89 miles of roadways. Two highways under State jurisdiction bisect the City, including US 101 and US 20. US 101 runs north-south through Newport, connecting coastal communities along the entire west coast of the United States, while US 20 runs east-west just north of the downtown area of the City, connecting it to Corvallis, Interstate 5 and eventually Boston, Massachusetts 3,365 miles to the east. These roadways intersect in the downtown area forming one of the most complex intersections in the City.

Key City streets that are adjacent to or intersect US 101 and US 20 include NE 73rd Street, NW 55th Street, Lighthouse/NE 52nd Street, NE 36th Street, NE Harney Street, SE Moore Drive, SE Bay Boulevard, SW Abalone Street, SE Marine Science Drive, SE Ferry Slip Road, 6th Street, SE 40th Street, Nye Street, Hurbert Street, Benton Street, and NW Oceanview Drive.

This TSP addresses vehicle speeds, vehicle flow, and safety for all users of streets in Newport. Traditionally, agencies have widened streets to respond to traffic congestion. But widening does not always work to reduce congestion in the long term. Widening is costly, has negative effects on adjacent properties, and makes the street even less safe and inviting for walking and biking. This TSP uses widening to add capacity as only the last option to respond to vehicle congestion issues. Instead of following traditionally accepted practices, this TSP emphasizes redesigning streets to slow vehicles and increase safety. The design of a street influences how a person drives more than the actual speed limit.

INTERSECTION OPERATIONS

Forecasted intersection operations were compared to currently adopted agency mobility targets to identify where significant congestion is likely to occur. Of the 20 study intersections, eight will not meet their respective mobility target during the 2040 design hour conditions. Nineteen of the study intersections met their mobility targets under existing conditions (2020); the intersection of US 101/US 20 is the only intersection that also exceeded its mobility target under existing PM peak hour conditions. All of the substandard intersections are on state highways and half are two-way stop control intersections. Increased traffic on US 101 will lead to excessive delay for left-turning traffic by 2040 at all unsignalized intersections, particularly during the summer peak.

Intersections that are expected to exceed mobility targets under the 2040 design hour conditions, include:

- US 101/73rd (stop controlled on side street)
- US 101/52nd (signalized intersection)
- US 101/Oceanview (stop controlled on side street)
- US 101/US 20 (signalized intersection)
- US 101/Angle (stop controlled on side street)
- US 101/Hurbert (signalized intersection)
- US 20/Benton (stop controlled on side street)
- US 20/Moore (signalized intersection)

Other Community Concerns

Additional intersection and roadway network concerns expressed by the community include congestion around NE Harney Street/SE Moore Drive due to school and County fairground traffic, limited access to the hospital from US 101, limited access and high delay travelling to and from residential neighborhoods whose only access is from US 101, irregular access alignments to US 101, such as near the Newport Theater and southbound vehicle speeds on US 101 approaching the Yaquina Bay Bridge as vehicles merge. In addition, several locations on US 101 were noted for challenges for pedestrians crossings, such as near NE 60th Street.

BRIDGES AND TUNNELS

There are 11 bridges and two tunnels within the Newport UGB. Nine of the bridges are along state highways (i.e., US 101 or US 20) and one is along a City roadway. The State Parks system also owns a pedestrian bridge and a pedestrian tunnel at Agate Beach State Park.

Three bridges are classified as structurally deficient with poor conditions, including:

- The bridge on US 101 over Big Creek, between NE 31st Street and NW 25th Street (maintained by ODOT)
- The Yaquina Bay Bridge (maintained by ODOT)
- The bridge on Big Creek Road over Big Creek, between NE Harney Street and NE 12th Street (maintained by the City of Newport)

Yaquina Bay Bridge

The Yaquina Bay Bridge is a key constraint for vehicles travelling north-south in Newport both today and in the future. Existing narrow travel lanes, lack of shoulders, and a steep grade all contribute to a lower carrying capacity compared to similar highway segments. Traffic volumes along the bridge (shown in Table 1) are forecasted to be around 20,000 during an average weekday, and around 22,000 during the summer, based on the projected local growth in the City, and growth in regional through traffic. This means that during both average weekday and summer conditions, the forecasted volumes are expected to exceed the capacity on the Yaquina Bay Bridge. As traffic volumes grow, this congestion could impact segments of US 101 approaching the Yaquina Bay Bridge or lead to additional congestion in off-peak hours without any mitigation.

TABLE 1: EXPECTED TRAFFIC VOLUMES ON THE YAQUINA BAY BRIDGE

SCENARIO	2018 AVERAGE DAILY TRAFFIC	2040 AVERAGE DAILY TRAFFIC	PERCENT GROWTH
AVERAGE WEEKDAY	14,200	19,800	39%
SUMMER	16,900	21,800	28%

Source: Technical Memorandum #7: Future Transportation Conditions and Needs, Table 3.

Like many coastal bridges, the Yaquina Bay Bridge is a designated historic structure. The ODOT Historic Bridge Preservation Plan details treatment options to extend the useful life of historic structures and maintain their original purpose. ODOT ensures that every reasonable effort is pursued to maintain transportation service for their historic bridges prior to other, more impactful decisions. The existing historic structural elements will be maintained to the maximum extent necessary, and any new elements must maintain the historical significance of the structure. Maintenance considerations could also include vehicle or load restrictions that limit traffic on historic bridges.

If in the future ODOT determines that the Yaquina Bay Bridge can no longer maintain its intended function, the bridge could be paired with a parallel crossing to lessen vehicle demands or converted to a new use. Only after these options are exhausted will ODOT consider a full closure of the bridge. All future decisions regarding the use of the Yaquina Bay Bridge will be coordinated with ODOT. This TSP recommends that the City coordinate with ODOT to prepare a Refinement Plan for the Yaquina Bay bridge area to further clarify the alignment, cost, and impacts associated with a future replacement bridge project.

PARKING

US 101 and US 20 serves thousands of vehicle trips each day bringing many visitors and economic opportunities for the City, which also means large recreation vehicles or towing trailers traversing narrow and busy sections through the downtown area. This leads to conflicts with parked vehicles along US 101 due to the narrow travel lanes. In addition, the community has expressed concerns

related to limited parking in tourist-oriented areas such as Nye Beach and the Bayfront, particularly during peak summer periods, and potential for parking spillover into the neighborhoods.

PEDESTRIAN NETWORK

Walking plays a key role in Newport's transportation network and planning for pedestrians helps the City provide a complete multimodal transportation system. It also supports healthy lifestyles and addresses a social equity issue ensuring that the young, the elderly, and those not financially able to afford motorized transport have access to goods, services, employment, and education.

In this plan, "walking" and "pedestrian" are terms that include people who walk independently or use canes, wheelchairs, other walking aids, or strollers. As noted earlier in this TSP, approximately seven percent of commuters in the City walk to work, with two percent utilizing public transportation, which often includes walking at the beginning or end of the trip. In addition to the work commute trips, walking trips are made to and from recreational areas, shopping areas, schools, or other activity generators. Continuous and direct sidewalk connections to all activity generators and along all streets, in addition to safe crossing opportunities along major roadways, are essential to encourage walking and transit use.

The existing pedestrian network in the Newport UGB is composed of 33 miles of sidewalks, nine miles of pedestrian trails and one mile of shared use paths. Curb ramps are available at about 80 percent of intersections along US 101 and US 20, but many of them are not compliant with the Americans with Disabilities Act. In addition, nearly 70 percent of streets lack a sidewalk on at least one side, including several segments of US 101 and US 20. Although there is generally good sidewalk coverage near downtown Newport, many of the residential areas of Newport were developed without sidewalks, and these sidewalk gaps will remain through 2040 without redevelopment or sidewalk infill projects as part of the TSPP.

PEDESTRIAN LEVEL OF TRAFFIC STRESS

The pedestrian level of traffic stress[4] (LTS) evaluation provides a metric to understand a multimodal user's perception of the safety and comfort of the transportation network. This method was used to understand key gaps and barriers to walking to be addressed through targeted improvements in this TSP. In addition to the LTS evaluation, consideration was given to acknowledge cases where traffic volumes were expected to be very low, such as under 500 vehicles daily on a local or shared street. Feedback from the community indicated that under such conditions, residents were comfortable walking within the roadway given that the chance of vehicle conflicts are remote.

The LTS evaluation generates a ranking (i.e., low, moderate, high, or extreme stress) of the relative safety and comfort of a segment or intersection for pedestrians based on roadway and

[4] Refer to Technical Memorandum #5: Existing Conditions, page 3 for a complete definition of the Level of Traffic Stress. The LTS scale ranges from LTS 1(Low) to LTS 4(Extreme).

intersection characteristics (e.g., land use context, number of lanes, travel speed and volume, intersection control, type and width of buffer, and the presence and condition of any bicycle or pedestrian facilities). The LTS rating scale recognizes that as vehicle speeds and volumes increase, enhanced pedestrian facilities are needed to maintain a system that is accessible for all users.

A pedestrian walking along roughly 25 percent of the analyzed streets (i.e., Arterial and Collector roadways) within the UGB will experience a low or moderate level of stress. This is generally representative of streets with low volumes and speeds where sidewalks are provided. An extreme level of stress is experienced along 60 percent of the analyzed streets, mainly those with no sidewalks or buffers and the highest speeds and traffic volumes. This includes most of US 101 and US 20 through the UGB, streets that are important for pedestrian travel. Overall, the pedestrian network near downtown has a consistent set of continuous walkways which provides a low street environment, and whereas towards the edges of the City and in residential areas many streets lack sidewalks or walkways such that travelers walk within the roadway. Where traffic volumes and speeds are higher, the absence of a dedicated walkway can create extreme stress on the traveler.

As redevelopment and frontage improvements occur through 2040, streets will be built to align with the standards outlined in Chapter 4 of this TSP. These standards require high-quality facilities, and an emphasis on safe, convenient, and comfortable travel, and contribute towards a network wide lower stress pedestrian experience.

Equally important is the pedestrian experience crossing streets. These locations are often when a pedestrian experiences some of the highest amount of stress, particularly along major streets with high travel speeds and traffic volumes. This TSP team looked at 20 intersections in the UGB. Sixteen of the intersections, including many of those along the busiest streets (i.e., US 101 and US 20), have a pedestrian stress level of extreme or high, while only four intersections that this TSP looked at have a low or moderate level of stress for pedestrians. In general, the studied interections lack ADA compliant curb ramps, have complex elements, or offer limited refuge or enhancements at the crossing.

METHODOLOGY USED TO IDENTIFY TSP PEDESTRIAN PROJECTS

The list of pedestrian network improvement projects shown in Chapter 6 were developed based on streets with pedestrian deficiencies. The solutions for these deficiencies were selected to support the overall goals and objectives of the TSP. For pedestrian projects that is primarily related to improvements that deliver safer, more accessible, and convenient facilities.

A street is considered deficient for walking if it meets one or more of the following conditions:

- **Sidewalk Gaps**
  Arterial or Collector Street segment without pedestrian facilities.
- **Pedestrian Level of Traffic Stress**
  Arterial or Collector Street segment with an extreme pedestrian level of stress.
- **Pedestrian Level of Traffic Stress near important Destinations**
  High or extreme pedestrian level of stress near parks, schools, transit stops, or other important destinations.

BICYCLE NETWORK

Bicycling is important for both transportation and recreation in Newport. This includes people who bike to work and school, people biking for fun, or people just running errands by bike. Riding bicycles also plays a key role in the transportation system's ability to support healthy and active lifestyles, with suitable facilities that provide a viable alternative to the automobile. While walking tends to be a competitive choice for trips under half a mile, bicycling tends to be suited for longer trips. Bicycle trips can often work well for distances between a half mile and three miles. Newport's relatively compact size makes biking a great choice for many trips, with local jobs and housing, in addition to hotels and other tourism destinations, typically in bikeable proximity.

This TSP includes projects to provide continuous bicycle connections between activity generators and arterial/collector roadways that are essential for safe and attractive non-motorized travel options. It includes bicycle infrastructure that appeals to a wider range of people, both in age and ability. Many people want to bike, but they find riding near traffic in standard bike lanes stressful and a deterrent. This TSP includes a bicycle network of streets with facility standards designed to minimize interactions between people on bikes and car traffic (see Chapter 4 of this TSP).

The bicycle network in Newport is composed of two lane miles of bike lanes, four miles of streets with shared lane markings and one mile of shared-use pathways. Bike lanes are currently striped along portions of US 101 near the NE 52nd Street/NW Lighthouse Drive intersection and SW Naterlin Drive, and on US 101 from the bridge south to the former intersection of SE Ferry Slip Road. Sharrows are currently located along portions of NW Oceanview Drive, NW Spring Street, NW Coast Street, SW Elizabeth Street, NE-NE 6th Street and SW Naterlin Drive. However, many of

the existing facilities are not continuous. In addition, nearly 90 percent of arterial streets currently lack bike facilities, including much of US 101 and US 20. Critical gaps existing across the Yaquina Bay Bridge, along the NW Oceanview Drive corridor and the Oregon Coast Bike Route.

BICYCLE LEVEL OF TRAFFIC STRESS

The bicycle level of traffic stress (LTS) evaluation provides a metric to understand a multimodal user's perception of the safety and comfort of the transportation network. This method was used to understand key gaps and barriers to biking to be addressed through targeted improvements in this TSP.

The LTS evaluation generates a ranking (i.e., low, moderate, high, or extreme stress) of the relative safety and comfort of a segment or intersection for bicyclists based on roadway and intersection characteristics (e.g., land use context, number of lanes, travel speed and volume, intersection control, type and width of buffer, and the presence and condition of any bicycle or pedestrian facilities). The LTS rating scale recognizes that as vehicle speeds and volumes increase, enhanced bicycle facilities are needed to maintain a system that is accessible for all users.

A bicyclist riding along roughly 15 percent of the analyzed arterial roadways and 90 percent of the analyzed collector roadways within the UGB will experience a low or moderate level of stress. This is generally representative of the many low volume and speed streets of the highway. Even still, an extreme or high level of stress is experienced along 85 percent of the analyzed arterial roadways and 10 percent of the analyzed collector roadways, mainly those with no bicycle facilities and the highest speeds and traffic volumes. This includes the extent of US 101 and US 20 through the UGB, and short segments of NE Harney Street, NE 31st Street, NE Yaquina Heights Drive, SE Bay Boulevard and SE Ferry Slip Road. These streets are important for bicycle travel as they connect to most businesses and services and in many cases provides the only through route for cyclists (e.g., the Yaquina Bay Bridge). NW Oceanview Drive, a component of the Oregon Coast Bike Route, was rated at extreme level of traffic street between US 101 and the intersection with NW Edenview Way, and medium level of traffic stress from there to Spring Street.

As redevelopment and frontage improvements occur through 2040, streets will be built to align with the standards outlined in Chapter 4 of this TSP. These standards require high-quality facilities, and an emphasis on safe, convenient, and comfortable travel, and contribute towards a network wide lower stress bicycle experience. For very low traffic volume conditions on local streets, consideration was given to allow for bicycling to be done within the roadway with designations for sharing the road when separate bikeway facilities are not available. This same shared street treatment was applied for pedestrian travel in the previous section for very low traffic conditions.

Equally important is the bicycle experience crossing streets. This TSP looked at 20 intersections in the UGB, of which 15 have a bicycle stress level of low or moderate. These are mainly at signalized intersections along US 101 or US 20, or at locations with low vehicle travel speeds and narrow crossing widths for cyclsits. Five unsignalized intersections along US 101 have a bicycle stress level of extreme or high. In general, these intersections are in locations with high vehicle travel speeds and wider crossing widths for cylists.

METHODOLOGY USED TO IDENTIFY TSP BICYCLE PROJECTS

The list of bicycle network improvement projects shown in Chapter 6 were developed based on streets with bicycle deficiencies. The solutions for these deficiencies were selected to support the overall goals and objectives of the TSP. For cycling projects that is primarily related to improvements that deliver safer, more accessible, and more convenient facilities such as dedicated bike lanes and multi-use pathways.

A street is considered deficient for bicycling if it meets one or more of the following conditions:

- **Bicycle Facility Gaps**

  Arterial or collector street segment without bicycle facilities or adjacent corridor with bicycle facilities.
- **Bicycle Level of Traffic Stress**

  Arterial or Collector Street segment with an extreme bicycle level of stress.
- **Bicycle Level of Traffic Stress near important Destinations**

  High or extreme bicycle level of stress near parks, schools, transit stops, or other important destinations.

TRANSIT

Transit service is provided in Newport via a city loop service, an intercity service, and an Americans with Disabilities Act (ADA) paratransit service. All Lincoln County Transit buses are equipped with a lift to allow wheelchair access and include bicycle racks. Riders are permitted to load their bicycle inside the bus only if the bike racks are full.

The Newport city loop completes a full loop through Newport six times each day, seven days a week, and in the evening, there is an additional southbound run to City Hall. This route has 41 bus stops, providing access to key destinations within Newport including grocery stores and other shopping, restaurants, local hotels and residences, Newport City Hall, post office, Oregon Coast Aquarium, NOAA facilities, and Nye Beach. The bus stops offer limited amenities, and many are unmarked, making the transit system challenging to navigate, particularly for visitors who may be unfamiliar with it. Most Newport residents are within a half mile of a transit stop, and in the downtown core, most residents are within a quarter mile of a transit stop. Long headways (up to 90 minutes) and limited service hours (approximately between 7 am and 5pm) for the Newport city loop transit service limits the utility of this service for residents and visitors. In addition, transit service is not currently provided south of SE 50th Avenue.

The intercity transit service operates routes to Corvallis and Albany four times each day, to Lincoln City four times each day, to Yachats four times each day, and to Siletz six times a day between Monday and Saturday.

Lincoln County Transit's paratransit service provides public transportation to persons with disabilities who are unable to use regular fixed route buses. Curb to curb paratransit service, in wheelchair lift equipped minibuses, is available generally between 8:00 a.m. and 3:30 p.m. Monday through Friday.

TRANSIT DEVELOPMENT PLAN

Lincoln County's Transit Development Plan will guide future changes to transit service. Identified changes through 2028 include:

- Add additional stops at Newport's Walmart and Fred Meyer as part of the Newport-Siletz route
- Add up to four additional daily runs on the Coast to Valley route which serves Corvallis and Albany and coordinate these runs to better align with work or Amtrak schedules
- Increase frequency up to 50 percent on weekdays and weekends for the Newport-Lincoln City Route
- Add additional stops at the Oregon Coast Community College as part of the Newport-Yachats route
- Extend Dial-A-Ride service hours and provide service seven days a week
- Modify the Newport City Loop route to remove the Nye Beach and Bayfront and maintain existing 90-minute headways
- Add a new Newport City Loop route which serves Fred Meyer, Nye Beach, City Hall, Bayfront, and Embarcadero with 45-minute headways
- Add a new Newport City Loop route which serves Nye Beach, City Hall, Bayfront, and Embarcadero with 30-minute headways

These transit enhancements were identified by Lincoln County Transit to address the most significant unmet needs within their transit system. Further investments will be coordinated with Lincoln County Transit. The recommended enhancements address several public concerns made during this TSP process related to transit access. Specific comments noted the need for additional stops, more bus shelters, and added tourist shuttles.

In addition, these enhancements also align with several of the goals and objectives of this TSP, including:

TSP Goal 2: Mobility and Accessibility

- Support expansions of the local and regional transit network and service
- Support transportation options and ease ofuse for people of all ages and abilities

TSP Goal 7: Prepare for Change

- Seek to supplement traditional transportation options with more emphasis givein to walking, biking, and transit

TSP Goal 9: Work with Regional Partners

- Build support with regional partners for the improvement of regional connections

FREIGHT NETWORK

US 101, north of US 20, is a designated federal truck route and US 20, east of US 101, is a designated Oregon freight route. As a designate truck route, the section of US 101 north of US 20 is also identified as a Reduction Review Route, which means that any improvements within the highway right-of-way needs to consider its impact of freight truck carrying capacity. In addition, about 8.5 miles of roadways are located adjacent to or connecting to industrial lands. These roadways include portions of NE Avery Street and NE 73rd Street at the north end of the City, SE Moore Drive and Bay Boulevard in the central part of the City, and US 101, SE 35th Street, SE 40th Street, SE 50th Street and SE Ferry Slip Road at the south end of the City.

With growing traffic volumes, six intersections along Oregon Freight Routes or Federal Truck Routes would not meet their currently adopted mobility target during the 2040 design hour conditions. These intersections are shown below.

Intersections that might experience increased freight delay through 2040:

- US 101/73rd (stop controlled on side street)
- US 101/52nd (signal)
- US 101/Oceanview (stop controlled on side street)
- US 101/US 20 (signal)
- US 20/Benton (stop controlled on side street)
- US 20/Moore (signal)

Note: Refer to Future Transportation Conditions and Needs, Technical Memo #7, for more information in the Appendix.

Although all these intersections are on a designated freight route, three of the intersections are two-way stop control where the side street will experience significant delay in the future. Since freight traffic is concentrated on US 101 and US 20 in Newport, high side-street delay at the intersections of US 101/Oceanview and US 20/Benton will likely have a minimal impact to freight. However, 73rd Street serves an industrial area which can generate high freight traffic, and increased side street delay at this location will negatively impact freight operations. High vehicle delay at the other three traffic signals will also increase delay for freight travel through Newport on US 101 or US 20.

Other locations with identified freight needs include Bay Boulevard and the Yaquina Bay Bridge. Bay Boulevard is a working waterfront and is a key freight generator for the City of Newport. This area is also a tourist destination which can create conflicts between the high volume of pedestrians, passenger cars, and freight vehicles which serve Newport's fishing industry. Freight vehicles can also struggle to navigate the steep grades for northbound traffic approaching the Yaquina Bay Bridge. The recent relocation of the traffic signal from SE 32nd Street to SE 35th Street

has improved this operational issue for freight vehicles..In addition, as noted previously, the Yaquina Bay Bridge has weight limit restrictions which directs heavier freight vehicles to reduce their loads below the maximum levels to comply, which increases the number of truck activity in this segment of the highway.

AIRPORT

The Newport Municipal Airport, owned and operated by the City of Newport, is a public-use airport located east of US 101 off SE 84th Street, approximately five miles south of downtown. This airport provides general aviation for Newport and surrounding coastal communities and is identified as a critical resource by the Oregon Department of Aviation for emergency response following a major earthquake or tsunami. Currently, the airport supports general aviation aircrafts, US Coast Guard helicopters, and air ambulance flights.

The airport currently supports 28 based aircraft. Other services and facilities include: hangars, tie-downs, fueling, and rental cars. The airport has two runways, and serves 19,600 annual operations (i.e., take-offs or landings).

Regional and international air service for passengers and freight is provided via Portland International Airport (PDX). The airport is located approximately 140 miles (over three hours) northeast of Newport. Eugene Airport located approximately 80 miles (or 90 minutes) southeast of Newport also provides regional air service.

WATERWAYS

Newport is bounded to the west by the Pacific Ocean and is divided north-south by Yaquina Bay, a commercially navigable waterway. Yaquina Bay is a 30-foot deep basin and 300 feet across at its narrowest point; at high water, there is 129 feet of vertical clearance under the Yaquina Bay Bridge.

The Port of Newport maintains and operates separate commercial and recreational marinas to serve Newport's ship traffic. The commercial marina, located on the north side of Yaquina Bay, south of Bay Boulevard includes four docks for commercial vehicles and serves a large, prolific fishing fleet and a yacht club. This marina can accommodate vessels up to 100 feet. Marine supplies and a customs office are available for patrons. The recreational marina is located on the south side of Yaquina Bay, near South Beach, with space for 522 vessels and includes power, water, fuel, and sanitary services as amenities. This marina also serves as a public boat launch with space for trailer storage.

The Newport International Terminal provides two berths for cargo ships, research vessels, cruise ships, and fishing boats on the north side of Yaquina Bay. This terminal is one of three deep draft ports on the Oregon Coast and has traditionally been used to ship timber products. NOAA also maintains a marine operations center to the south of Yaquina Bay and serves as the home port for two research vessels in addition to supporting five ships.

Chapter 4: System Design & Management Principles

Newport applies transportation standards and regulations to the construction of new transportation facilities and to the operation of all facilities to ensure that they are designed appropriately and that the system functions as intended. These standards enable consistent future actions that reflect the goals and objectives of the City.

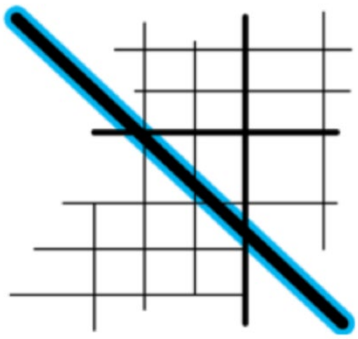
FUNCTIONAL CLASSIFICATION

Functional classification for streets helps support the movement of vehicles and is an important tool for managing the roadway network. The street functional classification system recognizes that individual streets do not act independently of one another but instead form a network that serves travel needs on a regional, citywide, neighborhood and local level. By designating the management and design requirements for each roadway classification, this hierarchal system supports a network of streets that perform as desired.

The street functional classification system for roadways in the Newport is described below. The functional classification map (Figure 22, Figure 23, and Figure 24) shows the designated classification for all roadways in the City, including new street extensions proposed as part of this plan. From highest to lowest intended use, the classifications are Arterial, Major Collector, Neighborhood Collector, and Local Streets. For a summary of functional classification changes from the prior TSP, see Technical Memorandum #10: Transportation Standards, in the appendix.

The federal government also has a functional classification system that is used to determine federal aid funding eligibility. Roadways federally designated as a Minor Collector (Urban), Major Collector, Minor Arterial, Principal Arterial, or Interstate are eligible for federal aid. Newport's functional classification system uses the similar designations as the federal government (e.g., a City designated Principal Arterial is intended to be the same as a federally designated Principal Arterial, a City designated Major Collector is intended to be the same as a federally designated Major Collector, and a City designated Neighborhood Collector is intended to be the same as a federally designated Urban Minor Collector). Future updates to the federal functional classification system should incorporate the designations reflected in the TSP along City roadways.

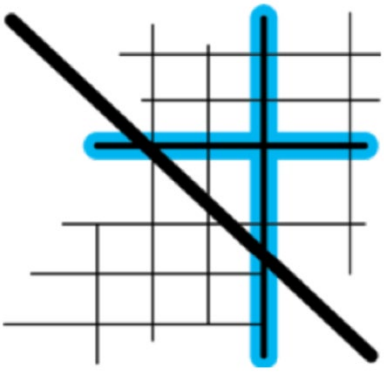
ARTERIAL STREETS



Arterial Streets are primarily intended to serve regional and citywide traffic movement. Arterials provide the primary connection to other Arterial Streets or Collector Streets. Safety should be the highest priority on Arterial Streets and separation should be provided between motor vehicles and people walking, and bicycling. Safe multimodal crossings should also be provided to key destinations. Where an Arterial Street intersects with a Neighborhood Collector or Local Street, access management and/or turn restrictions may be employed to reduce traffic delay. The only Arterial streets in Newport are US 101 and US 20, which also include a Federal Classification of Urban Other Principal Arterial.

MAJOR COLLECTOR STREETS

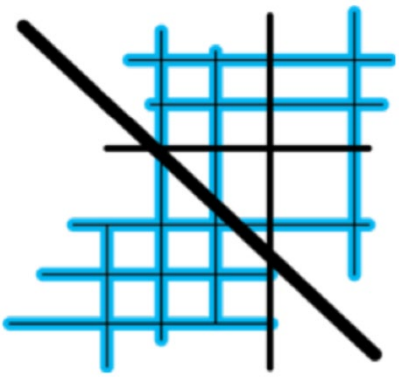
Major Collector Streets are intended to distribute traffic from Arterial Streets to streets of the same or lower classification. They provide both access and circulation within and between residential and non-residential areas. Major Collectors differ from Arterials in that they provide more of a citywide circulation function, do not require as extensive control of access (compared to arterials) and penetrate residential neighborhoods, distributing trips from the neighborhood and local street system. Safety should be a high priority on Major Collectors. Where a Major Collector Street intersects with a Neighborhood Collector or Local Street, access management and/or turn restrictions may be employed to reduce traffic delay.



NEIGHBORHOOD COLLECTOR STREETS

Neighborhood Collector Streets distribute traffic from Arterial or Major Collector Streets to Local Streets. They are distinguishable from Major Collectors in that they principally serve residential areas. Neighborhood Collector Streets should maintain slow vehicle operating speeds to accommodate safe use by all modes and through traffic should be discouraged, especially in areas with topography or other line of sight constraints. Where a Neighborhood Collector Street intersects with a higher-classified street, access management and/or turn restrictions may be employed to reduce traffic delay and discourage through traffic.

LOCAL STREETS



All streets not classified as Arterial, Major Collector, or Neighborhood Collector Streets are classified as Local Streets. Local Streets provide local access and circulation for traffic, connect neighborhoods, and often function as through routes for pedestrians and bicyclists. Local Streets should maintain slow vehicle operating speeds to accommodate safe use by all modes.

Private Streets

Private Streets are a special type of Local Street that are used to facilitate access to specific properties or small neighborhoods. Private Streets can include driveways or private roadway connections that serve four or fewer parcels. The City is not responsible for maintenance on Private Streets. These streets are not shown on the following functional classification maps.

FIGURE 22: FUNCTIONAL CLASSIFICATIONS (NORTH)

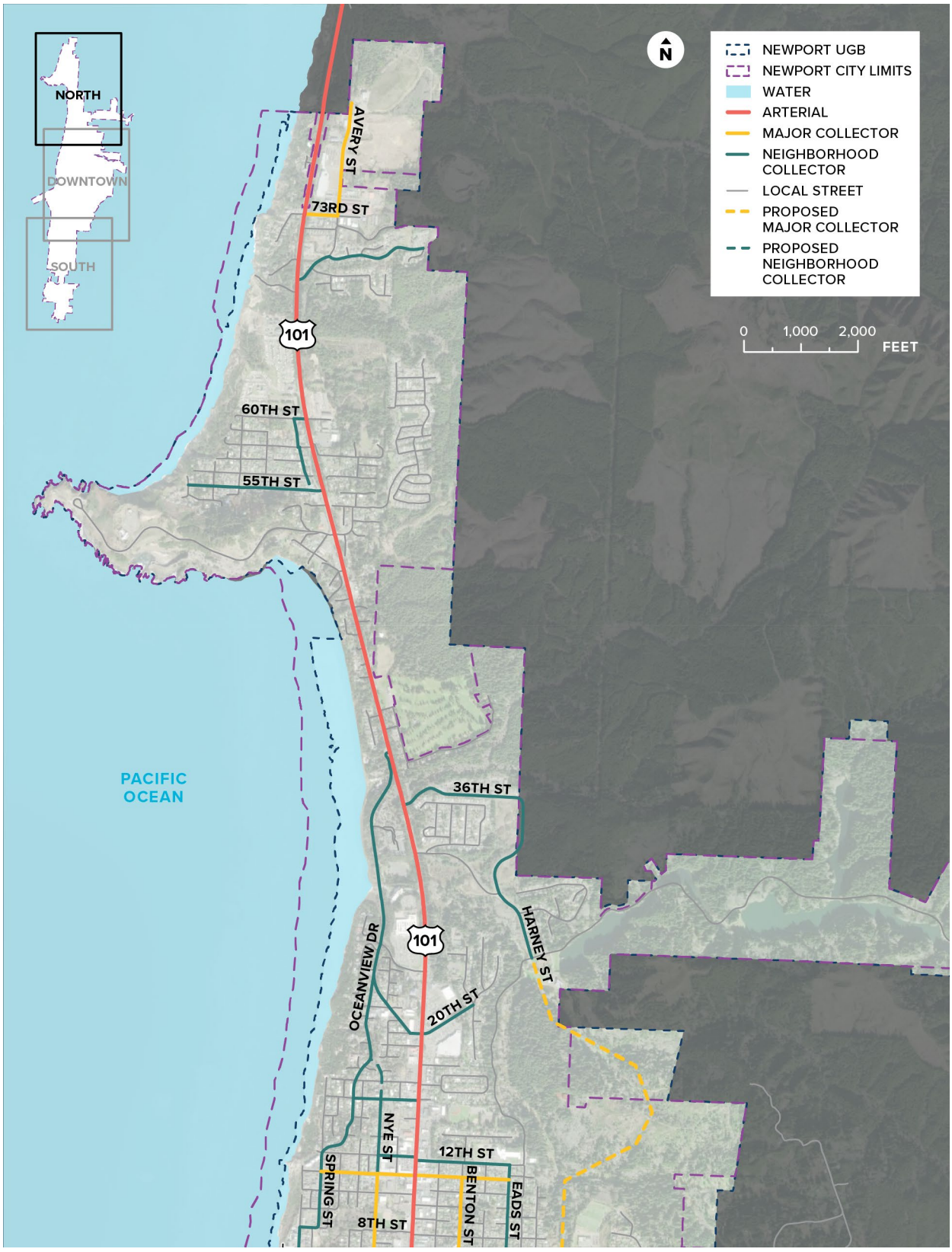


FIGURE 23: FUNCTIONAL CLASSIFICATIONS (DOWNTOWN)

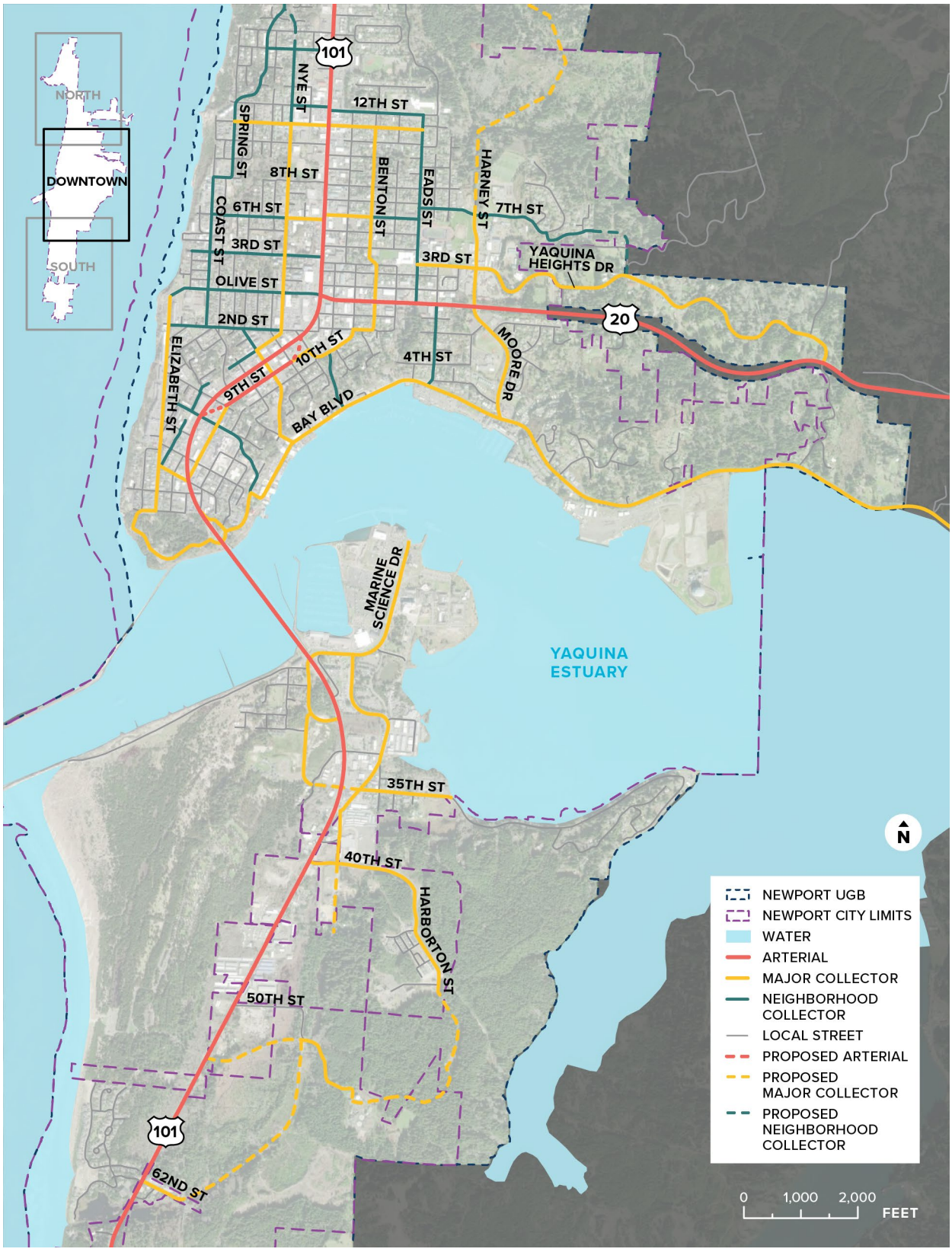
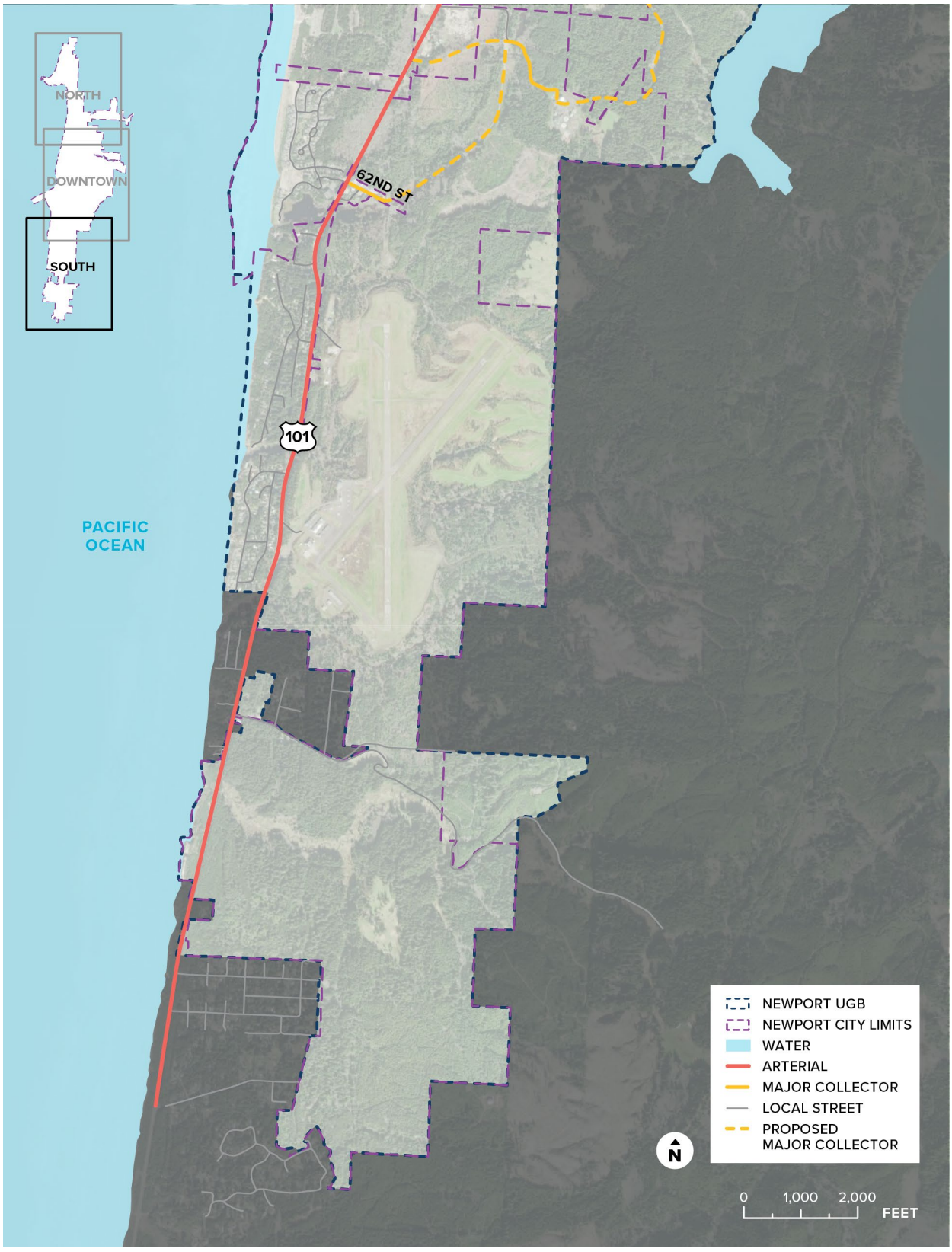


FIGURE 24: FUNCTIONAL CLASSIFICATIONS (SOUTH)



FREIGHT AND TRUCK ROUTES

Figure 25, Figure 26, and Figure 27 show roadways designated to help ensure trucks can efficiently travel through and access major destinations in Newport. These routes play a vital role in the economical movement of raw materials and finished products, while maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system.

STATE AND FEDERAL FREIGHT ROUTES

Newport currently has two designated statewide freight routes. US 101 (north of US 20) is a National Network freight route while US 20 is a designated freight route in the Oregon Highway Plan (OHP). The National Network designates a set of highways based on geometric specifications (e.g., 12 feet travel lanes) specifically for use by large trucks while the OHP identifies freight routes based on the tonnage carried. Both of these corridors are also identified freight reduction review routes that requires the Mobility Advisory Committee to review and approve proposed changes to any reduction in the vehicle carrying capacity of these routes. US 101 south of US 20 is not a National Network freight route, OHP freight route, or reduction review route.

LOCAL TRUCK ROUTES

The City has local truck routes designed to facilitate the movement of truck freight between local industrial and commercial uses and state highways. These roadways serve an important role in the City roadway network and should be designed and managed to safely accommodate the movement of goods. These routes require a minimum of 11-foot travel lanes.

The local truck network, shown in Figure 25, Figure 26, and Figure 27, includes NE 73rd Street, NE Avery Street, NE 36th Street, NE Harney Street, SW/E Bay Boulevard, SE Moore Drive, Yaquina Bay Road, US 101 (south of US 20), SE Marine Science Drive, SE Ferry Slip Road, SE 35th Street, and the future extensions of SE 50th Street and SE 62nd Street.

FIGURE 25: FREIGHT AND TRUCK ROUTES (NORTH)

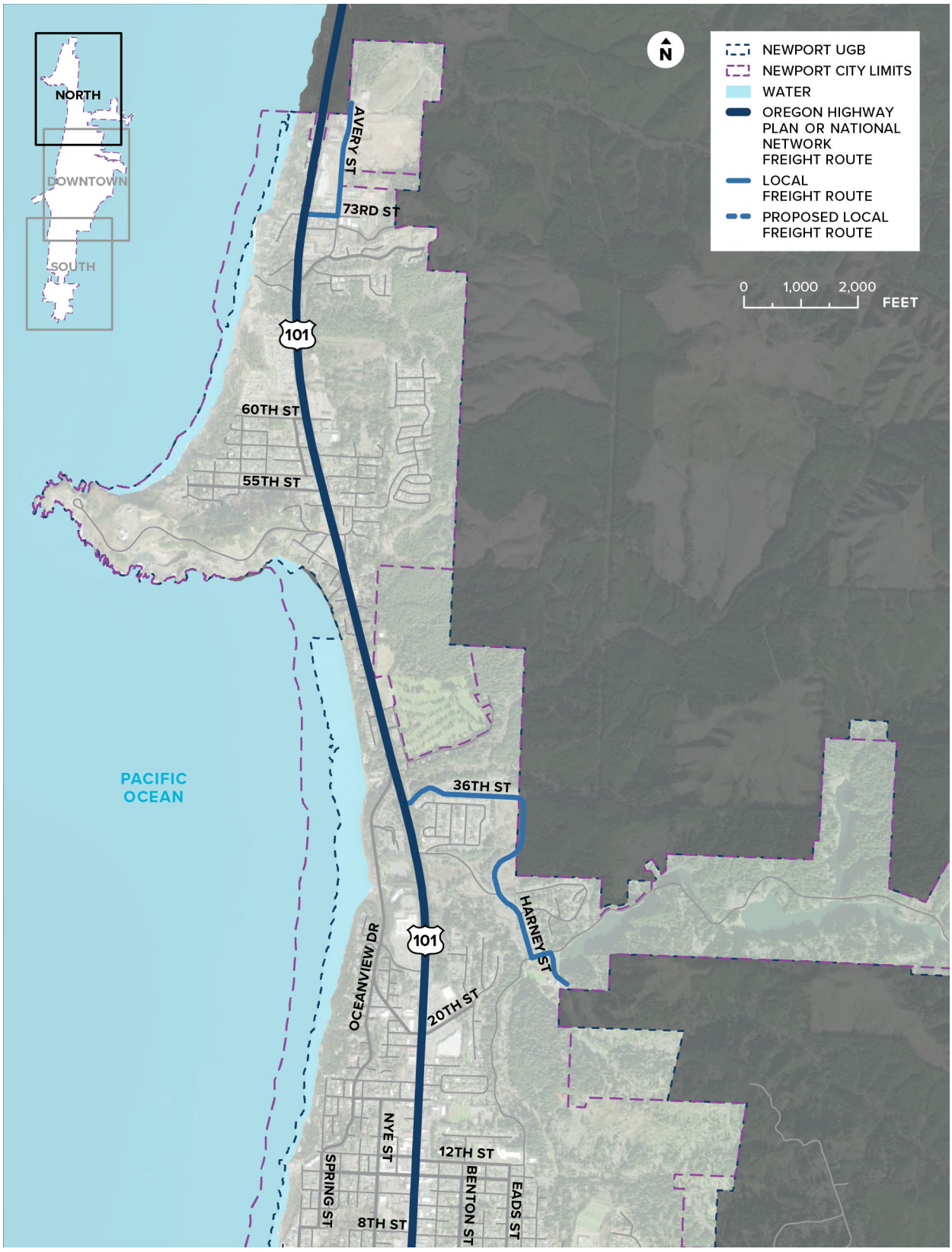


FIGURE 26: FREIGHT AND TRUCK ROUTES (DOWNTOWN)

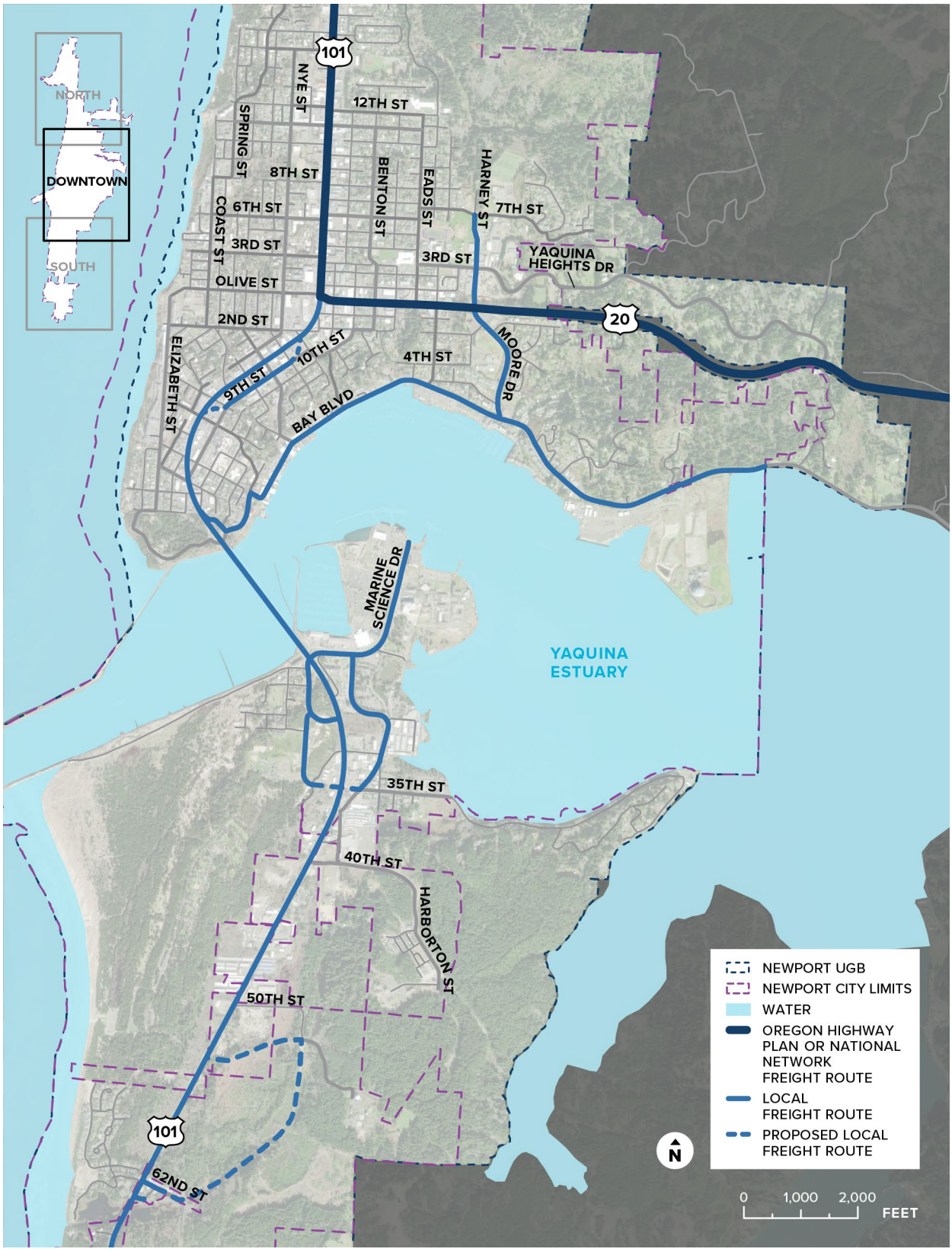
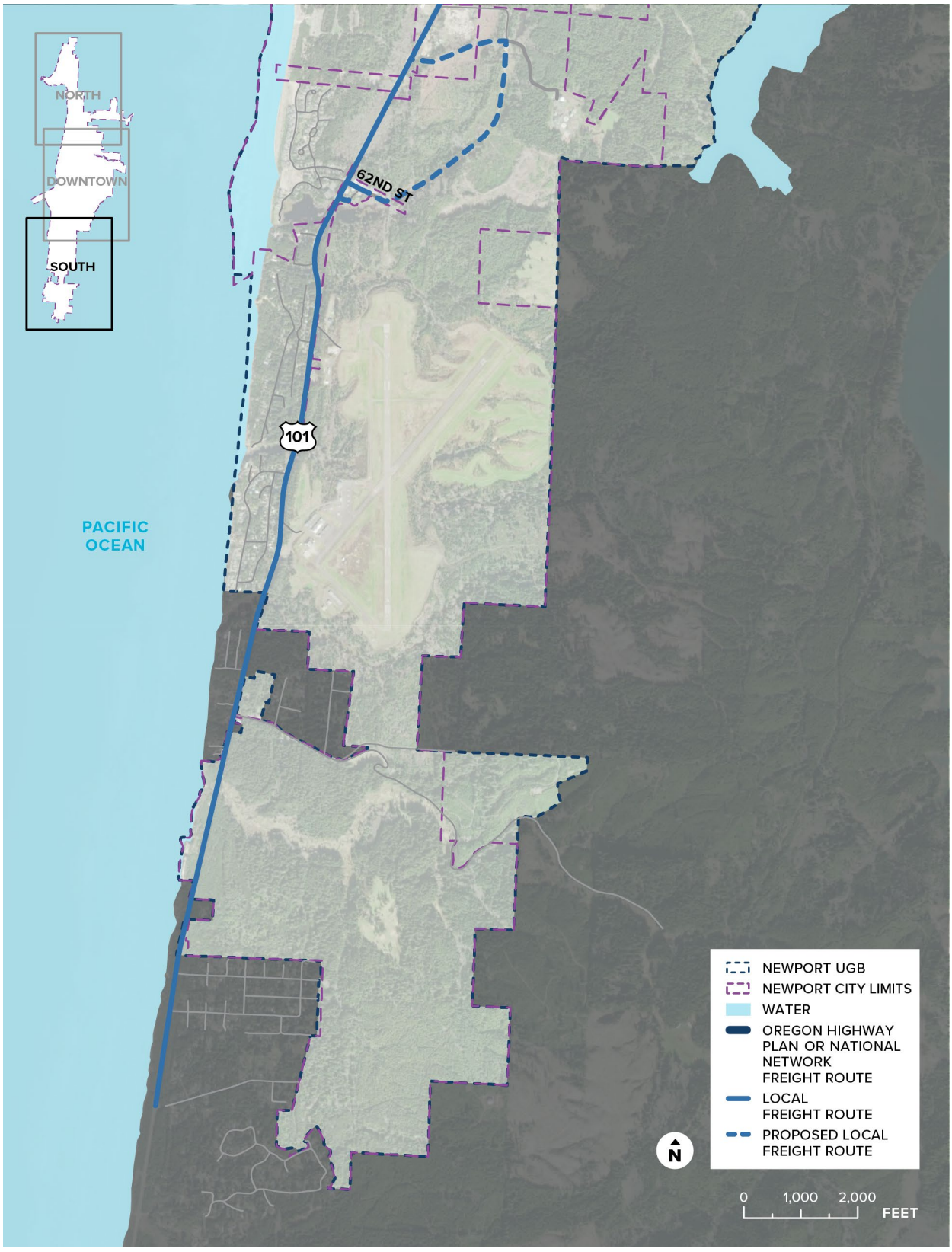


FIGURE 27: FREIGHT AND TRUCK ROUTES (SOUTH)



MULTIMODAL NETWORK DESIGN

The design of the streets in Newport is based on the functional classifications. The designs are intended to be implemented in newly developing or redeveloping areas of the City, where constrained conditions do not limit the ability to construct the typical cross-section described in the following sections. The City may also choose to reconstruct existing streets to meet the typical designs should right-of-way or other factors not prevent it from occurring.

The construction or reconstruction of some streets may be constrained by various factors that prevent it from being constructed according to the typical standards that apply. A deviation to the City street standards may be requested from the City Engineer, City Engineer's designee, or Planning Director to consider a constrained cross-section or other adjustments. Various minimum acceptable design parameters are outlined for these locations. In some cases, unconstrained locations may also apply the minimum design parameters if they function as low-volume local streets (i.e., fewer than 500 vehicles per day).

Typical conditions that may warrant consideration of a deviation include:

- Infill sites
- Innovative designs
- Reallocation of right-of-way between modes (e.g., narrow travel lanes to accommodate wider bike lanes)
- Severe constraints presented by topography, environmental, or other resources present
- Existing developments and/or buildings that make it extremely difficult or impossible to meet the standards

Roadway cross-section design elements include travel lanes, curbs, furnishings/landscape strips, sidewalks on both sides of the road, and bicycle facilities. The following sections detail both preferred (for application in unconstrained locations) and acceptable element widths (for application in constrained locations or for low-volume local streets) for each of Newport's functional classifications.

Although the preferred facilities along Arterial streets are provided, both US 101 and US 20 are under the State's jurisdiction and are subject to the design criteria in the Highway Design Manual (HDM), other ODOT manuals, and the companion document, the Blueprint for Urban Design (BUD). The BUD supplements existing design manuals and provides enhanced design guidance until a full design manual update can be completed. The preferred facilities along Arterial streets are consistent with the BUD and the applicable urban contexts for US 101 and US 20 through Newport (more details provided in the Appendix). Any deviation to standards along these facilities must be approved by the State.

TRAVEL LANES AND PARKING

The vehicle classifications and local truck routes determine the design parameters for travel lanes of each street. This is the throughway for drivers, including cars, buses, and trucks. Table 2 provides the travel lane and on-street parking requirements. The vehicle functional classification of the street is the starting point to determine the number of through lanes, lane widths, and median and left-turn lane requirements. However, Newport's local truck routes take precedence when determining the appropriate lane width regardless of the functional classification. Streets identified as part of Newport's local truck network may include travel lanes up to 12 feet wide, although 11 feet travel lanes are also acceptable. Wider lanes (over 12 feet) should only be used for short distances along curves and at intersections to allow trucks to maneuver. Streets that require a median/ center turn lane should include a minimum 6-foot-wide pedestrian refuge at marked crossings. Otherwise, the median can be reduced to a minimum of 4 feet at midblock locations, before widening at intersections for left-turn lanes (where required or needed).

Select low-volume Local Streets (i.e., fewer than 500 vehicles per day) are also candidates for a Shared Street treatment where all roadway users share a single, unmarked travel lane that is narrower than a traditional Local Street. Shared Streets require vehicle traffic to yield to pedestrians and bicyclists within the roadway which is reinforced by the narrow pavement width. The design of these streets is like many of Newport's existing, low-volume streets. Shared Streets are intended as an alternative to Local Street design where widening is not feasible, and this treatment supersedes the requirements of the Oregon Fire Code by authority granted to the City under ORS 368.039.

TABLE 2: TRAVEL LANE AND ON-STREET PARKING REQUIREMENTS

ROADWAY CLASSIFICATION	ARTERIAL STREET[1]	MAJOR COLLECTOR STREET	NEIGHBORHOOD COLLECTOR STREET	LOCAL STREET	SHARED STREET[2]
TYPICAL THROUGH LANES (BOTH DIRECTIONS)	2 to 4	2	2	2	1
MINIMUM LANE WIDTH	11-12 ft.[3]	10 ft.[4]	10 ft.[4]	10 ft.	16 ft.
MEDIAN/ CENTER TURN LANE [5]	Optional 11-14 ft. median/ center turn lane[6]	Optional 11 ft. center turn lane [7]	None	None	None
MINIMUM ON-STREET PARKING WIDTH	Context dependent, 7-8 ft. where applicable	Optional 8 ft. preferred, 7 ft. allowed in residential areas[8]	Optional 8 ft. preferred, 7 ft. allowed in residential areas [8]	Optional 8 ft. preferred, 7 ft. allowed in residential areas [8]	None

Notes:

1. Although guidance is provided for Arterial streets, these are under State jurisdiction. Values presented in this table are consistent with the Blueprint for Urban Design (BUD). For detailed design recommendations on US 101 and US 20, the identified urban contexts for Newport are provided in the appendix and the BUD is publicly available.
2. Shared Street conditions may apply to local streets that carry fewer than 500 vehicles per day.
3. 11 ft. travel lanes are preferred for most urban contexts within Newport. 11 ft. travel lanes are standard for central business district areas in the BUD. Adjustments may be required for freight reduction review routes. Final lane width recommendations are subject to review and approval by ODOT.
4. Travel lanes up to 12 ft. may be permitted for designated local truck routes only.
5. A minimum 6-foot-wide pedestrian refuge should be provided at marked crossings. Otherwise, a median can be reduced to a minimum of 4 feet at midblock locations, before widening at intersections for left-turn lanes (where required or needed).
6. The BUD recommends a 14 ft. lane for speeds above 40 mph. Final lane width recommendations are subject to review and approval by ODOT.
7. Center left-turn lane required at intersections with Arterials; minimum 6-foot-wide median required where refuge is needed for pedestrian/bicycle street crossings.
8. 8 feet width required in commercial areas and 7 feet width allowed in residential areas. Provision of on-street parking (one-side only) should be limited to City streets (not on a designated freight route) with a minimum 28 ft. paved width in commercial areas or a minimum 27 ft. in residential areas. Provision of on-street parking (both sides) should be limited to City streets (not on a designated freight route) with a minimum 36 ft. paved width in commercial areas or a minimum 34 ft. in residential areas. For designated freight routes, on-street parking may only be provided with an additional 4 ft. paved width. On-street parking may be eliminated on one or both sides if adequate parking is provided off-street or to accommodate bicycle/pedestrian facilities.

SIDEWALKS

Sidewalks provide for pedestrian movement and access, enhance pedestrian connectivity, and promote walking. The pedestrian facilities in Newport encourage walking by making it more attractive. Vehicle functional classification determine the appropriate pedestrian facilities along streets, including the width of the throughway for pedestrians and the buffer from the vehicle travel way. Sidewalk may be provided on one side of the street only where significant topographical constraints exist as determined by the City Engineer, City Engineer's designee or Planning Director.

FIGURE 28: SIDEWALK ZONES

The sidewalk encompasses four zones (as shown in Figure 28), including the frontage, pedestrian throughway, furnishings/ landscape, and the buffer (i.e., on-street parking or bike facilities). These zones are summarized below, with the preferred configuration for each provided in Table 3, with acceptable configurations shown in Table 4. Sidewalk facilities constructed on State facilities are subject to review and approval by ODOT based on guidance from the BUD.

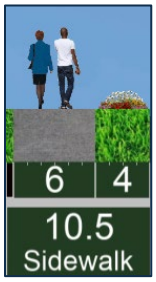
- The **frontage** describes the section where a pedestrian interacts with the adjacent buildings or private property and includes entryways and outdoor seating. This zone is typically between 1 and 3 feet wide along Arterial or Collector streets and ½ foot for other streets. It may include a concrete or natural surface depending on the adjacent land use.

- The **pedestrian throughway** is the accessible zone in which pedestrians travel. It includes a minimum eight-foot-wide clear throughway along Arterial or Collector streets, a minimum six-foot-wide clear throughway for Neighborhood Collector streets, and five-feet wide clear throughway along Local streets.

- The **furnishings/ landscape** zone is the sidewalk section located between the pedestrian throughway and the curb, and includes street furnishings or landscaping (e.g., benches, lighting, bicycle parking, tree wells, and/or plantings). If adjacent to on-street parking, it should also include a clearance distance between any curbside parking and the street furnishing area or landscape strip (i.e., so vehicles parking, or opening doors do not interfere with street furnishings and/or landscaping). Streets located along a transit route should incorporate furnishings to support transit ridership, such as transit shelters and benches, into the furnishings/landscape strip. It should include a minimum width of four feet.

- The **buffer** is the space between the pedestrian throughway and the vehicle travel way, and may consist of bike facilities, on-street parking, curb extensions, or other elements. This is also the location where users will access transit. It should include a minimum width between four and 12 feet, depending on the functional classification, and encompasses the width of on-street parking, bike facilities, and furnishings/landscape zone.

TABLE 3: PREFERRED SIDEWALK CONFIGURATION

FUNCTIONAL CLASSIFICATION	ARTERIAL OR MAJOR COLLECTOR (COMMERCIAL)	ARTERIAL OR MAJOR COLLECTOR (RESIDENTIAL)	NEIGHBORHOOD COLLECTOR	LOCAL STREET[1]
PREFERRED CONFIGURATION				
FRONTAGE	3 ft. (City) 1-4 ft. (ODOT)	1 ft. (City) 1 ft. (ODOT)	0.5 ft.	0.5 ft.
PEDESTRIAN THROUGHWAY	8 ft. (City) 8-10 ft. (ODOT)	8 ft. (City) 8 ft. (ODOT)	6 ft.	5 ft.
FURNISHINGS/ LANDSCAPE (INCLUDES CURB)[2]	4 ft. (City) 5.5-6.5 ft. (ODOT)	4 ft. (City) 6.5 ft. (ODOT)	4 ft.	4 ft.
DESIRED WALKWAY WIDTH	15 ft. (City) Variable (ODOT)[4]	13 ft. (City) Variable (ODOT)[4]	10.5 ft.	9.5 ft.
DESIRED BUFFER (PEDESTRIAN THROUGHWAY TO VEHICLE TRAVEL WAY)[3]	12 ft. (City) Variable (ODOT)[4]	12 ft. (City) Variable (ODOT)[4]	4 ft.	4 ft.

Notes:

1. Shared Streets do not require sidewalk
2. Furnishings/landscape width may be reduced to the "acceptable" standard if bike facilities or on-street parking is included within the buffer zone
3. Includes width of on-street parking, bike facilities, and furnishings/landscape zone, if provided
4. Desired walkway and buffer width for ODOT facilities depends on the urban context and are subject to review and approval by ODOT. Additional detail is provided in the BUD.

TABLE 4: ACCEPTABLE SIDEWALK CONFIGURATION

FUNCTIONAL CLASSIFICATION	ARTERIAL OR MAJOR COLLECTOR (COMMERCIAL)	ARTERIAL OR MAJOR COLLECTOR (RESIDENTIAL)	NEIGHBORHOOD COLLECTOR	LOCAL STREET[1]
ACCEPTABLE CONFIGURATION				
FRONTAGE	0.5 ft. (City) 1-2 ft. (ODOT)	0.5 ft. (City) 1 ft. ODOT	0.5 ft.	0.5 ft.
PEDESTRIAN THROUGHWAY	8 ft. (City)[3] 5-8 ft. (ODOT)	6 ft. (City) 5 ft. (ODOT)	6 ft.	5 ft.
FURNISHINGS/ LANDSCAPE (INCLUDES CURB)	3 ft. (City) 0.5 ft. (ODOT)	3 ft. (City) 0.5 ft. (ODOT)	0.5 ft.	0.5 ft.
MINIMUM WALKWAY WIDTH	11.5 ft. (City) Variable (ODOT)[4]	9.5 ft. (City) Variable (ODOT)[4]	7 ft.	6 ft.
RECOMMENDED MINIMUM BUFFER (PEDESTRIAN THROUGHWAY TO VEHICLE TRAVEL WAY)[2]	3 ft. (City) Variable (ODOT)[4]	3 ft. (City) Variable (ODOT)[4]	0.5 ft.	0.5 ft.

Notes:

1. Shared Streets do not require sidewalk
2. Includes width of on-street parking, bike facilities, and furnishings/landscape zone
3. In highly constrained locations, the landscape buffer may be eliminated to meet the required 8 ft. pedestrian throughway with approval from the City Engineer and Planning Director
4. Desired walkway and buffer width for ODOT facilities depends on the urban context and are subject to review and approval by ODOT. Additional detail is provided in the BUD.

BICYCLE FACILITIES

Bike facilities help support the movement of people riding bikes. Streets should be safe and comfortable for bicyclists of all ages and abilities to encourage ridership. Building high quality bicycle infrastructure can improve transportation safety, minimize public health risks, reduce congestion, and provide more equitable access to transportation. The preferred and acceptable bicycle facilities can be seen in Table 5. Vehicle function classification is used to determine the appropriate facilities along streets. The preferred treatments are recommended to include protected or separated facilities from the vehicle travel way along Arterial and Major Collector streets and bicycle lanes along Neighborhood Collector streets. A shared street environment will be provided on Newport's Local Streets.

TABLE 5: PREFERRED AND ACCEPTABLE BICYCLE FACILITIES

VEHICLE CLASSIFICATION	ARTERIAL OR MAJOR COLLECTOR	NEIGHBORHOOD COLLECTOR	LOCAL STREET
PREFERRED BIKE FACILITY (UNCONSTRAINED CONDITIONS)	Protected or separated facilities from the vehicle travel way (e.g., shared use path, separated bicycle lanes)	Bicycle lanes	Shared streets without shared lane markings
ACCEPTABLE BIKE FACILITY (CONSTRAINED CONDITIONS)[1]	Bicycle lanes	Shared streets with shared lane markings	Shared streets without shared lane markings

Notes:

1. Any modification of a standard bike facility requires justification of any constraints (e.g., topography, environmental, existing buildings) and approval of an acceptable deviation prior to construction.

BICYCLE FACILITY OPTIONS

Table 6 shows bicycle facility options and preferred configurations. In general, facilities that are protected or separated from the vehicle travel way include a 10-foot two-way or 6-foot one-way cycle track, 10-foot shared use path, or 8-foot buffered bike lanes. Non-buffered bike lanes should be a minimum of 6-feet wide, while some shared streets should include shared lane markings, with vehicle speed and volume management.

TABLE 6: BICYCLE FACILITY OPTIONS AND PREFERRED CONFIGURATIONS

BICYCLE FACILITY TYPE	PREFERRED CONFIGURATION	PREFERRED DESIGN PARAMETERS
TWO-WAY CYCLE TRACK (PROTECTED/ SEPARATED FACILITY)[1]		Option: At sidewalk grade Minimum buffer: Up to 6 ft. from vehicle travel way; consider a buffer or other delineation to separate bicycle facility from sidewalk
		Minimum width: 12 ft. Minimum buffer: Up to 6 ft. from vehicle travel way; 0 ft. from sidewalk
(PROTECTED/ SEPARATED FACILITY)[1]		Minimum width: 8 ft. Minimum buffer: Up to 6 ft. from vehicle travel way; consider a buffer or other delineation to separate bicycle facility from sidewalk
		Option: At roadway grade Minimum width: 8 ft. Minimum buffer: Up to 6 ft. from vehicle travel way; 0 ft. from sidewalk
SHARED USE PATH (PROTECTED/ SEPARATED FACILITY)[1]		Minimum width: 12 ft. Minimum shoulder: 2 ft. on each side Minimum buffer: Up to 6 ft. from vehicle travel way
BUFFERED BIKE LANES (PROTECTED FACILITY)[1]		Minimum width: 8 ft. (5 ft. bike lane with 3 ft. buffer)

BICYCLE FACILITY TYPE	PREFERRED CONFIGURATION	PREFERRED DESIGN PARAMETERS
BIKE LANES[1]		Minimum width: 6 ft.
SHARED STREET		Optional treatments: Shared lane markings, vehicle speed and volume management

Notes:

1. Desired bicycle facility and buffer width for ODOT facilities depends on the urban context and are subject to review and approval by ODOT. Additional detail is provided in the BUD.

PREFERRED STREET CROSS-SECTIONS FOR CITY STREETS

To determine the typical cross-section for a street implemented in newly developing or redeveloping areas of the City, the motor vehicle functional classification is used to determine the design requirements for each mode. In unconstrained conditions, the preferred facility design requirements should be met for all modes (see Table 2, Table 3, Table 5 and Table 6). The preferred cross-sections for Major Collectors, Neighborhood Collectors, and Local Streets in unconstrained conditions are provided in Figure 29, Figure 30, Figure 31 and Figure 32, respectively. The preferred Local Street cross-sections include options for parking on one side of the street only and no on-street parking. The provision of parking on one side of the street only should be determined based on the availability of off-street parking as determined by the City Engineer, City Engineer's designee, or Planning Director. All typical cross-sections provided below assume that the street is not located on a designated local freight route. Local freight routes may require travel lanes up to 12 ft., although 11 ft. travel lanes are also acceptable.

No typical cross-sections are provided for Arterials in Newport since these streets are subject to review and approval by ODOT. Design guidance from ODOT can be found in the BUD and is summarized in Table 2, Table 3, Table 5 and Table 6. ODOT's design guidance is context dependent which provides flexibility in specific element widths when determining typical cross-sections.

FIGURE 29: PREFERRED MAJOR COLLECTOR TYPICAL CROSS-SECTION

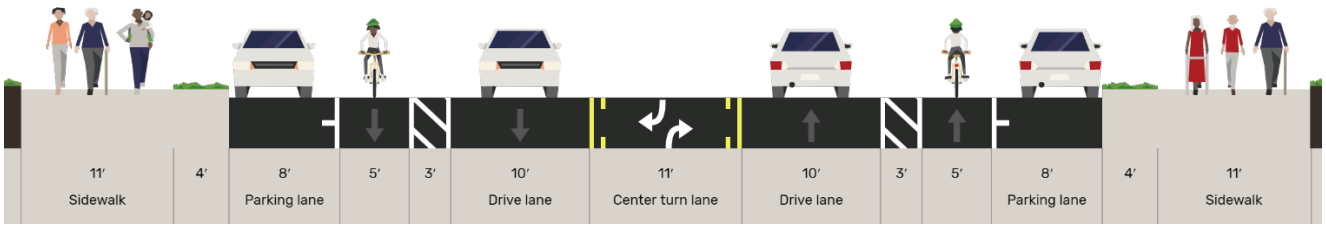


FIGURE 30: PREFERRED NEIGHBORHOOD COLLECTOR TYPICAL CROSS-SECTION

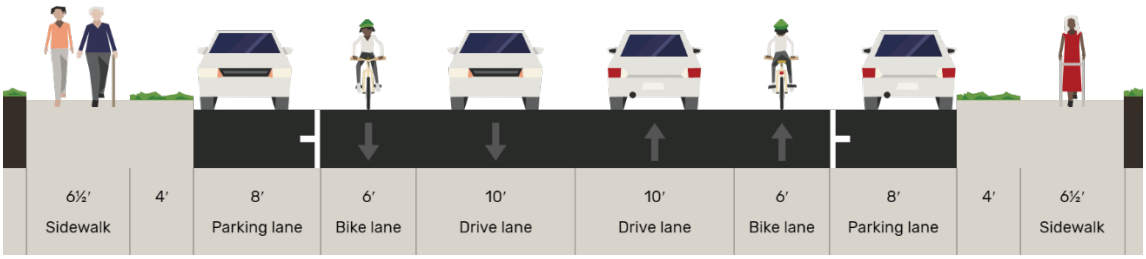


FIGURE 31: PREFERRED LOCAL STREET TYPICAL CROSS-SECTION – PARKING ONE SIDE ONLY

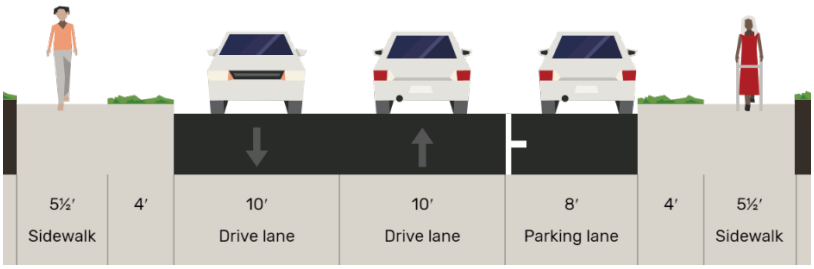
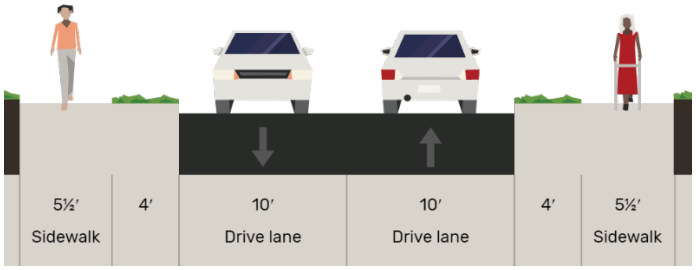


FIGURE 32: PREFERRED LOCAL STREET TYPICAL CROSS-SECTION – NO PARKING



ACCEPTABLE STREET CROSS-SECTIONS FOR CITY STREETS

The preferred designs are intended to be implemented in newly developing or redeveloping areas of the City (e.g., areas where two or more adjacent parcels redevelop concurrently, subdivisions constructed on existing parcels), where constrained conditions do not limit the ability to construct the typical cross-section. The construction or reconstruction of some streets may be constrained by various factors that prevent it from being constructed according to the typical standards that apply. A deviation to the street standards may be requested from the City Engineer, City Engineer's designee, or Planning Director to consider a constrained cross-section or other adjustments. Various minimum acceptable design parameters are outlined for these locations. Constrained conditions may apply when the required width of the street cross-section (i.e., the sum of the recommended widths of travel lanes, on-street parking, pedestrian, and bicycle facilities) exceeds the available right-of-way.

If the required cross-section is wider than the available right-of-way, coordination with the City of Newport is required to determine whether right-of-way acquisition is necessary, or if design elements can be narrowed or removed. For locations with constrained right-of-way, guidance for determining an acceptable street cross-section is summarized in Table 7. The guidance shows the order in which cross-section elements should be reduced to acceptable minimum standards based on the designated pedestrian or bicycle corridors shown in Technical Memorandum #10 in the Appendix. The acceptable constrained cross-sections are summarized below in Figure 33, Figure 34, Figure 35, Figure 36 and Figure 37.

TABLE 7: PROCESS FOR DETERMINING STREET CROSS-SECTIONS IN CONSTRAINED CONDITIONS

ANY NON-ARTERIAL[1] STREET FUNCTIONAL CLASSIFICATION WITH:	STEP 1 [5]	STEP 2	STEP 3	STEP 4
EQUAL PEDESTRIAN AND BICYCLE CORRIDORS[2]	Eliminate on-street parking on one or both sides	Reduce sidewalk frontage zone to acceptable width	Choose acceptable bike facility	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width
HIGHER PEDESTRIAN VS. BICYCLE CORRIDORS [3]	Eliminate on-street parking on one or both sides	Implement acceptable bike facility	Reduce sidewalk frontage zone to acceptable width	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width
HIGHER BICYCLE VS. PEDESTRIAN CORRIDORS[4]	Eliminate on-street parking on one or both sides	Reduce sidewalk frontage zone to acceptable width	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width	Implement acceptable bike facility

Notes:

1. The street cross-section for ODOT facilities depends on the urban context and are subject to review and approval by ODOT. Additional detail is provided in the BUD.
2. Includes Major Pedestrian vs. Major Bicycle corridor, Neighborhood Pedestrian vs. Neighborhood Bicycle corridor, or Local Pedestrian vs. Local Bicycle corridor.
3. Includes Major Pedestrian vs. Neighborhood or Local Bicycle corridor, or Neighborhood Pedestrian vs. Local Bicycle corridor.
4. Includes Major Bicycle vs. Neighborhood or Local Pedestrian corridor, or Neighborhood Bicycle vs. Local Pedestrian corridor
5. Local Streets that carry less than 500 vehicles per day are candidates for shared street treatments in lieu of this process

FIGURE 33: ACCEPTABLE MAJOR COLLECTOR TYPICAL CROSS-SECTION

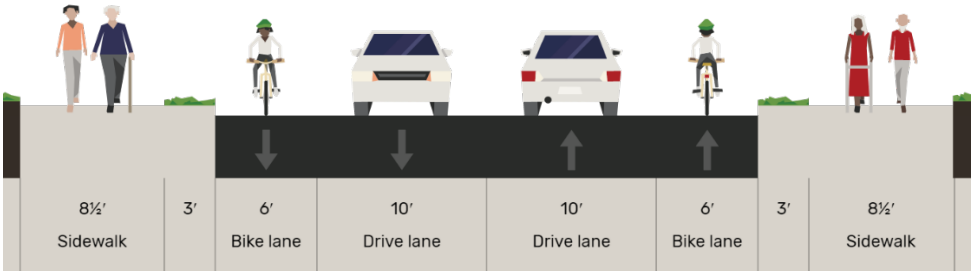


FIGURE 34: ACCEPTABLE NEIGHBORHOOD COLLECTOR TYPICAL CROSS-SECTION

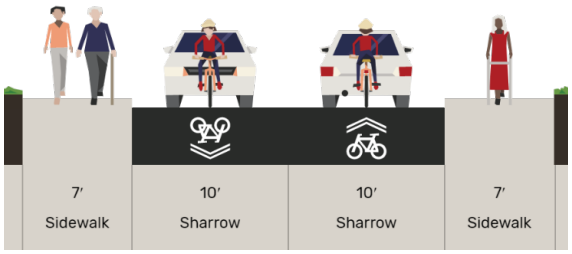


FIGURE 35: ACCEPTABLE LOCAL STREET TYPICAL CROSS-SECTION – PARKING ONE SIDE ONLY

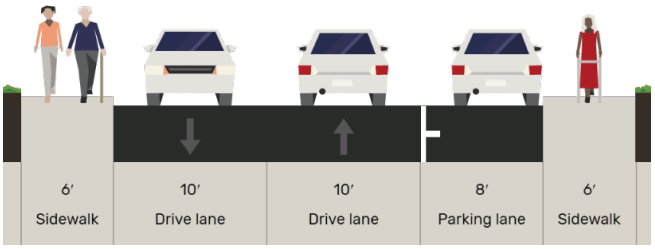


FIGURE 36: ACCEPTABLE LOCAL STREET TYPICAL CROSS-SECTION – NO PARKING

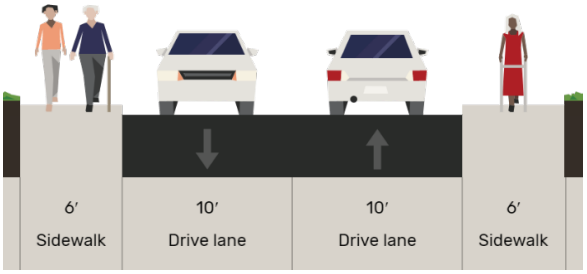
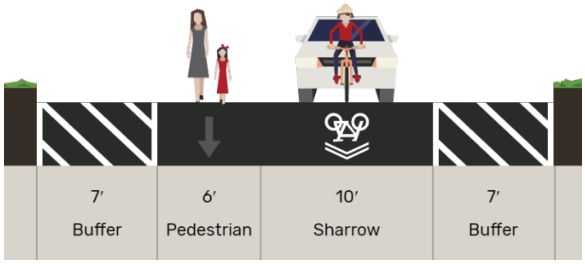


FIGURE 37: ACCEPTABLE LOCAL STREET TYPICAL CROSS-SECTION – SHARED STREET



SEPARATED PEDESTRIAN AND BICYCLE FACILITIES

Some pedestrian and bicycle facilities may be separated from the right-of-way of a street. These facilities include pedestrian trails, pedestrian and bicycle accessways, and shared use paths. These facilities serve a variety of recreation and transportation needs for pedestrians and bicyclists.

PEDESTRIAN TRAIL

Pedestrian trails are typically located in parks or natural areas and provide opportunities for both pedestrian circulation and recreation. They are recommended to include a minimum width of 5 feet (see Table 8) and may include a hard or soft surface.

ACCESSWAY

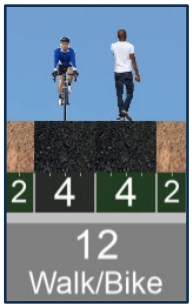
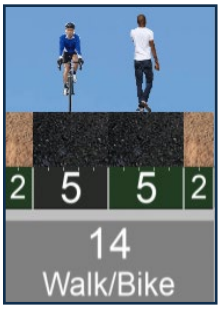
Accessways provide short path segments between disconnected streets or localized recreational walking and biking opportunities. Accessways must be on public easements or rights-of-way and have minimum paved surface of 8 feet, with a 2-foot shoulder on each side, and 12 feet of right-of-way. Accessways should be provided in any locations where the length between existing pedestrian and bicycle connections exceeds the maximum allowable length identified in Table 8.

SHARED USE PATH

Shared use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and citywide circulation needs. Shared use path designs vary in surface types and widths. Hard surfaces are generally better for bicycle travel. Widths need to provide ample space for both walking and biking and should be able to accommodate maintenance vehicles.

A shared use path should be at least 10 feet wide, with a 2-foot shoulder on each side, and 14 feet of right-of-way (see Table 8). In areas with significant walking or biking demand (e.g., Nye Beach Area, Oregon Coast Bike Route) or on ODOT facilities, that path should be 12 feet wide, with a 2-foot shoulder on each side and a total right-of-way of 16 feet (see Table 8). A shared use path may be narrowed to 8 feet over short distances to address environmental or right-of-way constraints.

TABLE 8: SEPARATED PEDESTRIAN AND BICYCLE FACILITIES PREFERRED DESIGNS

FACILITY OPTIONS	PEDESTRIAN TRAIL DESIGN	ACCESSWAY DESIGN	TYPICAL SHARED USE PATH DESIGN	HIGH-DEMAND SHARED USE PATH DESIGN[1]
PREFERRED CONFIGURATION				

Notes:

1. High-demand shared use path is required parallel to ODOT facilities and in other areas with significant walking or biking demand (e.g., Nye Beach Area, Oregon Coast Bike Route)

VEHICLE MOBILITY STANDARDS

Mobility standards for streets and intersections in Newport provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur. Two common methods currently used in Oregon to gauge traffic operations for motor vehicles are volume to capacity (v/c) ratios and level of service (LOS), described below. Vehicle miles travelled (VMT) is a new mobility standard that is currently being considered by Oregon, but there is currently no guidance or legislation for its implementation. VMT provides a more comprehensive look at transportation impacts by encouraging compact development that supports active transportation and transit, over traditional vehicle mobility standards which can encourage developments on the periphery of urban areas. In the future, Newport should consider implementing a VMT mobility standard if additional guidance for implementation is provided by ODOT at that time.

- Volume-to-capacity (v/c) ratio: A v/c ratio is a decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. The ratio is the peak hour traffic volume divided by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. A ratio approaching 1.00 indicates increased congestion and reduced performance.
- Level of service (LOS): LOS is a "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay is excessive, and demand exceeds capacity, typically resulting in long queues and delays.

City street performance standards for motor vehicles are shown in Table 9.

TABLE 9: VEHICLE MOBILITY STANDARDS FOR CITY STREETS

INTERSECTION TYPE	MOBILITY STANDARD	REPORTING MEASURE
SIGNALIZED	LOS D and v/c ≤0.90	Intersection
ALL-WAY STOP OR ROUNDABOUTS	LOS D and v/c ≤0.90	Worst Approach
TWO-WAY STOP [1]	LOS E and v/c ≤0.95	Worst Major Approach/ Worst Minor Approach

Notes:

1. Applies to approaches that serve more than 20 vehicles; there is no standard for approaches serving lower volumes.

State facilities must comply with the existing mobility targets included in the Oregon Highway Plan and shown in Table 10. Alternative mobility targets have previously been adopted on US 101 in

South Beach, and because constraints make meeting mobility targets along US 101 (north of Yaquina Bay) and US 20 impractical, the TSP also recommends that the OTC adopt alternative mobility targets for these highway segments. Technical Memorandum #11 in the Appendix includes the full discussion of this recommendation.

TABLE 10: EXISTING MOBILITY TARGETS FOR US 20 AND US 101

ROADWAY	EXTENTS	ADOPTED V/C MOBILITY TARGET	
		SIGNALIZED	UNSIGNALIZED[1]
US 101	North Urban Growth Boundary to NE 20th Street	≤ 0.80	≤ 0.80/0.90
US 101	NE 20th Street to SE 40th Street[2]	≤ 0.90 except US 101/SE 32nd St: ≤0.99 US 101/SE 35th St: ≤0.99	≤ 0.90/0.95
US 101	SE 40th Street to south Urban Growth Boundary[2]	≤ 0.80 except US 101/SE 40th St: ≤0.99 US 101/SE 50th St: ≤0.85 US 101/South Beach State Park Entrance: ≤0.85	≤ 0.80/0.90
US 20	Urban Growth Boundary to Moore Drive	≤ 0.80	≤ 0.80/0.90
US 20	Moore Drive to US 101	≤ 0.85	≤ 0.85/0.95

Notes:

1. For unsignalized intersections, the mobility target is listed for major approach/minor approach.
2. Alternative mobility targets have been adopted in South Beach.

MULTIMODAL CONNECTIVITY

Transportation facility and access spacing standards include a broad set of techniques that balance the need to provide for efficient, safe, and timely multimodal travel with the ability to allow access to individual destinations. These standards help create a system of direct, continuous, and connected transportation facilities to minimize out-of-direction travel and decrease travel times for all users, while enhancing safety for people walking, biking and driving by reducing conflict points.

Table 11 identifies maximum and minimum public roadway intersection, minimum private access, and maximum pedestrian and bicycle accessway spacing standards for streets in Newport. New streets or redeveloping properties must comply with these standards to the extent practical, as determined by the City Engineer, City Engineer's designee, or Planning Director. As the opportunity arises through redevelopment, streets or driveways not complying with these standards could

improve with strategies such as shared access points, access restrictions (through the use of a median or channelization islands), or closure of unnecessary access points, as feasible.

All Arterial streets in Newport are under State jurisdiction. See the Oregon Highway Plan and Blueprint for Urban Design for spacing standards along US 101 and US 20.

TABLE 11: TRANSPORTATION FACILITY AND ACCESS SPACING STANDARDS

SPACING STANDARD[1]	ARTERIALS[4]	MAJOR COLLECTORS	NEIGHBORHOOD COLLECTORS	LOCAL STREETS
MAXIMUM BLOCK LENGTH (PUBLIC STREET TO PUBLIC STREET)	NA	1,000 feet	1,000 feet	1,000 feet
MINIMUM BLOCK LENGTH (PUBLIC STREET TO PUBLIC STREET)	NA	200 feet	150 feet	125 feet
MAXIMUM LENGTH BETWEEN PEDESTRIAN/BICYCLE CONNECTIONS (PUBLIC STREET TO PUBLIC STREET, PUBLIC STREET TO CONNECTION OR CONNECTION TO CONNECTION)[2]	NA	300 feet	300 feet	300 feet
MINIMUM DRIVEWAY SPACING (DRIVEWAY TO DRIVEWAY)	350-1,320 feet	100 feet	75 feet	N/A
MINIMUM INTERSECTION SET BACK (FULL ACCESS DRIVEWAYS ONLY)[3]	350-1,320 feet	150 feet	75 feet	25 feet
MINIMUM INTERSECTION SET BACK (RIGHT-IN/RIGHT-OUT DRIVEWAYS ONLY)[3]	350-1,320 feet	75 feet	50 feet	25 feet

Notes:

1. All distances measured from the edge of adjacent approaches.
2. Mid-block pedestrian and bicycle connections must be provided when the block length exceeds 300 feet to ensure convenient access for all users. Mid-block pedestrian and bicycle connections must be provided on a public easement or right-of-way every 300 feet, unless the connection is impractical due to topography, inadequate sight distance, high vehicle travel speeds, lack of supporting land use or other factors that may prevent safe crossing. When the block length is less than 300 feet, mid-block pedestrian and bicycle connections are not required.
3. A property must construct access to a lower classified roadway, where possible
4. All Arterial streets in Newport are under ODOT jurisdiction. ODOT facilities are subject to access spacing guidelines in the Oregon Highway Plan (see Table 14 of Appendix C) and the Blueprint for Urban Design which vary based on posted speed and urban context

LIFELINE ROUTES

Newport's location on the Oregon Coast makes it vulnerable to both earthquakes and tsunamis. Statewide planning efforts have previously identified seismic lifeline routes and tsunami evacuation routes within Newport. The Oregon Seismic Lifeline Routes are a set of streets designated to facilitate emergency response and rapid economic recovery following a disaster. These routes include three tiers of streets, and higher tier routes are prioritized for seismic retrofits on the existing state-owned facilities. Within Newport, US 101 (north of US 20) is a designated Tier 1 lifeline route. Both US 101 (south of US 20) and US 20 are designated Tier 3 lifeline routes. These routes are identified in Technical Memorandum #10 in the Appendix.

While much of Newport is outside of the tsunami hazard area, the beach front, creek drainages, and the south beach area will need to evacuate in the event of a tsunami. The tsunami hazard areas and identified evacuation assembly areas are also identified in Technical Memorandum #10 in the Appendix. Specific evacuation routes for each low-lying area are also available online.

Ensuring the lifeline and evacuation routes serve their intended purpose both during and following a disaster will be critical to ensure public safety and facilitate recovery. This TSP includes projects that promote seismic resilience on lifeline routes, adds pedestrian or bicycle facilities on evacuation routes, and other wayfinding projects.

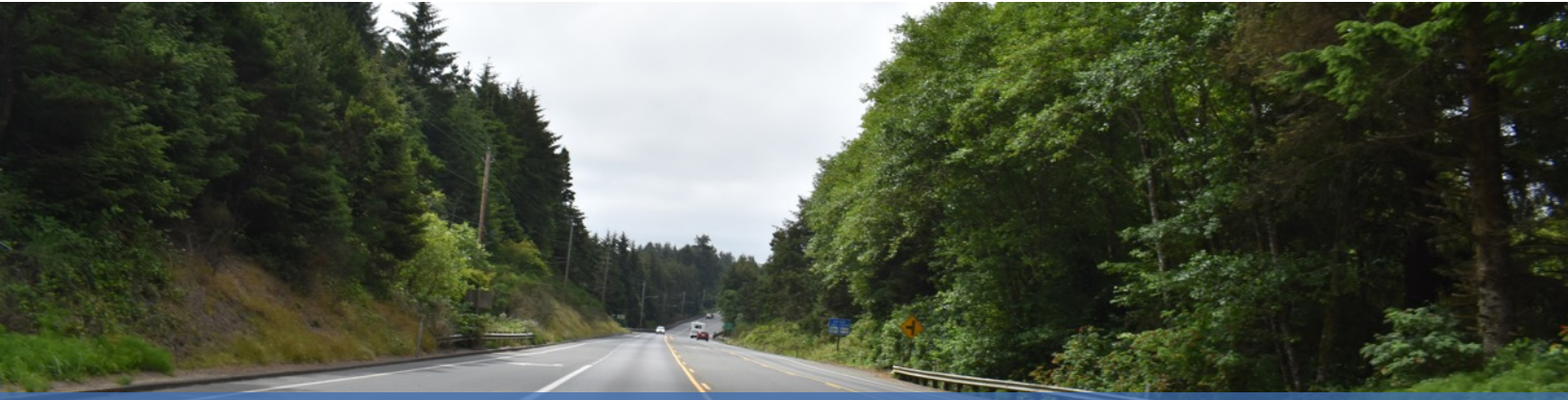
STREET STORMWATER DRAINAGE MANAGEMENT

The City of Newport Municipal Code states that drainage facilities should be designed to consider the capacity and grade necessary to maintain unrestricted flow from areas draining from a new land division and to allow extension of the system to serve such areas.

Newport has neighborhoods with significant stormwater constraints, including Agate Beach, where landslide hazards and coastal erosion are common on the western edge of the neighborhood. As transportation improvements are constructed in Agate Beach, stormwater management will be critical to ensure that runoff from roadway improvements do not contribute to these existing hazards which could result in significant property damage. Potential management strategies could include requiring permeable pavement or bioswales which would hold stormwater prior to infiltration. These solutions could mitigate runoff which could impact the coastal bluffs in this neighborhood.

In addition to the coastal hazards, previous grading practices within the Agate Beach neighborhood could lead to excessive settlement for roadways and pathways due to the nature of the underlying soil. These settlement considerations could require flexible pavement or unimproved roadway/natural surface pathway standards which are more resilient to ground settlement.

Prior to construction of any transportation improvements within the Agate Beach neighborhood, a geotechnical and stormwater investigation will need to be completed to further detail any potential challenges or stormwater concerns for this area. A summary of the specific hazards facing Agate Beach is provided in the Appendix.



Chapter 5: Project Development and Evaluation

This chapter describes the process followed to develop the transportation system improvement projects.

PROCESS FOR DEVELOPING PROJECTS

The project team developed the recommended transportation solutions using guidance provided by the project goals and with input from three main sources:

- Stakeholders (via advisory committee meetings, in-person events, online open houses, community workshops, project website comments, and mail-in survey responses)
- Previous Plans (such as the 2012 Newport Transportation System Plan, Oregon Coast Bike Route Plan, Yaquina Bay State Recreation Site Plan)
- Independent Project Team Evaluation (Technical Memoranda #5 through #8 Existing and Future Transportation Conditions and Needs Evaluation, and Solutions Evaluation)

The full list of projects in this TSP are referred to as Aspirational Projects. Aspirational projects include all identified projects for improving the transportation network along major streets in Newport, regardless of their priority or their likelihood to be funded. This TSP focuses on streets in the City with a vehicle functional classification of Neighborhood Collector and higher. Additional improvements beyond the Aspirational project list will occur with private development in the UGB, including the build out of the local street network consistent with the standards in Chapter 4.

Newport's approach to developing transportation projects emphasized improved system efficiency and management over adding capacity. The approach considered four tiers of priorities that included:

1. Highest Priority – preserve the function of the system through management practices such as improved traffic signal operations, encouraging alternative modes of travel, and implementation of new policies and standards.

2. High Priority – improve existing facility efficiency through minor enhancement projects that upgrade roads to desired standards, fill important system connectivity gaps, or include safety improvements to intersections and corridors.

3. Moderate Priority – add capacity to the system by widening, constructing major improvements to existing roadways, or extending existing roadways to create parallel routes to congested corridors.

4. Lowest Priority – add capacity to the system by constructing new facilities.

The project team recommended higher priority solution types to address identified needs unless a lower priority solution was clearly more cost-effective or better supported the goals and objectives of the City. This process allowed the City to maximize use of available funds, minimize impacts to the natural and built environments, and balance investments across all modes of travel. The TSP planning process screens candidate projects to set aside those that may not be feasible due to environmental or existing development limitations. The remaining projects are a combination of new and previous ideas for the transportation system that seek to address the gaps and deficiencies in the City.

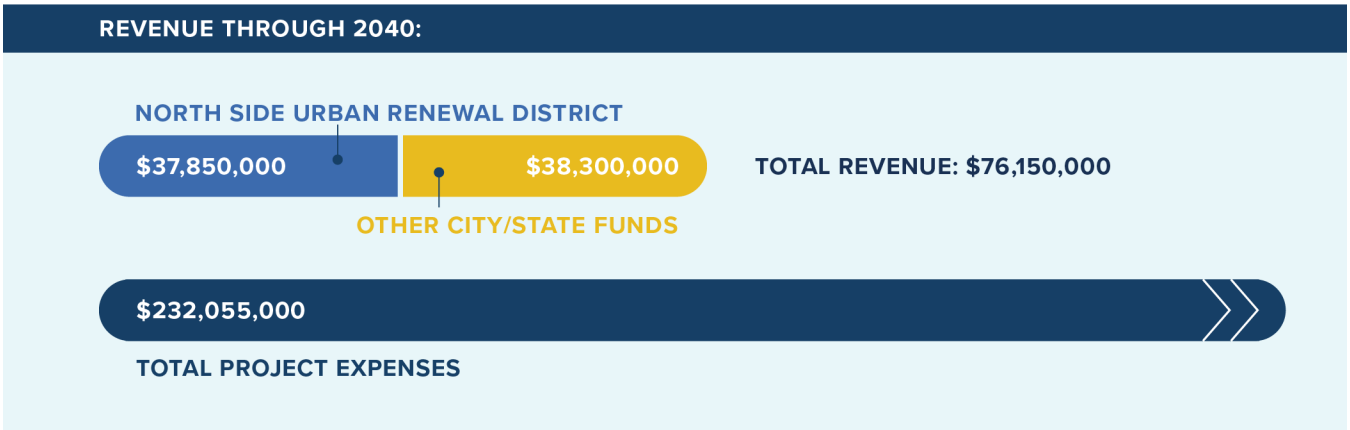
PROJECT FUNDING

Each project was reviewed to consider how it might be funded during the next 20 years. In general, the primary funding agency was assumed to be the current or future facility owner, as they are responsible to oversee construction and long-term maintenance. For the TSP, all projects were assigned to either Newport or the State as the primary funding agency. In some cases, funding partnerships were identified for projects that were expected to provide mutual benefits between agencies or where there were opportunities to accelerate projects to completion. It is important to note that these funding assumptions do not obligate any agency to commit to these projects. Each project was also assigned an assumed funding source, which included the City's North Side Urban Renewal District and other City/State revenue (i.e., State Highway Trust Fund, local gas tax, System Development Charges, etc.).

This TSP presents the high priority City projects that are constrained to a level of funding that is expected to be available for the next 20 years. While there may be other partnering opportunities with ODOT and Lincoln County Transit, these decisions are ultimately up to those agencies. Private development will also likely build TSP projects in coordination with land use actions and future development in the City. While projects related to property development or re-development may occur within the TSP planning horizon, no funding was assumed from current City revenue sources since these projects will not be needed until the fronting development occurs. If the City chooses to update the local system development charge for transportation in the future, much of the private development share will likely be included in that fee.

Based on historical and forecasted funding levels, the City expects to have about $76 million through the year 2040 for transportation projects in this TSP (see Figure 38). This includes about $38 million for projects in the North Side Urban Renewal District boundary and another $38 million from other City and State funding sources for other citywide projects. This is far below the funding required to implement all the projects in this plan, which total approximately $232 million, but may be sufficient to advance many of the higher priority projects in the City. The City may consider increasing existing fee levels, or adding new funding options to close these gaps and better prepare

FIGURE 38: EXPECTED TRANSPORTATION FUNDING COMPARED TO PROJECT EXPENSES



SPECIAL STUDIES

A series of special transportation studies were conducted as part of the TSP. The detailed evaluation process considered solutions along US 101 and US 20 in the downtown area, as well as a possible Harney Street extension to establish a new circulation route through the east end of the City between US 20 and US 101, near NE 36th Street. These solutions are large-scale capital investments that could significantly alter Newport's transportation network and travel patterns by increasing roadway capacity and constructing enhanced bicycle and pedestrian facilities. Other low-cost transportation strategies were also considered to manage congestion at all highway intersections. The following sections summarize results of each special transportation study, including factors like the available right-of way or environmental constraints which could impact implementation.

US 101 CIRCULATION OPTIONS

US 101 serves residents and visitors travelling along the Oregon Coast or within Newport. The highway, today, cuts through downtown Newport and creates a significant barrier for travel within the downtown core. High vehicle volumes on US 101 lead to significant congestion and delay on US 101 which limits access to existing local businesses and the hospital and fosters an auto-oriented downtown area. Limited existing right-of-way means that most of the roadway space is allocated to vehicle travel lanes with narrow sidewalks, narrow on-street parking, and no bicycle facilities. These characteristics limit economic development and tourism opportunities relative to other areas of the City.

Three circulation options were considered for US 101 as part of the TSP. The first option maintains the existing alignment of US 101 in downtown Newport but includes several streetscape alternatives to enhance the bicycle or pedestrian environment and increase business visibility. Two

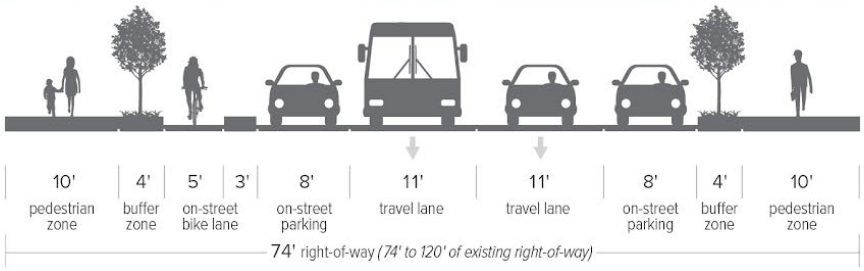
couplet options were also considered, either between SW Bayley Street and SW Angle Street or between SW Abbey Street and SW Angle Street. Both couplet options place northbound traffic on SW 9th Street while southbound traffic remains on the existing alignment of US 101. Converting US 101 to a couplet increases the total available right-of-way and allows wider sidewalks with protected bike facilities to be implemented along the corridor. These options also increase the total number of properties that front US 101 which may increase economic development opportunities for downtown Newport although extending the southern extent of the couplet to SW Bayley Street may reduce hospital access.

Each circulation option was evaluated both quantitatively and qualitatively for their impact on pedestrian travel, bicycle travel, vehicle operations, hospital access, economic redevelopment opportunities, streetscape opportunities, and cost. These options were also presented to the public at a series of online open houses and advisory committee meetings to gain consensus on the desired approach to circulation for US 101. Through the evaluation process, a couplet on US 101 between SW Abbey Street and SW Angle Street, seen below in Figure 39, emerged as the preferred alternative. A summary of the full evaluation for each US 101 circulation option is included in the appendix.

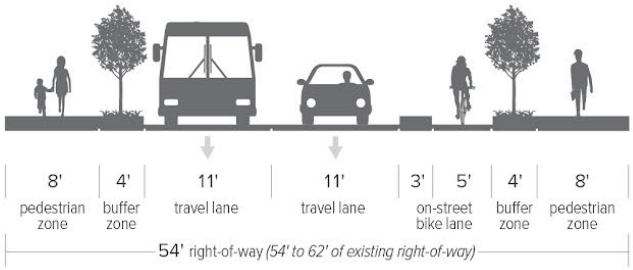
Constructing a couplet on US 101 between SW Abbey Street and SW Angle Street better manages traffic volumes on US 101 while also improving the bicycle and pedestrian environment and supporting economic development. Converting US 101 to one-way will address the existing delay and congestion issues at US 101/SW Hurbert Street and can better utilize the existing right-of-way, allowing for both wider sidewalks and protected bicycle facilities along the highway. While beginning the couplet at SW Abbey Street rather than SW Bayley Street marginally reduces the economic development potential, this alternative maintains the existing hospital access from SW 9th Street which is important for emergency response. This couplet option will impact existing properties, as seen below in Figure 39.

FIGURE 39: PREFERRED US 101 CIRCULATION OPTION

1 US 101 CROSS-SECTION SOUTHBOUND



2 SW 9TH STREET CROSS-SECTION NORTHBOUND



US 20 CIRCULATION OPTIONS

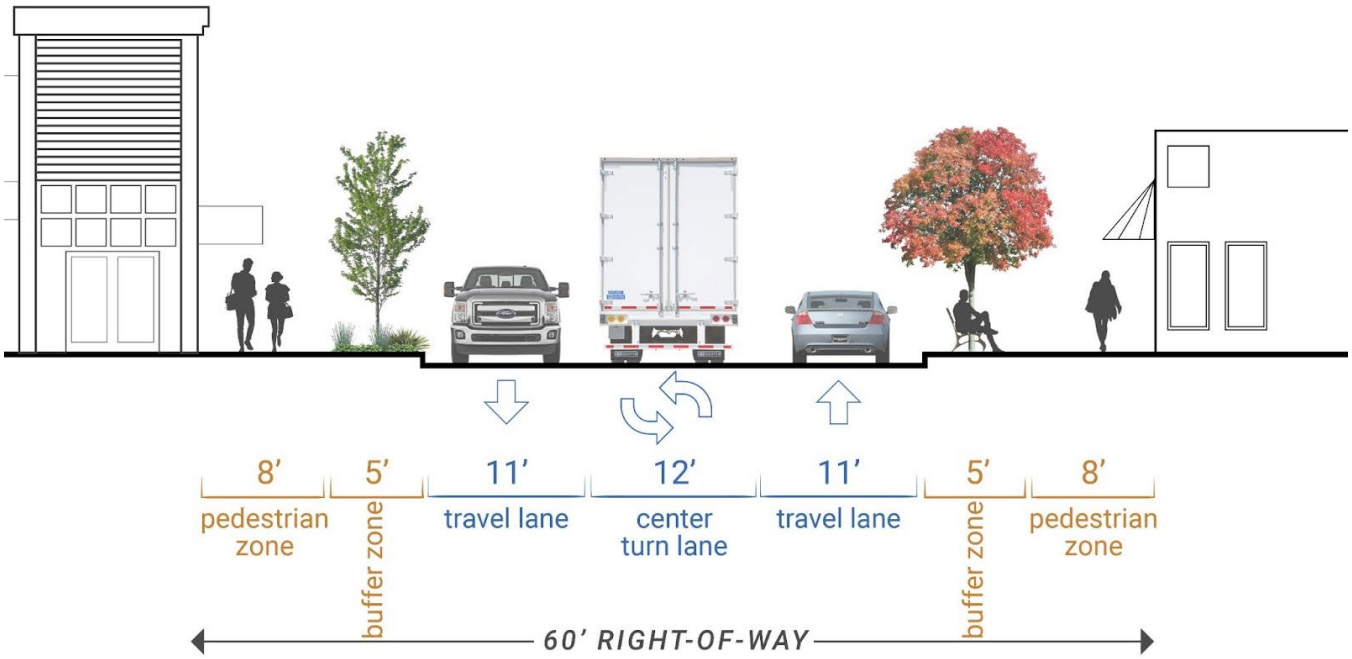
US 20 is the primary route that connects Newport east to Corvallis and other regional destinations along I-5. The existing three-lane section leads to significant congestion in the summer for traffic entering Newport that must turn at the US 101/US 20 intersection. The long vehicle queues approaching the US 101/US 20 signal reduce business access and increase delay for the existing, unsignalized intersections along US 20. Congestion on US 20 coupled with limited right-of-way and poor multimodal facilities also creates significant challenges for all users. Today, there are only narrow, curb-tight sidewalks for a portion of the corridor, no bicycle facilities, and limited opportunities for future widening to relieve congestion.

Two circulation options were considered for US 20 as part of the TSP. The first option maintains the existing alignment of US 20 in downtown Newport but includes several streetscape alternatives to enhance the bicycle or pedestrian environment. The second option constructs a couplet on US 20 between NE Harney Street/SE Moore Drive and US 101. This option would place westbound traffic on NE 1st Street while eastbound traffic would remain on the existing alignment of US 20; US 20 westbound would tie back into the existing alignment prior to the US 101/US 20 intersection. Converting US 20 to a couplet increases the total available right-of-way and allows wider sidewalks with protected bike facilities to be implemented along the corridor. This option also increases the total number of properties that front US 20 which may increase economic development opportunities for downtown Newport although US 20 is located outside of Newport's historic downtown core.

The circulation options were evaluated both quantitatively and qualitatively for their impact on pedestrian travel, bicycle travel, vehicle operations, economic redevelopment opportunities, streetscape opportunities, and cost. These options were also presented to the public at a series of online open houses and advisory committee meetings to gain consensus on the desired approach to circulation for US 20. Through the evaluation process, maintaining two-way traffic on US 20, seen below in Figure 40, emerged as the preferred alternative. A summary of the full evaluation for each US 20 circulation option is included in the appendix.

Improving the existing streetscape on US 20 will improve the bicycle and pedestrian environment at a comparably low cost. Although a couplet would increase vehicle capacity on US 20, the right-of-way needed to upgrade NE 1st Street and implement improvements at the US 101/US 20 signal outweigh the potential benefits of a couplet. Retaining the existing alignment of US 20 can improve the bicycle and pedestrian environment while minimizing the negative impacts to the surrounding residential neighborhood.

FIGURE 40: PREFERRED US 20 CIRCULATION OPTION



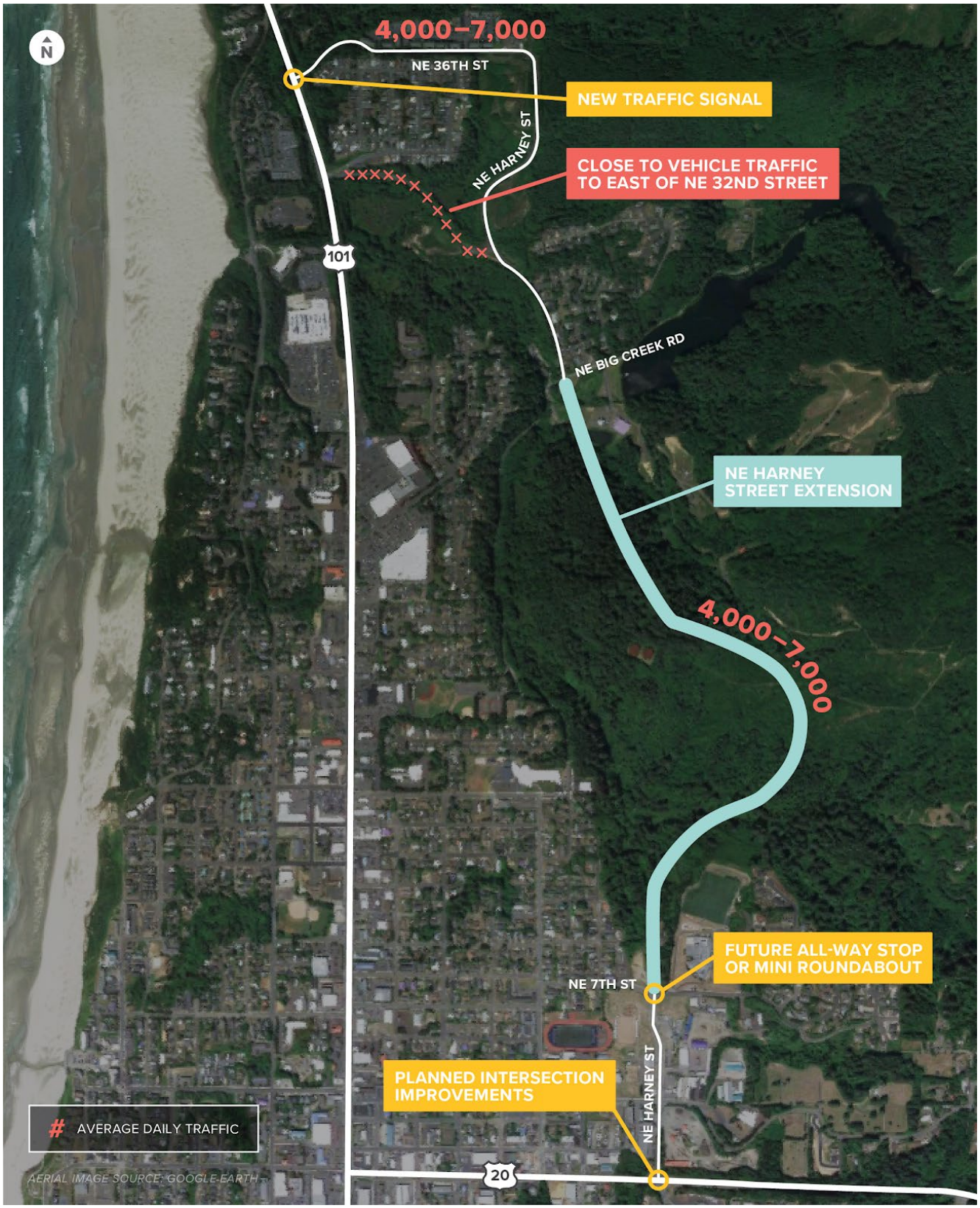
HARNEY STREET EXTENSION

Newport does not have a parallel route on the east side of US 101 to connect northern areas of the city to the downtown core, so residents must travel on US 101 to access goods and services. The Harney Street Extension proposes a new minor arterial road between NE 7th Street and NE Big Creek Road before connecting to US 101 at the proposed NE 36th Street traffic signal. This extension will provide a continuous connection between US 20 and NE 36th Street with limited access to amenities along US 101 north of NE 7th Street and allow residents to bypass some of the most congested segments of US 101. The Harney Street extension will also provide a critical connection to serve future growth in this area.

The Harney Street extension was previously identified in long-range transportation plans, but this special study included additional refinement to understand the costs and benefits of this improvement. Figure 41 illustrates the refined project concept. The extension was evaluated both quantitatively and qualitatively for its impact on pedestrian travel, bicycle travel, vehicle operations, and cost.

Due to the limited access to amenities along US 101 in Newport from the Harney Street extension, this road will primarily serve regional traffic travelling between US 20 and US 101 to the north of Newport along with future residential growth that is projected to occur along the proposed alignment. Between 4,000 and 7,000 vehicles are expected to use this extension by 2040 which will provide only modest relief for congestion on US 101 in Newport. However, this street extension will include enhanced pedestrian and bicycle facilities which will connect to Newport's planned bicycle network, significantly enhancing bicycle travel. The Harney Street extension will enhance local circulation for Newport although the high project cost makes this a lower priority improvement for Newport.

FIGURE 41: HARNEY STREET EXTENSION CONCEPTUAL ALIGNMENT



ALTERNATIVE HIGHWAY MOBILITY TARGETS

Assuming Newport grows in accordance with its current adopted land use plan and travelers continue to rely heavily on private autos for their trips, roadways in the City will not be able to meet ODOT's v/c ratio-based mobility targets in the Oregon Highway Plan. In this situation (which is common in communities with roadways that experience high travel demands), adoption of alternative mobility targets is appropriate. Alternative mobility targets reflect realistic expectations for roadway performance at the end of the 20-year planning horizon, based on traffic projections. Adopting realistic alternative targets relieves the state and local governments from having to limit development or make investments to comply with targets they cannot possibly achieve.

The proposed alternative mobility targets north of the Yaquina Bay Bridge will raise the v/c target to 0.99, which is the same level used in the South Beach area of US 101. In addition, the operations calculation considers the full peak hour rather than just the highest 15-minutes which allows moderately more delay than current methods. The Alternative Mobility Targets Technical Memorandum (included in Appendix) documents the need for developing alternative mobility targets for US 101 and US 20 through Newport and describes the recommended new targets.

Chapter 6: Projects and Priorities

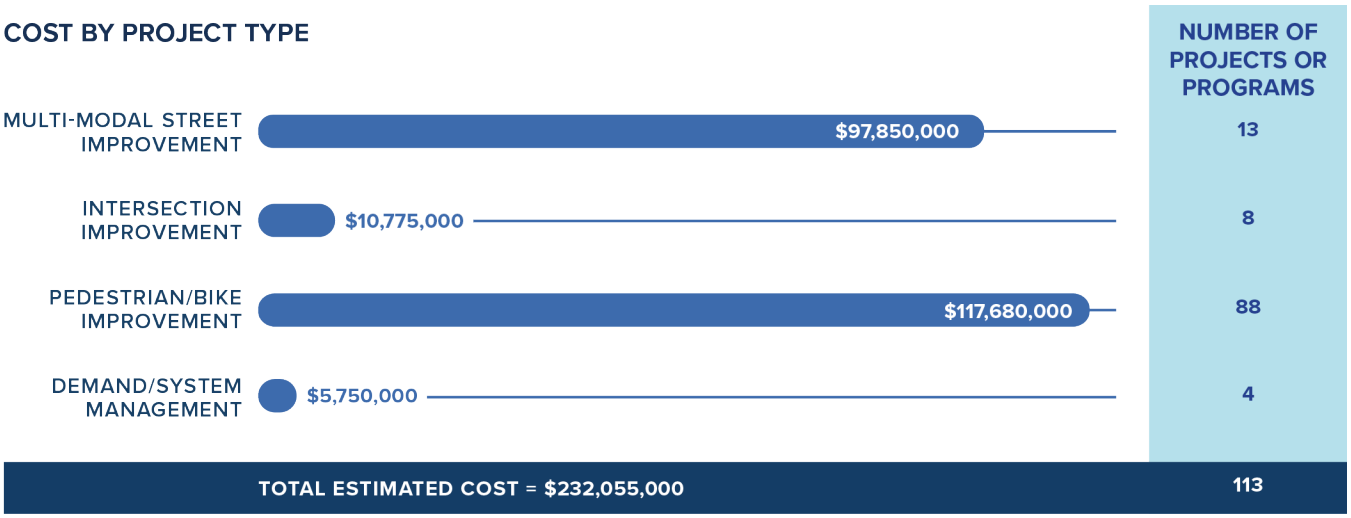
This chapter describes the transportation system improvement projects identified to address the system needs discussed in Chapter 3.

ASPIRATIONAL PROJECTS

The full aspirational list includes 113 projects totaling over $232 million in total investments (see Figure 42). For the purposes of cost estimates, project design elements are identified, however, the actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process and are subject to City, ODOT and/or other partner agency approval. The Aspirational projects were assigned to one of several categories:

- **Multi-Modal Street Improvement** – these projects will improve or construct new multi-modal streets throughout the UGB, each with facilities for motorists, pedestrians and bicyclists. The TSP includes a total of 13 projects that, as of 2021, will cost an estimated $98 million to complete.
- **Intersection Improvement** – these projects will improve safety and mobility at intersections throughout the UGB. A total of eight projects were identified to construct new or improve existing intersections that, as of 2021, will cost an estimated $11 million to complete.
- **Pedestrian/ Bike Improvement** – these projects include stand-alone sidewalk, path and roadway crossing improvements, and an integrated network of bicycle lanes, marked on-street routes and shared-use paths to facilitate safe and convenient travel citywide. A total of 88 pedestrian and bicycle projects were identified that, as of 2021, will cost an estimated $118 million to complete.
- **Demand/ System Management** – these projects will encourage more efficient usage of the transportation system. The TSP includes four projects that, as of 2021, will cost an estimated $6 million.

FIGURE 42: LEVEL OF INVESTMENT BY MODE OF TRAVEL



PRIORITIZING PROJECTS

Unless the City expands its funding options, most of the Aspirational projects identified are not reasonably likely to be funded by 2040. For this reason, projects from the Aspirational list were evaluated and ranked using a set of evaluation criteria that reflect how well it achieves the transportation goals and objectives described in Chapter 2. The prioritization score was calculated for each project using the criteria associated with each TSP goal.

The projects were initially given a score of 1 (one) for each of the 13 criteria it addressed. The criteria were weighted equally, resulting in overall possible scores ranging from 0 to 13. Projects were then assigned an evaluation rank of "high" for projects with the highest total scores, "medium" for the middle one-third of project scores, and "low" for projects with the lowest total scores. The methodology for calculating the scores for each criterion can be found in Technical Memorandum #8 in the Appendix.

The final priority ranks listed in Table 12 were used to divide projects from the Aspirational project list into two improvement packages, referred to as Financially Constrained and Unconstrained. The project priority rankings do not create an obligation to construct projects in any order and it is recognized that these priorities may change over time. The City of Newport will use the priorities listed in this TSP to guide investment decisions but will also regularly reassess local priorities to leverage new opportunities and reflect evolving community interests.

The City is not required to implement projects identified on the Financially Constrained list first. Priorities may change over time and unexpected opportunities may arise to fund particular projects. The City is free to pursue any of these opportunities at any time. The purpose of the Financially Constrained project list is to establish reasonable expectations for the level of improvements that will occur and give the City initial direction on where funds should be allocated.

FINANCIALLY CONSTRAINED PROJECTS

Financially Constrained projects are the most valued, in terms of how they meet critical needs and how well they work to deliver on community goals. Projects in this group have a total construction budget that is similar to the reasonably available funding over the planning horizon, meaning the $76 million that is likely to be available through existing City and State funding sources. The projects included in the Financially Constrained list are shown in Table 12 and Figure 43, Figure 44 and Figure 45. These projects were grouped within the following priority horizons, based on the project evaluation score:

- **Tier 1:** Projects recommended for implementation within 1 to 10 years.
- **Tier 2:** Projects likely to be implemented beyond 10 years.

UNCONSTRAINED PROJECTS

Unconstrained projects are those remaining from the Aspirational list that likely will not include funding by 2040. The projects included in the Unconstrained list are shown in Table 12 and Figure 43, Figure 44 and Figure 45. These projects were grouped within the following priority horizons, based on the project evaluation score:

- **Unconstrained Tier 1:** Projects with the highest priority for implementation beyond the projects included on the Financially Constrained list, should additional funding become available.
- **Unconstrained Tier 2:** The last phase of projects to be implemented, should additional funding become available.

FIGURE 43: FINANCIALLY CONSTRAINED AND UNCONSTRAINED PROJECTS (NORTH)

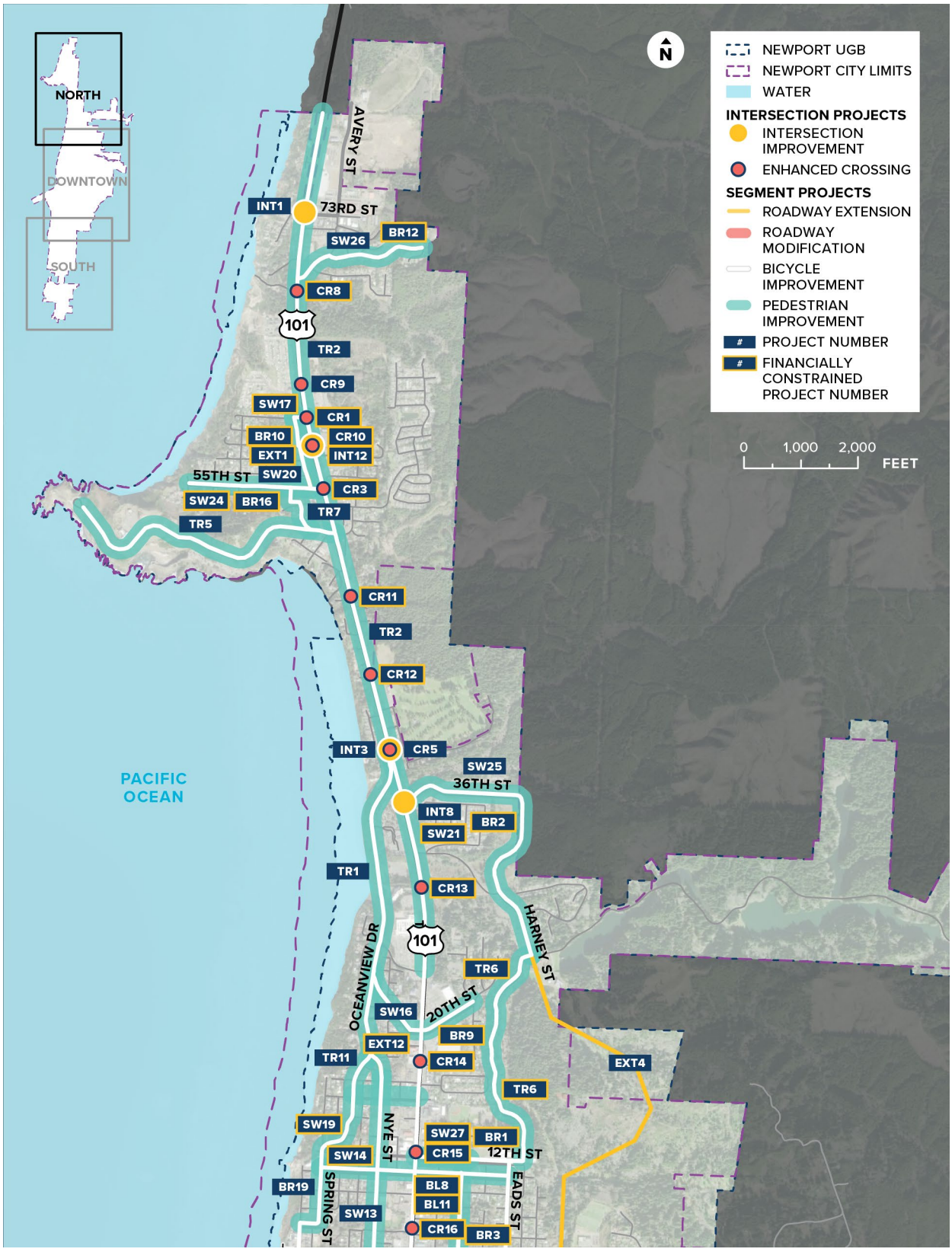


FIGURE 44: FINANCIALLY CONSTRAINED AND UNCONSTRAINED PROJECTS (DOWNTOWN)

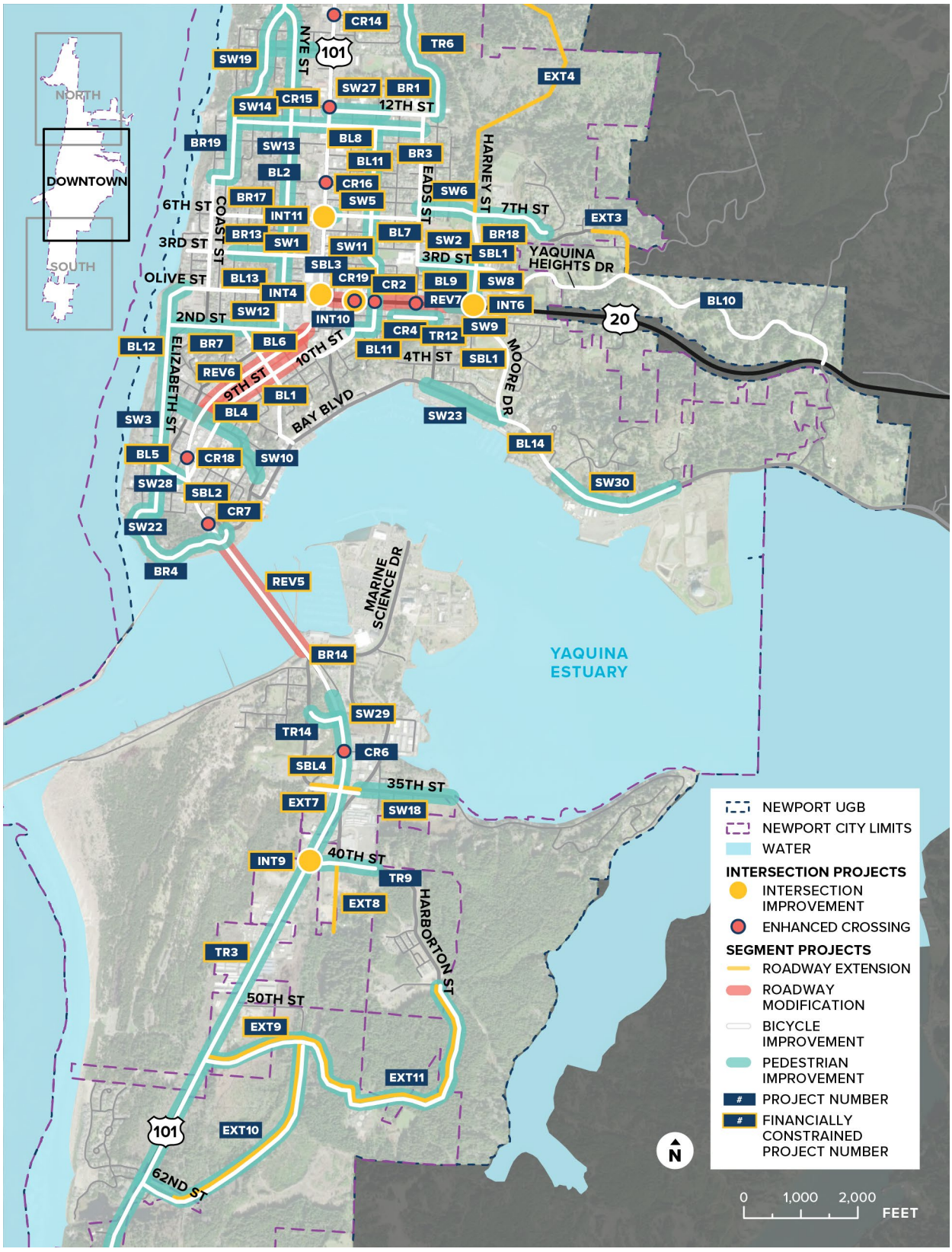


FIGURE 45: FINANCIALLY CONSTRAINED AND UNCONSTRAINED PROJECTS (SOUTH)

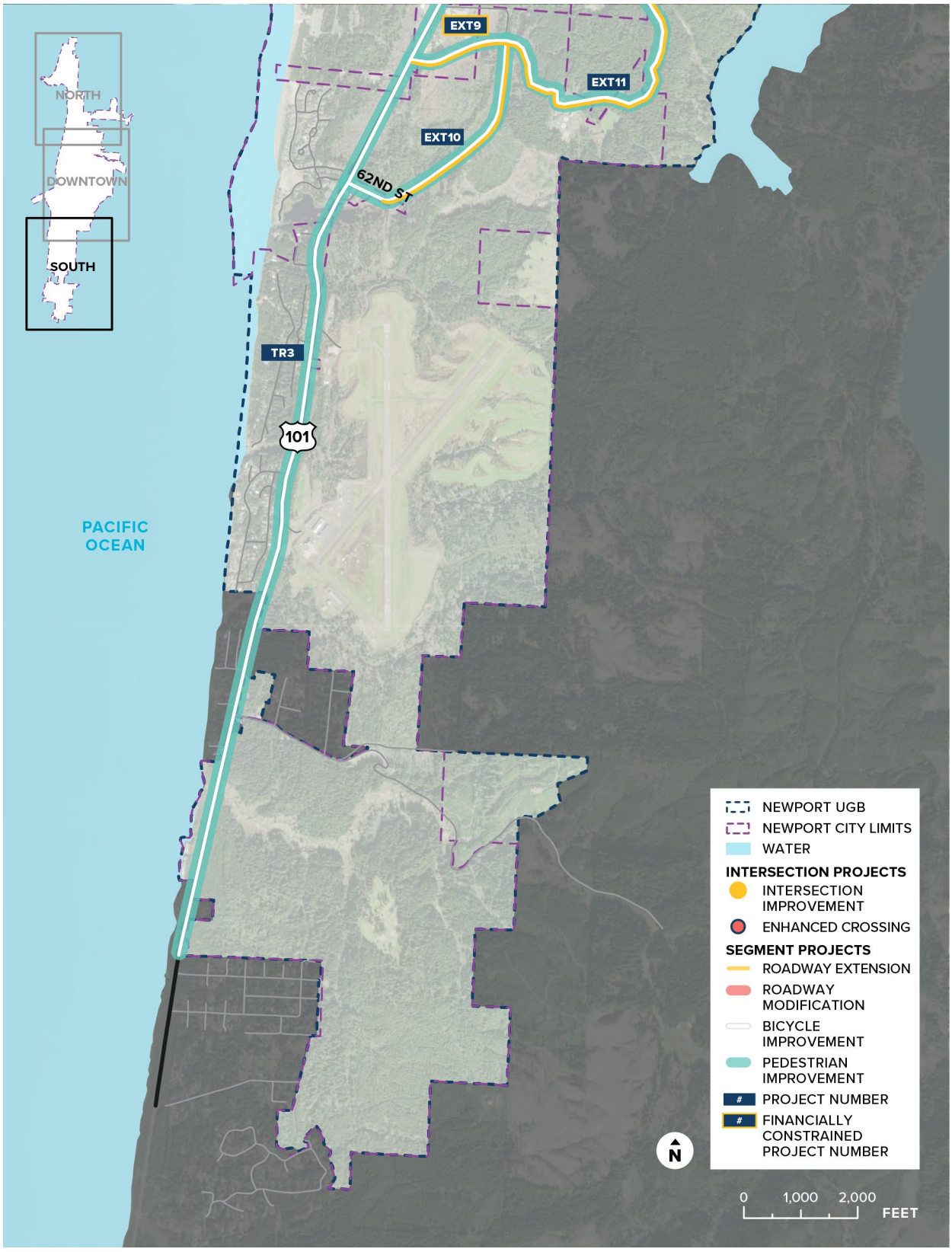


TABLE 12: FINANCIALLY CONSTRAINED AND UNCONSTRAINED PROJECTS

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
INT1	**US 101/NE 73rd Street** Complete an intersection control evaluation: either a traffic signal or roundabout are potential solutions	State	City/State Funds	$950,000	Low	Unconstrained	Unconstrained Tier 2	North
INT3	**US 101/NW Oceanview Drive** Widen the eastbound NW Oceanview Drive approach to include separate left and right turn lanes	State	City/State Funds	$225,000	Low	Unconstrained	Unconstrained Tier 2	North
INT4A	**US 101/US 20** Install advance signage to detour westbound right turning vehicles onto NE 1st Street	State	NURA	$2,025,000	High	Financially Constrained	Tier 1	Downtown
INT4B	**US 101/US 20** Construct a second southbound left turn lane	State	NURA	$3,000,000 to $5,000,000	Low	Unconstrained	Unconstrained Tier 2	Downtown
INT6	**US 101/SE Moore Drive/NE Harney Street** Complete an intersection control evaluation: either a traffic signal (with separate left turn lanes on the northbound and southbound approaches) or a roundabout are potential solutions	State	NURA	$475,000	Medium	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
INT8	**US 101/NE 36th Street** Complete an intersection control evaluation: either a traffic signal (with separate left and right turn lanes for westbound traffic) or roundabout are potential solutions. Note: this project will only be completed in coordination with the Harney Street extension (EXT4)	State	City/State Funds	$1,175,000	Low	Unconstrained	Unconstrained Tier 2	North
INT9	**US 101/SW 40th Street** Complete an intersection control evaluation: either a traffic signal or roundabout are potential solutions	State	Funded	$3,225,000	Medium	Financially Constrained	Tier 1	Downtown
INT10	**US 20/Benton Street** Restripe northbound approach to include a right turn pocket (project removes on-street parking)	State	NURA	$75,000	Low	Unconstrained	Unconstrained Tier 2	Downtown
INT11	**US 101/NW 6th Street** Realign intersection	State	City/State Funds	$2,625,000	Low	Financially Constrained	Tier 2	Downtown
INT12	**US 101/NE 57th Street** Realign approach to align with NW 58th Street	State	City/State Funds	$200,000	Low	Financially Constrained	Tier 2	North
EXT1	**NW Gladys Street**	Newport	City/State Funds	$1,350,000	Low	Financially Constrained	Tier 2	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	Extend NW Gladys Street to create a continuous neighborhood collector street							
EXT3	**NE 6th Street (from NW 55th Street to NW 60th Street)** Extend NE 6th Street to create a continuous neighborhood collector	Newport	City/State Funds	$6,400,000	Low	Unconstrained	Unconstrained Tier 2	Downtown
EXT4	**NE Harney Street (from NE 7th Street tot NE Big Creek Road)** Extend NE Harney Street to a create a continuous major collector street and install a mini roundabout (i.e., roundabout with a mountable center island to accommodate school buses or large trucks) at the intersection of NE Harney Street/NE 7th Street	Newport	City/State Funds	$58,600,000	High	Unconstrained	Unconstrained Tier 1	North, Downtown
EXT7	**SW 35th Street (from SW Abalone Street to SE Ferry Slip Road)** Extend SW 35th Street to create a continuous major collector street and construct a shared use path on one side only	Newport	City/State Funds	$800,000	High	Financially Constrained	Tier 1	Downtown
EXT8	**SE Ash Street (from SE 40th Street to SE 42nd Street)**	Newport	City/State Funds	$1,825,000	Low	Financially Constrained	Tier 2	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	Extend SE Ash Street to create a continuous major collector street							
EXT9	**SE 50th Street (from US 101 to SE 50th Place)** Realign SE 50th Street south to create a continuous major collector street between the existing alignment and the entrance to South Beach State Park and construct a shared use path on one side only	Newport	City/State Funds	$1,925,000	High	Financially Constrained	Tier 1	Downtown, South
EXT10	**SE 62nd Street (from end to SE 50th Street)** Extend SE 62nd Street north to create a continuous major collector street between the existing terminus and SE 50th Street and construct a shared use path on one side only	Newport	City/State Funds	$6,150,000	High	Unconstrained	Unconstrained Tier 1	Downtown, South
EXT11	**SE 50th Street (from SE 62nd Street to SE Harborton)** Extend SE 50th Street to create a continuous major collector street between the SE 50th/SE 62nd intersection and SE Harborton Street and construct a shared use path on one side only	Newport	City/State Funds	$0	High	Unconstrained	Unconstrained Tier 1	Downtown, South

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
EXT12	**NW Nye Street (from NW Oceanview Drive to NW 15th Street)** Extend NW Nye Street to create a continuous neighborhood collector street between NW Oceanview Drive and NW 15th Street	Newport	City/State Funds	$1,900,000	Medium	Financially Constrained	Tier 1	North, Downtown
REV5	**Yaquina Bay Bridge Refinement Plan** Conduct a study to identify the preferred alignment of a replacement bridge, typical cross-section, implementation, and feasibility, and implement long-term recommendations from the Oregon Coast Bike Route Plan	State	City/State Funds	$500,000	High	Financially Constrained	Tier 1	Downtown
REV6	**US 101 and SW 9th Street** Convert US 101 to a one-way couplet system between SW Abbey Street and SW Angle Street. Northbound US 101 will be shifted to SW 9th Street while southbound US 101 will remain on the existing alignment of US 101. Project assumes cross-sections as identified in Chapter 5 of the Newport Transportation System Plan. Intersection improvements and crossing enhancements will	State	NURA	$11,700,000	High	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	be identified during design phase of project.							
REV7	**US 20 Streetscape Improvements** Upgrade existing street cross-section to include pedestrian and bicycle amenities. Project assumes cross-sections as identified in Chapter 5 of the Newport Transportation System Plan.	State	NURA	$6,500,000	High	Unconstrained	Unconstrained Tier 1	Downtown
SW1	**NW 3rd Street** Complete existing sidewalk gaps using either standard sidewalk or restripe to provide a designated pedestrian walkway in-street	Newport	City/State Funds	$1,950,000	Low	Financially Constrained	Tier 2	Downtown
SW2	**NE 3rd Street** Complete existing sidewalk gaps	Newport	City/State Funds	$1,075,000	Low	Financially Constrained	Tier 2	Downtown
SW3	**SW Elizabeth Street** Complete existing sidewalk gaps	Newport	City/State Funds	$2,825,000	Low	Unconstrained	Unconstrained Tier 2	Downtown
SW5	**NE 6th Street** Complete existing sidewalk gaps (project will impact off-street parking)	Newport	NURA	$25,000	Medium	Financially Constrained	Tier 1	Downtown
SW6	**NE 7th Street** Complete existing sidewalk gaps	Newport	City/State Funds	$3,200,000	Low	Financially Constrained	Tier 2	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
SW8	**NE Harney Street** Complete existing sidewalk gaps	Newport	NURA	$900,000	Low	Financially Constrained	Tier 2	Downtown
SW9	**US 20** Complete existing sidewalk gaps	State	NURA	$725,000	Medium	Financially Constrained	Tier 1	Downtown
SW10	**SW Abbey Street/SW Harbor Way** Complete existing sidewalk gaps. Sidewalk gaps may be completed on one side only in areas with significant topography	Newport	City/State Funds	$2,375,000	Low	Unconstrained	Unconstrained Tier 2	Downtown
SW11	**SE Benton Street/SE 2nd Street/SE Coos Street/NE Benton Street** Complete existing sidewalk gaps	Newport	City/State Funds	$3,250,000	Low	Financially Constrained	Tier 2	North, Downtown
SW12	**SW 2nd Street** Complete existing sidewalk gaps	Newport	City/State Funds	$1,375,000	Low	Financially Constrained	Tier 2	Downtown
SW13	**NW Nye Street** Complete existing sidewalk gaps	Newport	City/State Funds	$6,575,000	Low	Unconstrained	Unconstrained Tier 2	North, Downtown
SW14	**NW/NE 11th Street** Complete existing sidewalk gaps	Newport	City/State Funds	$2,325,000	Low	Financially Constrained	Tier 2	North, Downtown
SW16	**NW Edenview Way/NE 20th Street** Complete existing sidewalk gaps	Newport	City/State Funds	$3,675,000	Low	Unconstrained	Unconstrained Tier 2	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
SW17	**NW 60th Street** Complete existing sidewalk gaps	Newport	NURA	$200,000	Medium	Financially Constrained	Tier 1	North
SW18	**SE 35th Street** Complete existing sidewalk gaps on north side only	Newport	City/State Funds	$500,000	Low	Financially Constrained	Tier 2	Downtown
SW19	**NW 8th Street/NW Spring Street** Complete existing sidewalk gaps	Newport	City/State Funds	$1,725,000	Low	Financially Constrained	Tier 2	North, Downtown
SW20	**NW Gladys Street/NW 55th Street** Complete existing sidewalk gaps	Newport	NURA	$1,450,000	Low	Financially Constrained	Tier 2	North
SW21	**US 101** Complete sidewalk infill on east side of US 101 only. Note the specified side is subject to modification.	State	NURA	$5,750,000	Medium	Financially Constrained	Tier 1	North
SW22	**Yaquina Bay State Park Drive** Complete existing sidewalk gaps and install enhanced pedestrian crossings within the Yaquina Bay State Recreation Site. Note proposed improvements should be consistent with the Yaquina Bay State Recreation Site Master Plan	Newport	City/State Funds	$250,000	Medium	Unconstrained	Unconstrained Tier 2	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
SW23	**SW Bay Boulevard** Complete existing sidewalk gaps	Newport	City/State Funds	$2,000,000	Medium	Unconstrained	Unconstrained Tier 2	Downtown
SW24	**NW 55th Street** Complete existing sidewalk gaps	Newport	NURA	$1,825,000	Low	Financially Constrained	Tier 2	North
SW25	**NE Harney Street/NE 36th Street** Complete existing sidewalk gaps	Newport	City/State Funds	$6,950,000	Low	Unconstrained	Unconstrained Tier 2	North
SW26	**NE Avery Street/NE 71st Street** Complete existing sidewalk gaps	Newport	City/State Funds	$3,350,000	Low	Unconstrained	Unconstrained Tier 2	North
SW27	**NE 12th Street** Complete existing sidewalk gaps	Newport	City/State Funds	$675,000	Low	Financially Constrained	Tier 2	North, Downtown
SW28	**SW Bayley Street** Complete existing sidewalk gaps	Newport	NURA	$350,000	Low	Financially Constrained	Tier 2	Downtown
SW29	**US 101** Complete existing sidewalks gaps. Note this project is currently being constructed.	State	Funded	$650,000	Medium	Financially Constrained	Tier 1	Downtown
SW30	**Yaquina Bay Road** Complete existing sidewalk gaps on north side only	Newport	City/State Funds	$2,750,000	Low	Financially Constrained	Tier 2	Downtown
TR1	**NW Oceanview Drive**	Newport	City/State Funds	$6,000,000	High	Unconstrained	Unconstrained Tier 1	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	Construct a shared use path on one side only							
TR2	**US 101 (North)** Construct a shared use path on one side only. The proposed path will be located on the west side of US 101 south of NW Lighthouse Drive and on the east side of US 101 north of NW Lighthouse Drive. Sidewalk infill will be completed on the opposite side between NW 60th Street and NW Oceanview Drive. Shared use path project should be consistent with previous planning efforts (e.g., Agate Beach Historic Bicycle/Pedestrian Path, Lighthouse to Lighthouse Path). Note the specified side and project extents are subject to modification.	State	NURA	$12,825,000	High	Unconstrained	Unconstrained Tier 1	North
TR3	**US 101 (South)** Construct a shared use path on the west side of US 101 and complete existing sidewalk gaps on east side of US 101. Note the specified side and project extents are subject to modification. Note sidewalk on the east side of US 101 between SE 35th Street and SE Ferry Slip	State	City/State Funds	$450,000	High	Financially Constrained	Tier 1	Downtown, South

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	Road is currently being constructed.							
TR5	**NW Lighthouse Drive** Construct a shared use path on one side only and other improvements as identified by the BLM/FHWA. Note pedestrian/bicycle crossing improvements may be needed at the intersection of US 101/NW Lighthouse Drive.	State	City/State Funds	$5,625,000	Medium	Unconstrained	Unconstrained Tier 2	North
TR6	**NE Big Creek Road** Construct a shared use path. Note this project utilizes the existing roadway width but includes separation to designate one 12 ft. travel lane and an adjacent shared use path.	State	City/State Funds	$450,000	High	Financially Constrained	Tier 1	North, Downtown
TR7	**NW Rocky Way** Construct a shared use path and other improvements as identified by the BLM/FHWA	State	City/State Funds	$675,000	Medium	Unconstrained	Unconstrained Tier 2	North
TR9	**SE 40th Street** Construct a shared use path on one side only to complete existing gap	State	City/State Funds	$0	High	Unconstrained	Unconstrained Tier 1	Downtown
TR11	**NW Nye Street** Construct a shared use path in coordination with BL2 and	Newport	City/State Funds	$500,000	High	Unconstrained	Unconstrained Tier 1	North, Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	SW13. Note this project should only be constructed in the event EXT12 is not constructed.							
TR12	**SE 1st Street** Construct a shared use path	Newport	NURA	$2,550,000	High	Financially Constrained	Tier 1	Downtown
TR13	**US 101** Construct a shared use path on the west side of US 101. Note the specified side and project extents are subject to modification	State	NURA	$5,275,000	High	Financially Constrained	Tier 1	North
TR14	**SW Abalone Street** Construct a shared use path on the south side of SW Abalone Street	Newport	City/State Funds	$0	Medium	Unconstrained	Unconstrained Tier 2	Downtown
BR1	**NE 12th Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$25,000	Medium	Financially Constrained	Tier 1	North, Downtown
BR2	**NE Harney Street/NE 36th Street** Install signing and striping as needed to designate a bike route. Note this project would be eliminate in favor of on-street bike lanes if the Harney Street extension is completed	Newport	City/State Funds	$75,000	Medium	Financially Constrained	Tier 1	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
BR3	**NE Eads Street/NE 12th Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	North, Downtown
BR4	**Yaquina Bay State Park Drive** Install signing and striping as needed to designate a bike route. Note proposed improvements should be consistent with the Yaquina Bay State Recreation Site Master Plan	State	City/State Funds	$50,000	Medium	Unconstrained	Unconstrained Tier 2	Downtown
BR7	**SW 2nd Street/SW Angle Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	Downtown
BR9	**NW Edenview Way/NE 20th Street** Install signing and striping as needed to designate a bike route. Restripe through US 101/NE 20th Street intersection to provide on-street bike lanes approximately between NW Edenview Way and the eastern Fred Meyer Driveway (project removes on-street parking on one side only)	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
BR10	**NW 60th Street/NW Gladys Street/NW 55th Street** Install signing and striping as needed to designate a bike route through Agate Beach	Newport	NURA	$25,000	Medium	Financially Constrained	Tier 1	North
BR12	**NE Avery Street/NE 71st Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	North
BR13	**NW 3rd Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	Downtown
BR14	**Yaquina Bay Bridge Interim Improvements** Install signing and striping as needed to designate a bike route and implement other improvements as identified in the Oregon Coast Bike Route Plan such as flashing warning lights or advisory speed signs	Newport	City/State Funds	$75,000	Medium	Financially Constrained	Tier 1	Downtown
BR15	**NW Oceanview Drive Interim Improvements** Install signing and striping as needed to designate a bike route and implement other improvements as identified in	Newport	City/State Funds	$75,000	Medium	Unconstrained	Unconstrained Tier 2	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	the Oregon Coast Bike Route Plan							
BR16	**NW 55th Street** Install signing and striping as needed to designate a bike route	Newport	NURA	$50,000	Medium	Financially Constrained	Tier 1	North
BR17	**NW 6th Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$25,000	Medium	Financially Constrained	Tier 1	Downtown
BR18	**NE 7th Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	Downtown
BR19	**NW Oceanview Drive/NW Spring Street/NW Coast Street** Install signing and striping as needed to designate a bike route	Newport	City/State Funds	$75,000	Medium	Unconstrained	Unconstrained Tier 2	North, Downtown
SBL1	**SE Moore Drive/NE Harney Street** Restripe to install buffered bike lanes between SE Bay Boulevard and US 20; Widen to install buffered bike lanes between US 20 and NE Yaquina Heights Drive; Restripe and upgrade the existing on-street bike lanes	Newport	NURA	$825,000	High	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	between NE Yaquina Heights Drive and NE 7th Street (project removes on-street parking on one side only). Note: limited additional widening may be required to accommodate INT6 turn lane							
SBL2	**US 101** Construct a separated bicycle facility on US 101. Note the specified facility design and project extents are subject to review and modification	State	NURA	$1,350,000	High	Financially Constrained	Tier 1	Downtown
SBL3	**US 101** Construct a separated bicycle facility on US 101. Note the specified facility design and project extents are subject to review and modification	State	NURA	$5,915,000	High	Unconstrained	Unconstrained Tier 1	North, Downtown
SBL4	**US 101** Construct a separated bicycle facility on US 101. Note the specified facility design and project extents are subject to review and modification	State	City/State Funds	$925,000	High	Financially Constrained	Tier 1	Downtown
BL1	**SW Canyon Way** Restripe to provide on-street bike lanes in uphill direction and mark sharrows in the downhill direction (project may convert	Newport	City/State Funds	$25,000	Medium	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	existing angle parking near SW Bay Boulevard to parallel parking)							
BL2	**NW Nye Street** Restripe NW Nye Street to include on-street bicycle lanes (project removes on-street parking on one side only)	Newport	City/State Funds	$100,000	High	Unconstrained	Unconstrained Tier 1	North, Downtown
BL4	**SW 9th Street** Restripe or widen as needed to provide on-street bike lanes (project removes on-street parking)	Newport	NURA	$465,000	High	Financially Constrained	Tier 1	Downtown
BL5	**SW Bayley Street** Restripe to provide on-street bike lanes (project removes on-street parking on one side only)	Newport	NURA	$25,000	Medium	Financially Constrained	Tier 1	Downtown
BL6	**SW Hurbert Street** Restripe to provide on-street bike lanes (existing angle parking will be converted to parallel parking on one side only)	Newport	NURA	$25,000	High	Financially Constrained	Tier 1	Downtown
BL7	**NW/NE 6th Street** Restripe or widen as needed to provide on-street bike lanes (project removes on-street parking on one side only)	Newport	City/State Funds	$775,000	Medium	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
BL8	**NW/NE 11th Street** Restripe to provide on-street bike lanes (project removes on-street parking on one side only although on-street parking may be impacted on both sides of the street between NW Lake Street and NW Nye Street)	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	North, Downtown
BL9	**NE 3rd Street** Widen as needed to provide on-street bike lanes	Newport	City/State Funds	$525,000	Medium	Financially Constrained	Tier 1	Downtown
BL10	**NE Yaquina Heights Drive** Widen as needed to provide on-street bike lanes	Newport	City/State Funds	$8,075,000	High	Unconstrained	Unconstrained Tier 1	Downtown
BL11	**SW 10th Street/SE 2nd Street/SE Coos Street/NE Benton Street** Restripe to provide on-street bike lanes (project removes on-street parking on one side only between NE 11th Street and US 20). Note 5 ft. bike lanes are acceptable between US 20 and SE 2nd Street	Newport	City/State Funds	$150,000	Medium	Financially Constrained	Tier 1	North, Downtown
BL12	**SW Elizabeth Street** Restripe to provide on-street bike lanes (project removes on-street parking on one side only)	Newport	City/State Funds	$75,000	Medium	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
BL13	**W Olive Street** Restripe to provide on-street bike lanes (project removes on-street parking on one side only). Note project requires modification of existing curb extensions at Coast Street; on-street bike lanes may terminate prior to the US 101 intersection to provide space for turn pockets	Newport	City/State Funds	$150,000	Medium	Financially Constrained	Tier 1	Downtown
BL14	**Yaquina Bay Road** Restripe or widen as needed to provide on-street bike lanes	Newport	City/State Funds	$1,625,000	Medium	Financially Constrained	Tier 1	Downtown
CR1	**NW 60th Street/US 101** Install an enhanced pedestrian crossing	State	NURA	$150,000	Medium	Financially Constrained	Tier 1	North
CR2	**SE Coos Street/US 20** Install an enhanced pedestrian crossing	State	NURA	$250,000	Medium	Financially Constrained	Tier 1	Downtown
CR3	**NW 55th Street/US 101** Install an enhanced pedestrian crossing	State	NURA	$150,000	Medium	Financially Constrained	Tier 1	North
CR4	**NE Eads Street/US 20** Install an enhanced pedestrian crossing	State	NURA	$250,000	Medium	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
CR5	**NW Oceanview/US 101** Install an enhanced pedestrian crossing	State	City/State Funds	$150,000	Medium	Unconstrained	Unconstrained Tier 2	North
CR6	**SE 32nd Street/US 101** Install an enhanced pedestrian crossing	State	City/State Funds	$0	Medium	Unconstrained	Unconstrained Tier 2	Downtown
CR7	**SW Naterlin Drive/US 101** Improve pedestrian connections between Yaquina Bay Bridge and downtown Newport through pedestrian wayfinding, marked crossings, and other traffic control measures	State	City/State Funds	$25,000	Medium	Financially Constrained	Tier 1	Downtown
CR8	**NW 68th Street/US 101** Install an enhanced pedestrian crossing	State	City/State Funds	$125,000	Medium	Financially Constrained	Tier 1	North
CR9	**Between NW 60th Street and NW 68th Street/US 101** Install an enhanced pedestrian crossing to serve existing transit stops and RV park	State	City/State Funds	$125,000	Medium	Unconstrained	Unconstrained Tier 2	North
CR10	**NW 58th/US 101** Install an enhanced pedestrian crossing	State	NURA	$150,000	Medium	Financially Constrained	Tier 1	North
CR11	**NW 48th/US 101**	State	NURA	$150,000	Medium	Financially Constrained	Tier 1	North

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
	Install an enhanced pedestrian crossing							
CR12	**NW 43rd/US 101** Install an enhanced pedestrian crossing	State	City/State Funds	$150,000	Medium	Financially Constrained	Tier 1	North
CR13	**Best Western Driveway/US 101** Install an enhanced pedestrian crossing	State	City/State Funds	$150,000	Medium	Financially Constrained	Tier 1	North
CR14	**NE 17th/US 101** Install an enhanced pedestrian crossing	State	City/State Funds	$150,000	Medium	Financially Constrained	Tier 1	North, Downtown
CR15	**NW 12th/US 101** Install an enhanced pedestrian crossing	State	NURA	$250,000	Medium	Financially Constrained	Tier 1	North, Downtown
CR16	**NW 8th/US 101** Install an enhanced pedestrian crossing	State	NURA	$150,000	Medium	Financially Constrained	Tier 1	North, Downtown
CR18	**SW Bay/US 101** Install an enhanced pedestrian crossing	State	NURA	$150,000	Medium	Financially Constrained	Tier 1	Downtown
CR19	**SE Benton/US 20** Install an enhanced pedestrian crossing	State	NURA	$250,000	Medium	Financially Constrained	Tier 1	Downtown

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON	MAP AREA
PRO1	**Parking Management** Implement additional parking management strategies for the Nye Beach and Bayfront Areas. Strategies could include metering, permits, or other time restrictions	Newport	City/State Funds	$50,000	Medium	Financially Constrained	Tier 1	n/a
PRO2	**Transportation Demand Management** Implement strategies to enhance transit use in Newport. Specific strategies could include public information, stop enhancements, route refinement, or expanded service hours	Newport	City/State Funds	$475,000	Medium	Unconstrained	Unconstrained Tier 2	n/a
PRO3	**Neighborhood Traffic Management** Implement a neighborhood traffic calming program	Newport	City/State Funds	$475,000	High	Financially Constrained	Tier 1	n/a
PRO4	**Yaquina Bay Ferry Service** Implement a foot ferry for bicyclists and pedestrians across Yaquina Bay	State	City/State Funds	$4,750,000	High	Unconstrained	Unconstrained Tier 1	n/a

Chapter 7: Implementation and On-Going Strategies

The foregoing chapters presented the goals, policies, plans and programs to support the city's Transportation System Plan and its vision of growth to 2040. The City of Newport TSP update incorporates several elements that require further action to facilitate full implementation of the plan. These implementation actions are described in the following sections.

Furthermore, it is recognized that there are a host of on-going community issues related to general transportation needs that will not be resolved by this TSP process and outcomes. These issues are acknowledged in the final section along with a summary of their status, applicable on-going strategies, and the expected path forward.

STEPS TO SUPPORT PLAN IMPLEMENTATION

SUPPLEMENTAL FUNDING OPTIONS

Providing adequate funding for capital investments and on-going maintenance of transportation systems and services is a major challenge. One of the unique funding features available to the City of Newport is its Urban Renewal Districts that were established in 2015 for the Northside and for the South Beach areas. These two districts can be used to augment traditional transportation revenue sources, which will enable the city to advance priority capital investments to support economic growth and other community objectives within the district boundaries.

As reported earlier during this TSP update process[5], the city's current funding programs are expected to generate about $76 million for transportation system improvements through 2040. This was identified as the amount that could fund higher priority projects, which were referred to as Financially Constrained projects. Compared to other Oregon coastal cities, this is a significant capital funding resource. However, when compared to the full list of improvement projects identified through this TSP update, which totals $233 million, additional funding options are needed to fund any lower priority projects, especially those projects that are located outside of Urban Renewal Districts.

[5] Finance Program Technical Memorandum dated February 18, 2021, (see Appendix)

If the City desires to add more funding opportunities, the best candidates are a transportation utility fee, a local fuel tax increase, and a short-term property tax levy. Table13 shows some illustrative examples of possible revenues along with actions required for implementation. The transportation utility fee is enacted by council resolution and could generate $450,00 annually ($8.5 million through 2040) for each $1 charged per residential unit monthly. Other cities with such fee programs charge between $4 and $10 per month for a residential unit. Applying the high end in Newport, it would provide about $85 million through 2040.

The other notable option for Newport is the increase fuel tax, which the city has been actively exploring and will require voter approval to enact. Given their latest rate proposals, the local fuel tax would add about $200,000 annually, or just under $4 million through 2040. The final option listed is a limited property tax levy, which would produce the least additional revenue.

TABLE 13: SELECTED SUPPLEMENTAL FUNDING OPTIONS

FUNDING OPTION	ACTION REQUIRED TO IMPLEMENT	EXAMPLE CHARGE	ILLUSTRATION OF ADDITIONAL ANNUAL REVENUE
TRANSPORTATION UTILITY FEE	City Council adoption	$1 per month for residential units and $.01 per month per square foot for non-residential uses	$450,000
LOCAL FUEL TAX INCREASE	Voter Approval	+Four cents per gallon during the winter and +two cents per gallon during summer	$253,000
PROPERTY TAX LEVY	Voter Approval	$0.20 per $1,000 in assessed value (per year, for 5 years)	$300,000 (per year, for 5 years)

If the City wants to supplement the transportation funding beyond what is currently available to advance lesser priority project improvements, it is recommended to further consider one of the above supplemental options.

ACTION: Pursue and enact supplemental local transportation funding option.

NEIGHBORHOOD TRAFFIC MANAGEMENT TOOLS

The Transportation System Plan identifies a new classification of city streets that are the best candidates for applying neighborhood traffic management (NTM) strategies. The primary purpose of this new classification is to address community concerns about autos speeding through neighborhoods or diverting away from state highways while they are under severe congestion. These streets are referred to as Neighborhood Collector routes, and they are shown in Figure 22,

Figure 23 and Figure 24, and listed in the supporting technical memorandum[6]. Potential management strategies include traffic humps, traffic circles and raised crosswalks, which are illustrated in the memorandum.

The challenge with a NTM program is to identify a clear and objective process for collecting community inputs, assessing the prevailing concerns, and evaluating which, if any, NTM solution is appropriate to be installed. This will require developing guidelines about which NTM strategies are best for Newport, and where and how they are to be applied. In addition, many cities balance the technical review process with a consensus opinion of the affected neighbors to help ensure community satisfaction with the NTM decision.

ACTION: It is recommended that city develop and implement a NTM program that formalizes these processes.

STREET CROSSINGS

Streets with high traffic volumes and/or speeds in areas with trail crossings, or nearby transit stops, residential uses, schools, parks, shopping and employment destinations generally require enhanced street crossings with treatments to improve the safety and convenience for pedestrians. The TSP includes several recommended crossing enhancements. However, going forward, it is recommended that the city update their development code to match the TSP Transportation Facility and Access Spacing Standards[7].

ACTION: Update Municipal Code to incorporate street and access spacing standards identified in the TSP for city streets

Street crossings along US 101 or US 20 should be provided between every 250 to 1,500 feet, depending on the urban context, as summarized in Table 3-9 of the *Blueprint for Urban Design*. Exceptions include where the connection is impractical due to topography, inadequate sight distance, high vehicle travel speeds, lack of supporting land use or other factors that may prevent safe crossing. All crossings on state facilities require review and approval by ODOT.

Enhanced pedestrian crossing treatments should be considered on high speed or high volume roads (*e.g.* US 101, US 20) at transit stops, trail crossings, and at Major Pedestrian street highway crossings that connect major destinations (*e.g.* parks, grocery stores, schools) to residential areas. The recommended enhanced pedestrian crossing treatment should be determined using the National Cooperative Highway Research Program (NCHRP) Report 562, Improving Pedestrian Safety at Unsignalized Intersections. It is recommended that these guidelines be reviewed with all traffic studies for any potential street crossing associated with new development in the city

ACTION: Amend the city's traffic impact analysis guidelines to include review of pedestrian crossing treatments consistent with NCHRP Report 562.

[6] Technical Memorandum #10 Transportation Standards, June 30, 2021

[7] Ibid., Table 10: Transportation Facility and Access Spacing Standards

VEHICLE MOBILITY STANDARDS

Mobility standards for streets and intersections in Newport provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur. Two common methods currently used in Oregon to gauge traffic operations for motor vehicles are volume to capacity (v/c) ratios and level of service (LOS). For State facilities, mobility targets are v/c ratio based and listed in the Oregon Highway Plan (OHP). The TSP process identified alternative mobility targets on state facilities, which will be addressed by ODOT to amend the OHP.

The City of Newport does not have adopted mobility standards for motor vehicles. It is recommended that the city consider adopting mobility standards to include both a v/c ratio and LOS standard. Having both a LOS (delay-based) and v/c (congestion-based) standard can be helpful in situations where one metric may not be enough, such as an all-way stop where one approach is over capacity, but the overall intersection delay meets standards. The City of Newport should also introduce mobility standards that depend on the intersection control which can better capture acceptable levels of performance across different intersection control types.

ACTION: Amend city development code to introduce vehicle mobility standards on city streets consistent with the TSP, as summarized below.

TABLE 14: RECOMMENDED VEHICLE MOBILITY STANDARDS FOR LOCAL STREETS

INTERSECTION TYPE	PROPOSED MOBILITY STANDARD	REPORTING MEASURE
SIGNALIZED	LOS D and v/c ≤0.90	Intersection
ALL-WAY STOP OR ROUNDABOUTS	LOS D and v/c ≤0.90	Worst Approach
TWO-WAY STOP [1]	LOS E and v/c ≤0.95	Worst Major Approach/Worst Minor Approach

NOTES:

1. **APPLIES TO APPROACHES THAT SERVE MORE THAN 20 VEHICLES; THERE IS NO STANDARD FOR APPROACHES SERVING LOWER VOLUMES.**

ON-GOING ISSUES AND AREAS OF EMPHASIS

YAQUINA BAY BRIDGE

The Yaquina Bay Bridge is an essential component of regional mobility for Newport and the central Oregon coastal area. Existing narrow travel lanes, lack of shoulders, and a steep grade contribute to a reduced capacity compared to similar highways. Traffic volumes along the bridge are forecasted to be around 20,000 during an average weekday which is near capacity for several hours each day. As traffic volumes grow, this congestion could impact segments of US 101 approaching the Yaquina Bay Bridge or lead to additional congestion in off-peak hours.

During the Transportation System Plan process the central questions posed by the community about this historic structure was around the expected timing of a replacement, and whether the highway alignment and bridge crossing might be shifted to another location? The city asked ODOT with these questions. In a letter dated February 4, 2021, ODOT Director Kris Strickler stated that the latest bridge replacement cost was estimated to be over $200 million and noted that ODOT allocated about $300 million for statewide bridge work over the 2024-2027 improvement cycle. It was further noted that this is one of 11 bridges that require major investments, and, as such, the State will be looking at new opportunities to secure the necessary funding for the Yaquina Bay Bridge replacement. The timing for a replacement is uncertain, and not expected to occur within the next 20 years.

In the meantime, ODOT will continue to strengthen the existing bridge to better endure seismic events and generally prolong the usable life of this bridge. ODOT did recommend that the city add policy to its Transportation System Plan that support keeping the current general highway alignment for the future bay bridge. For example, the new bridge could be placed immediately adjacent to the existing bridge so that the highways is operational throughout construction. This policy statement will be important at a later date to guide further studies, which could include an ODOT led Refinement Plan, that conducts more in-depth preliminary design and environmental studies to select a footprint for the bridge replacement.

FERRY

Yaquina Bay Bridge congestion and the lack of certainty of a replacement has prompted alternative ideas on how to serve trips between the South Beach area and the northside of Newport. One idea stemming from the South Beach Redevelopment Plan was to provide a short-range ferry service across the bay to that serves pedestrians and bicyclists during the summer months. Further studies are needed to identify likely landing points on either side of the bay for this new ferry service, and to evaluate the expected capital and maintenance costs to operate it, and the funding source to initialize it.

OTHER ISSUES

What else should we be discussing here?

VOLUME 2: APPENDIX

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TECHNICAL MEMORADUM #11: ALTERNATE MOBILITY TARGETS

PUBLIC INVOLVEMENT SUMMARY

ALTERNATIVE MOBILITY TARGETS

DATE: October 29, 2021

TO: Project Management Team

FROM: Kayla Fleskes, Rochelle Starrett, Kevin Chewuk, Carl Springer | DKS

SUBJECT: Newport TSP Update
Technical Memorandum #11: Alternative Mobility Targets

Project #17081-007

This technical memorandum summarizes an evaluation of locations where alternate mobility targets are needed on the State highway system within Newport. This memorandum follows the evaluation process outlined in the Planning Business Line Team Operational Notice PB-02[1]. Final review and approval of alternative mobility targets for State highway corridors will be an action of the Oregon Transportation Commission (OTC).

INTRODUCTION

The Oregon Highway Plan (OHP) identifies highway mobility targets for maintaining acceptable and reliable levels of mobility on the state highway system, consistent with expectations for each facility type, location, and functional objectives[2]. The adopted mobility targets are the initial tool for identifying deficiencies and considering solutions for vehicular mobility on the state system. However, consistent with OHP Policy 1F, the ability to meet OHP mobility targets may not be compatible with a community's adopted land use plan, financial capacity, or goals. In these cases, alternative mobility targets can be explored for a facility to adjust long-term roadway performance expectations. Alternative mobility targets are only applied to intersections under state jurisdiction (i.e., an intersection located on the state highway system). Mobility targets for intersections under city jurisdiction are identified in the transportation standards memo of this TSP update.

It is important for a transportation system plan to identify a broad range of transportation system projects and services to address the deficiencies that would exist at the end of a 20-year planning horizon if the community grows in accordance with its adopted land use plan. However, it is also important to realistically identify which transportation projects and services are reasonably likely to be implemented over the 20-year planning horizon, based on financial or other constraints. This exercise enables the community and the state to establish realistic expectations for how that transportation system will likely operate at the end of the 20-year planning horizon.

[1] Planning Business Line Team Operational Notice PB-02, Oregon Department of Transportation, effective May 2, 2013.

[2] *1999 Oregon Highway Plan, as amended May 2015*, Policy 1F: Highway Mobility Policy, Oregon Department of Transportation

Because of the financial constraints that have been faced by state and local governments over the last 20 years and which are expected to continue into the foreseeable future, it is often the case that the local and/or state roadways will not be able to meet local level-of-service (LOS)[3] standards or, in the case of ODOT, roadway volume-to-capacity (v/c)[4] ratio-based mobility targets, at the end of the 20-year planning horizon if the community grows in accordance with its land use plan. Exceeding existing mobility targets is particularly common in larger communities or in those with roadways that experience higher travel demands. In these cases, it is appropriate to adjust roadway performance expectations, as expressed through local LOS standards or state mobility targets, to match the performance that is forecasted to exist at the end of the 20-year planning horizon, through the adoption of alternative standards or mobility targets.

In these situations, adopting alternative standards or mobility targets means adjusting roadway performance expectations to match realistic expectations for how the roadways are forecasted to operate, considering financial and other constraints. In addition to establishing realistic expectations for future system performance, this process will help reduce the need to include state and local investment projects that both parties acknowledge are unlikely to be achieved or that are counter to a community's adopted land use plan and goals.

ALTERNATIVE MOBILITY TARGET NEED

In Newport, US 20 and US 101 bisect the city and are the major transportation routes through Newport. In many cases (such as approaching the Yaquina Bay Bridge), parallel routes do not exist. US 20 and US 101 are classified as Statewide Highways, which typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports and major recreation areas that are not directly served by Interstate Highways. US 101 north of US 20 is a National Network freight route while US 20 is a designated freight route in the Oregon Highway Plan. US 101 (north of US 20) and US 20 are also freight reduction review routes.

Given the population and employment growth projected over the 20-year planning horizon, significant stretches of US 20 and US 101 through Newport are forecast to exceed ODOT's current mobility targets. Existing capacity constraints on the Yaquina Bay Bridge may also continue to impact operations on US 20 and US 101 in Newport since constructing a replacement bridge may not be feasible within the 20-year planning horizon. An evaluation of the disparity between the current targets and forecasted traffic operations confirmed the need for assessing the potential for alternative mobility targets to balance the community's vision established through the Newport TSP goals and objectives. The findings of that evaluation are described below.

[3] LOS standards are based on the delay experienced by drivers at a particular location where higher delay corresponds to worse levels of service.

[4] V/C ratios describe the ability of an intersection to handle additional traffic demands before experiencing excessive delay or long vehicle queues; v/c ratios that exceed 1.00 indicate that the vehicle demand exceeds the theoretical capacity.

CURRENT MOBILITY TARGETS

All US 20 and US 101 intersections in Newport must comply with the volume-to-capacity (v/c) ratio targets in Table 6 of the OHP. ODOT v/c ratio mobility targets are based on highway classification, posted speed and area type. Within Newport, US 20 and US 101 are classified as Statewide Highways. Therefore, the v/c target ranges from 0.80 to 0.95, as listed in Table 1 below. Note that alternative mobility targets have previously been adopted on US 101 in South Beach.

TABLE 1: EXISTING MOBILITY TARGETS FOR US 20 AND US 101

ROADWAY	EXTENTS	EXISTING V/C MOBILITY TARGET	
		SIGNALIZED	UNSIGNALIZED [A]
US 101	North Urban Growth Boundary to NE 20th Street	≤ 0.80	≤ 0.80/0.90
US 101	NE 20th Street to SE 40th Street [B]	≤ 0.90	≤ 0.90/0.95
US 101	SE 40th Street to south Urban Growth Boundary [B]	≤ 0.80	≤ 0.80/0.90
US 20	Urban Growth Boundary to Moore Drive	≤ 0.80	≤ 0.80/0.90
US 20	Moore Drive to US 101	≤ 0.85	≤ 0.85/0.95

[A] For unsignalized intersections, the mobility target is listed for major approach (highway approach)/minor approach (side street approach).

[B] Alternative mobility targets have been adopted at the intersection of US 101/S 35th St (v/c ≤0.99), US 101/SE 32nd St (v/c ≤0.99), US 101/SE 40th St (v/c ≤0.99) and US 101/South Beach State Park Entrance (v/c ≤0.85) based on the Average Annual Weekday traffic condition.

The mobility targets in the OHP are based on conditions present during the 30th highest annual hour of traffic (30 HV), which in Newport typically occurs during the summer months when traffic volumes increase due to an influx of vacationers and visitors. Newport's position along the Oregon Coast and US 101 leads to significant variations in traffic throughout the year; traffic volumes along US 101 are approximately 20% higher during July and August compared to average weekday volumes. Due to the seasonal variation in traffic volumes, the alternative mobility targets adopted for South Beach are based on the Average Annual Weekday traffic condition rather than the 30 HV traffic condition.

EXISTING AND FUTURE HIGHWAY OPERATIONS

In the TSP, a comparison of existing (year 2018) and future (year 2040) traffic operations along US 101 and US 20 to adopted mobility targets during summer traffic conditions (30 HV) shows that most intersections operate well today, but traffic demand in the summer p.m. peak period at several intersections will exceed capacity by 2040.

Table 2 also demonstrates the results of doing nothing (retaining the system as it exists today) versus implementing the Financially Constrained and other reasonably likely funded projects included in the TSP in 2040 (Table 3). The table compares baseline operations to the Oregon

Highway Plan (OHP) mobility targets. Note that currently adopted mobility targets/standards for US 101 are based on accommodating summertime conditions.

While the US 101/36th, US 101/31st, and US 101/20th intersections are shown to meet mobility targets within Table 2, this does not account for the recent UGB land swap in the area. A land swap occurred within the northeast part of the City that removed 71.36 acres with limited development potential and replaced it with 40-acres with high development potential. This additional development potential would add up to 200 residential units in this area and is expected to further degrade intersection operations. The corresponding analysis for the UGB land swap reported operations at the US 101/36th, US 101/31st, and US 101/20th that would be expected to exceed mobility targets[5].

TABLE 2: INTERSECTION OPERATIONS ON US 101 AND US 20 WITHOUT AND WITH REASONABLY LIKELY IMPROVEMENTS (2018 AND 2040 PM PEAK HOUR, 30 HV)

#	STUDY INTERSECTION	TRAFFIC CONTROL	MOBILITY TARGET [A]	EXISTING V/C	2040 NO BUILD V/C	2040 FINANCIALLY CONSTRAINED V/C
1	US 101/73rd	Urban 4ST	0.80 / 0.95	0.41/0.46	**0.55/1.57**	0.75
2	US 101/52nd	Urban 4SG	0.80	**0.85**	**1.06**	**1.06**
3	US 101/ Oceanview	Urban 3ST	0.80 / 0.95	0.58/0.36	**0.72/1.12**	**0.72/1.12**
4	US 101/36th	Urban 3ST	0.80 / 0.95	0.58/0.16	0.68/0.24 *	0.68/0.24 *
5	US 101/31st	Urban 3ST	0.80 / 0.95	0.61/0.16	0.71/0.30 *	0.71/0.30 *
6	US 101/20th	Urban 4SG	0.90	0.73	0.88 *	0.88 *
7	US 101/11th	Urban 4SG	0.90	0.54	0.65	0.65
8	US 101/6th	Urban 4SG	0.90	0.69	0.81	0.81
9	US 101/US 20	Urban 4SG	0.85	**0.92**	**0.99**	**0.99**
10	US 101/Angle	Urban 4ST	0.90 / 0.95	0.37/0.71	**0.49/2.63**	0.38/0.06

[5] Newport UGB Land Exchange, KAI, April 1, 2020.

#	STUDY INTERSECTION	TRAFFIC CONTROL	MOBILITY TARGET [A]	EXISTING V/C	2040 NO BUILD V/C	2040 FINANCIALLY CONSTRAINED V/C
11	US 101/ Hurbert	Urban 4SG	0.90	0.74	**0.90**	0.56
12	US 101/Bayley	Urban 4ST	0.90 / 0.95	0.33/0.39	0.41/0.79	0.41/0.79
13	US 20/Benton	Urban 4ST	0.85 / 0.95	0.43/0.75	**0.46/1.05**	**0.46/1.05**
14	US 20/Moore	Urban 4SG	0.85	0.68	**0.85**	0.63
18	9th (Proposed US 101N) /Hurbert	Urban 4ST	0.90 / 0.95	0.06/0.41	0.06/0.44	0.43/0.67

Bold and Red values indicate the adopted mobility target would not be met.

* These operational results do not account for the recent UGB land swap in the area that would increase development potential with an additional 200 residential units. This is expected to further degrade intersection operations, and each would be expected to exceed mobility targets.

[A] For unsignalized intersections, the mobility target is listed for major approach (highway approach)/minor approach (side street approach).

Note: At signalized study intersections the v/c, LOS and delay are reported as the intersection average and at unsignalized intersections the v/c, LOS and delay are reported for the worst highway approach/ worst side street approach.

The project category distribution in the financially constrained list is as follows:

- Intersection – 5 projects
- Road Extension – 5 projects
- Revision – 2 projects
- Sidewalk – 19 projects
- Shared-use path – 4 projects
- Bike route – 12 projects
- Separated bike lanes – 3 projects
- Bike Lanes – 11 projects
- Pedestrian crossings – 15 projects
- Programs – 1 project

Of these projects the 5 intersection related projects and one roadway revision project, the US 101 short couplet, are expected to directly impact traffic operations at the study intersections. Beyond the 5 intersection related projects, one intersection improvement was identified as reasonably likely funded even though this improvement is not included on the financially constrained project list. Development pressures at this intersection will drive the need for this improvement. These projects are shown in Table 3.

As noted earlier in this document, additional development associated with a recent UGB land swap near the US 101/36th, US 101/31st, and US 101/20th intersections may also make it necessary to implement an intersection improvement in the area. While it was not included in this analysis, a

TSP project would add a signal at the US 101/NE 36th intersection (TSP Project INT8). This would also improve the substandard operations reported in the UGB land swap analysis (see earlier referenced memorandum) at this intersection and at the nearby US 101/31st intersection as traffic could reroute during congested times to the new signal at the NE 36th Street intersection.

TABLE 3: FINANCIALLY CONSTRAINED AND REASONABLY LIKELY FUNDED INTERSECTION IMPROVEMENTS

TSP PROJECT ID	LOCATION	DESCRIPTION
INT1	US 101/NE 73rd Street	Complete an intersection control evaluation: either a traffic signal or roundabout are potential solutions Note: this project is not included in the financially constrained project list, but is considered reasonably likely to be funded due to future development
INT4	US 101/US 20	Install advance signage to detour westbound right turning vehicles onto NE 1st Street
INT6	US 101/SE Moore Drive/NE Harney Street	Complete an intersection control evaluation: confirm that a traffic signal (with separate left turn lanes on the northbound and southbound approaches) is the best solution
INT9	US 101/SW 40th Street	Complete an intersection control evaluation: either a traffic signal or roundabout are potential solutions
INT11	US 101/NW 6th Street	Realign intersection to eliminate offset approaches on NW 6th Street
INT12	US 101/NE 57th Street	Realign approach to align with NW 58th Street
US 101 SHORT COUPLET	Fall St to Angle St – US 101	Construct a couplet for US 101 with the southbound direction along the current highway right of way and the northbound direction along 9th Street

FACTORS LIMITING THE ABILITY TO MEET EXISTING MOBILITY TARGETS

Several factors combine to make compliance with current mobility targets within Newport difficult. They include the following:

PROJECTED MULTIMODAL TRAVEL NEEDS

The importance of US 20 and US 101 to statewide, regional, and local travel creates significant multimodal demands for both short and long trips along the corridor. These users include:

- People driving on US 101 and US 20 to make local trips to homes, work, and shopping
- People driving for regional trips between cities on the Oregon Coast
- Freight traveling to and through Newport (US 101 (north of US 20) and US 20 are both freight routes)
- Transit traveling along the main state facility or turning at a local street
- People biking and walking along and across US 101 and US 20 (US 101 is a major touring bicycle route as well as a means of transportation for local residents)

Balancing the needs of each of these various users is incorporated in the goals of the Newport TSP and factored into identifying reasonably likely to be funded projects and programs for the Newport TSP.

EXISTING AND PLANNED DEVELOPMENT PATTERNS

In many areas along US 101 and US 20, adjacent existing development and planned urban form promoting increased density and mixed land use constrain the ability to widen the highway right-of-way or provide parallel alternate routes. Obtaining needed right-of-way for highway widening would require acquisition and removal of such development, which would be very expensive and counter to the goals and objectives of the community[6]. Newport is also built around Yaquina Bay which limits travel options to the highway for residents travelling between the northern and southern sections of the city. Existing capacity constraints on the Yaquina Bay Bridge may continue to impact operations on US 20 and US 101 in Newport since constructing a replacement bridge may not be feasible within the 20-year planning horizon even if widening elsewhere is feasible.

FINANCIAL FACTORS

As is true for most agencies, funding for transportation improvements is limited and constrains the ability of ODOT to fund highway capacity improvements. The Newport TSP identifies a comprehensive set of transportation solutions resulting in $78,525,000 worth of projects deemed reasonably likely to be funded in the 20-year planning horizon, including many projects on state highways. However even with the projects and programs identified as reasonably likely to be funded, there are remaining facility mobility target performance deficiencies that could not be addressed within the funding constraints.

OTHER STRATEGIES BEING APPLIED TO ENHANCED MOBILITY

[6] The City of Newport identified a goal for Fiscal Responsibility for the transportation system which supports preservation and maintenance of the City's existing transportation system. Newport TSP Update. *Technical Memo 4 – Goals and Objectives.* 2019.

In addition to funding capacity improvements, the Newport TSP identifies funding for programs and policies to improve multimodal conditions and help reduce motor vehicle demand. This includes 66 active transportation projects including bike routes, sidewalk improvements, and shared-use paths that are reasonably likely to be funded by 2040. It also includes a parking management program for the Nye Beach and Bayfront areas with the goal of increasing parking turnover and a neighborhood traffic management program intended to increase livability.

ALTERNATIVE MOBILITY TARGET EVALUATION

Figure 2 shows ODOT's methodology for determining alternative mobility targets[7]. A summary of each step is discussed below, and Table 4 lists the results for each individual intersection.

STEP 1: IMPLEMENT PLANNED IMPROVEMENTS

Prior to implementing alternative mobility targets, all feasible actions and improvements must be taken to meet the current targets. Even with the implementation of the Financially Constrained and Reasonably Likely Funded improvements in the City of Newport's TSP, alternative mobility targets will be needed at the following study intersections:

- US 101 & 52nd Street/Lighthouse Drive – v/c 1.06
- US 101 & Oceanview Drive – v/c 0.72/1.12
- US 101 & US 20 – v/c 0.99
- US 20 & Benton Street – v/c 0.46/1.05

STEP 2: INCREASE V/C TARGETS, STAYING BELOW CAPACITY

In cases where the v/c is forecasted to be greater than the OHP mobility target but less than capacity (v/c = 1.0) during the 30 HV, establish the proposed alternative target consistent with the v/c values used in the OHP. This approach would work for one of the intersections needing alternative mobility targets.

FIGURE 2: ALTERNATIVE MOBILITY TARGET METHODOLOGY

STEP 3: REMOVE PEAKING WITHIN THE PEAK HOUR

In cases where v/c is forecasted to be greater than or equal to capacity during the 30 HV using the standard analysis procedures, evaluate the actual peak hour traffic volume for future year 30 HV projections rather than expanding the peak 15 minutes to be the 30 HV. If the resulting v/c is less than 1.0, establish the proposed alternative target. Setting the peak hour factor (PHF) for the 30 HV to 1.0 relaxes the peaking assumptions and allows for analysis of the peak hour volumes

[7] Planning Business Line Team Operational Notice PB-02, Oregon Department of Transportation, effective May 2, 2013.

instead of the peak 15-minute volumes. Removing peaking would work for all intersections needing alternative mobility targets.

STEP 4: ANALYZE AVERAGE WEEKDAY CONDITIONS

In cases where v/c is forecasted to be greater than or equal to capacity during the design hour using the actual peak hour projection of traffic and in areas where design hours are affected by high seasonal traffic volumes, evaluate the annual average weekday p.m. peak (AWD) as the future year design hour rather than the 30 HV. If the resulting v/c is less than 1.0, establish the proposed alternative target. Analyzing average weekday conditions instead of the 30 HV gives a more accurate representation of typical conditions instead of peak summer conditions when there is an influx of visitors in Newport. This step was not analyzed due to mobility targets of 1.0 during the 30 HV without peaking (Step 3) resolving the mobility target problem.

STEP 5: HOURS OF CONGESTION

In cases where v/c is forecasted to be greater than or equal to 1.0 using the Annual Average Weekday PM Peak as the future design hour, determine the duration of the period during which the future Annual Average Weekday PM Peak hour will have a v/c greater than or equal to 1.0. Establish the proposed alternative target by increasing the number of hours that v/c can be greater than or equal to 1.0. An "hours of congestion" analysis assumes that traffic volumes that exceed capacity in the analysis hour are shifted to the "shoulder' hours, iteratively, until all traffic can be accommodated. The calculation of multi-hour conditions with peak spreading is fairly complex and it can be difficult to achieve consistent results. Also, because only the most congested intersections make it to Step 5 when considering alternative mobility targets, it is often found that over-capacity conditions would be present for several hours of the day making such a target fairly ineffective. This step was not analyzed due to mobility targets of 1.0 during the 30 HV without peaking (Step 3) resolving the mobility target problem.

TABLE 4: INTERSECTION OPERATIONS ON US 101 AND US 20 WHEN APPLYING THE ALTERNATIVE MOBILTY TARGET METHODOLOGY (2040 PM PEAK HOUR)

#	STUDY INT.	CONTROL	EXISTING V/C MOBILITY TARGET [A]	STEP 1: 30 HV, W/ FINANCIALLY CONSTRAINED IMPROVEMENTS	STEP 2: 30 HV, V/C ≤ 1.0	STEP 3: 30 HV, V/C ≤ 1.0, PHF = 1.0
1	US 101/73rd	Urban 4ST	0.80 / 0.95	0.75	0.75	0.72
2	US 101/52nd	Urban 4SG	0.80	**1.06**	**1.06**	0.99
3	US 101/ Oceanview	Urban 3ST	0.80 / 0.95	**0.72/1.12**	**0.72/1.12**	0.68/0.96
4	US 101/36th	Urban 3ST	0.80 / 0.95	0.68/0.24 *	0.68/0.24 *	0.64/0.20
5	US 101/31st	Urban 3ST	0.80 / 0.95	0.71/0.30 *	0.71/0.30 *	0.66/0.25
6	US 101/20th	Urban 4SG	0.90	0.88 *	0.88 *	0.82
7	US 101/11th	Urban 4SG	0.90	0.65	0.65	0.61
8	US 101/6th	Urban 4SG	0.90	0.81	0.81	0.73
9	US 101/US 20	Urban 4SG	0.85	**0.99**[B]	0.99	0.93
10	US 101/Angle	Urban 4ST	0.90 / 0.95	0.38/0.06	0.38/0.06	0.35/0.05
11	US 101/ Hurbert	Urban 4SG	0.90	0.56	0.56	0.54
12	US 101/Bayley	Urban 4ST	0.90 / 0.95	0.41/0.79	0.41/0.79	0.37/0.51
13	US 20/Benton	Urban 4ST	0.85 / 0.95	**0.46/1.05**	**0.46/1.05**	0.44/0.90
14	US 20/Moore	Urban 4SG	0.85	0.63	0.63	0.58
18	9th (Proposed US 101N) /Hurbert	Urban 4ST	0.90 / 0.95	0.43/0.67	0.43/0.67	0.42/0.60

Bold and Red values indicate a v/c ratio greater than the mobility target at that step.

* These operational results do not account for the recent UGB land swap in the area that would increase development potential with an additional 200 residential units. This is expected to further degrade intersection operations, and each would be expected to exceed mobility targets. While it was not included in this analysis, a TSP project would add a signal at the US 101/NE 36th intersection (TSP Project INT8). This would improve intersections operations in this area from those reported with the analysis of the UGB land swap (see earlier referenced memorandum).

[A] For unsignalized intersections, the mobility target is listed for major approach (highway approach)/minor approach (side street approach).

[B] The proposed improvement does not improve the v/c ratio (from no build) because the WBR movement is not the critical movement for the phase. However the reduction of WBR turning volume will reduce queueing on that approach.

Note: At signalized study intersections the v/c, LOS and delay are reported as the intersection average and at unsignalized intersections the v/c, LOS and delay are reported for the worst highway approach/ worst side street approach.

RECOMMENDED ALTERNATIVE MOBILITY TARGETS

While the transportation investments identified as reasonably likely to be funded in the Newport TSP will result in improved intersection performance on ODOT facilities, not all intersections will be able to meet state v/c mobility targets. There is a need to consider alternative mobility targets in select locations, for the 30 HV condition. Alternative mobility targets establish realistic expectations for future system performance and help the community continue to grow in accordance with its adopted land use plan. Table 5 shows the existing and proposed mobility targets.

TABLE 5: EXISTING AND PROPOSED MOBILITY TARGETS

#	STUDY INT.	CONTROL	EXISTING V/C MOBILITY TARGET [A]	PROPOSED MOBILITY TARGET[B]
1	US 101/73rd	Urban 4ST	0.80 / 0.95	0.99, PHF = 1.0
2	US 101/52nd	Urban 4SG	0.80	0.99, PHF = 1.0
3	US 101/ Oceanview	Urban 3ST	0.80 / 0.95	0.99, PHF = 1.0
4	US 101/36th	Urban 3ST	0.80 / 0.95	0.99, PHF = 1.0
5	US 101/31st	Urban 3ST	0.80 / 0.95	0.99, PHF = 1.0
6	US 101/20th	Urban 4SG	0.90	0.99, PHF = 1.0
7	US 101/11th	Urban 4SG	0.90	0.99, PHF = 1.0
8	US 101/6th	Urban 4SG	0.90	0.99, PHF = 1.0
9	US 101/US 20	Urban 4SG	0.85	0.99, PHF = 1.0
10	US 101/Angle	Urban 4ST	0.90 / 0.95	0.99, PHF = 1.0
11	US 101/ Hurbert	Urban 4SG	0.90	0.99, PHF = 1.0
12	US 101/Bayley	Urban 4ST	0.90 / 0.95	0.99, PHF = 1.0
13	US 20/Benton	Urban 4ST	0.85 / 0.95	0.99, PHF = 1.0
14	US 20/Moore	Urban 4SG	0.85	0.99, PHF = 1.0

[A] For unsignalized intersections, the mobility target is listed for major approach (highway approach)/minor approach (side street approach).

[B] For unsignalized intersections the mobility target is for the worst approach (major or minor)

APPENDIX

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SECTION 1. HCM REPORTS

SECTION 2. HCM REPORTS

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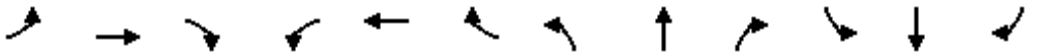
SECTION 1. HCM REPORTS

FINANCIALLY CONSTRAINED



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	5	95	0	15	5	885	60	20	690	2
Future Volume (veh/h)	1	0	5	95	0	15	5	885	60	20	690	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1654	1750	1750	1750	1709	1231	808	1709	1750
Adj Flow Rate, veh/h	1	0	5	100	0	16	5	932	63	21	726	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	7	0	0	0	3	38	69	3	0
Cap, veh/h	88	15	133	251	0	21	452	1086	663	212	1114	3
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	0.02	0.64	0.64	0.04	0.65	0.62
Sat Flow, veh/h	109	149	1288	1249	0	200	1667	1709	1043	770	1704	5
Grp Volume(v), veh/h	6	0	0	116	0	0	5	932	63	21	0	728
Grp Sat Flow(s),veh/h/ln	1546	0	0	1448	0	0	1667	1709	1043	770	0	1708
Q Serve(g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.1	24.0	1.3	0.5	0.0	14.1
Cycle Q Clear(g_c), s	0.2	0.0	0.0	4.3	0.0	0.0	0.1	24.0	1.3	0.5	0.0	14.1
Prop In Lane	0.17		0.83	0.86		0.14	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	236	0	0	271	0	0	452	1086	663	212	0	1117
V/C Ratio(X)	0.03	0.00	0.00	0.43	0.00	0.00	0.01	0.86	0.09	0.10	0.00	0.65
Avail Cap(c_a), veh/h	592	0	0	620	0	0	592	1646	1005	263	0	1645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	0.0	24.0	0.0	0.0	5.1	8.0	3.9	9.0	0.0	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	0.0	0.0	3.1	0.1	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.5	0.0	0.0	0.0	4.1	0.1	0.1	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	0.0	25.1	0.0	0.0	5.1	11.1	3.9	9.2	0.0	6.4
LnGrp LOS	C	A	A	C	A	A	A	B	A	A	A	A
Approach Vol, veh/h		6			116			1000			749	
Approach Delay, s/veh		22.3			25.1			10.6			6.5	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	39.0		9.7	5.4	40.0		9.7				
Change Period (Y+Rc), s	5.0	6.0		4.0	5.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	51.0		19.0	5.0	51.0		19.0				
Max Q Clear Time (g_c+I1), s	2.5	26.0		2.2	2.1	16.1		6.3				
Green Ext Time (p_c), s	0.0	6.9		0.0	0.0	4.8		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		9.9	
HCM 6th LOS		A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	5	90	95	0	15	55	1080	120	30	850	30
Future Volume (veh/h)	35	5	90	95	0	15	55	1080	120	30	850	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1736	1750	1750	1750	1695	1682	1750	1750	1695	1750
Adj Flow Rate, veh/h	37	5	95	100	0	16	58	1137	0	32	895	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	1	0	0	0	4	5	0	0	4	0
Cap, veh/h	55	4	297	59	0	299	79	1123		52	1102	
Arrive On Green	0.20	0.20	0.20	0.20	0.00	0.20	0.05	0.67	0.00	0.03	0.65	0.00
Sat Flow, veh/h	0	19	1457	0	0	1468	1615	1682	1483	1667	1695	1483
Grp Volume(v), veh/h	42	0	95	100	0	16	58	1137	0	32	895	0
Grp Sat Flow(s),veh/h/ln	19	0	1457	0	0	1468	1615	1682	1483	1667	1695	1483
Q Serve(g_s), s	0.0	0.0	6.8	0.0	0.0	1.1	4.4	82.0	0.0	2.3	48.1	0.0
Cycle Q Clear(g_c), s	24.5	0.0	6.8	24.5	0.0	1.1	4.4	82.0	0.0	2.3	48.1	0.0
Prop In Lane	0.88		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	0	297	59	0	299	79	1123		52	1102	
V/C Ratio(X)	0.71	0.00	0.32	1.71	0.00	0.05	0.74	1.01		0.62	0.81	
Avail Cap(c_a), veh/h	59	0	297	59	0	299	105	1123		81	1104	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.9	0.0	41.7	61.2	0.0	39.4	57.6	20.4	0.0	58.8	15.9	0.0
Incr Delay (d2), s/veh	31.4	0.0	0.5	379.7	0.0	0.1	14.2	30.0	0.0	8.5	5.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.5	8.0	0.0	0.4	2.0	35.7	0.0	1.1	17.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.3	0.0	42.1	440.9	0.0	39.4	71.8	50.4	0.0	67.3	21.1	0.0
LnGrp LOS	F	A	D	F	A	D	E	F		E	C	
Approach Vol, veh/h		137			116			1195	A		927	A
Approach Delay, s/veh		56.9			385.5			51.5			22.7	
Approach LOS		E			F			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	83.8		29.0	7.8	86.0		29.0
Change Period (Y+Rc), s	4.5	6.0		4.5	4.5	6.0		4.5
Max Green Setting (Gmax), s	7.5	78.0		24.5	5.5	80.0		24.5
Max Q Clear Time (g_c+I1), s	6.4	50.1		26.5	4.3	84.0		26.5
Green Ext Time (p_c), s	0.0	12.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	12.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	130	60	20	1150	970	55
Future Vol, veh/h	130	60	20	1150	970	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	300	-	-	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	11	5	4	4
Mvmt Flow	138	64	21	1223	1032	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2297	1032	1091	0	-	0
Stage 1	1032	-	-	-	-	-
Stage 2	1265	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.299	-	-	-
Pot Cap-1 Maneuver	~ 43	285	607	-	-	-
Stage 1	347	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 41	285	607	-	-	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	268	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	156.9	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	607	-	180	-	-
HCM Lane V/C Ratio	0.035	-	1.123	-	-
HCM Control Delay (s)	11.1	-	156.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	10.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	15	1085	40	10	995
Future Vol, veh/h	25	15	1085	40	10	995
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	275	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	31	4	0	0	3
Mvmt Flow	27	16	1154	43	11	1059

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2235	1154	0	0	1197	0
Stage 1	1154	-	-	-	-	-
Stage 2	1081	-	-	-	-	-
Critical Hdwy	6.4	6.51	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.579	-	-	2.2	-
Pot Cap-1 Maneuver	47	210	-	-	590	-
Stage 1	303	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	46	210	-	-	590	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	303	-	-	-	-	-
Stage 2	322	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.5	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	178	590	-
HCM Lane V/C Ratio	-	-	0.239	0.018	-
HCM Control Delay (s)	-	-	31.5	11.2	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

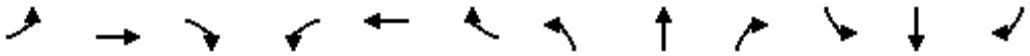
Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	10	1115	90	20	995
Future Vol, veh/h	35	10	1115	90	20	995
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	50	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	14	5	0	0	3
Mvmt Flow	38	11	1212	98	22	1082

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2338	1212	0	0	1310	0
Stage 1	1212	-	-	-	-	-
Stage 2	1126	-	-	-	-	-
Critical Hdwy	6.4	6.34	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	-	-	2.2	-
Pot Cap-1 Maneuver	41	209	-	-	535	-
Stage 1	284	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	39	209	-	-	535	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	284	-	-	-	-	-
Stage 2	300	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.8	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	161	535	-
HCM Lane V/C Ratio	-	-	0.304	0.041	-
HCM Control Delay (s)	-	-	36.8	12	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	55	80	325	30	90	60	1325	115	80	1075	20
Future Volume (veh/h)	40	55	80	325	30	90	60	1325	115	80	1075	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1723	1695	1736	1750	1723	1723	1695	1750	1709	1709	1750
Adj Flow Rate, veh/h	43	59	86	239	186	97	65	1425	124	86	1156	22
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	4	1	0	2	2	4	0	3	3	0
Cap, veh/h	59	80	117	323	211	110	82	1615	140	81	1756	33
Arrive On Green	0.08	0.08	0.08	0.20	0.20	0.19	0.05	0.54	0.53	0.05	0.54	0.53
Sat Flow, veh/h	711	976	1416	1654	1081	564	1641	2998	259	1628	3259	62
Grp Volume(v), veh/h	102	0	86	239	0	283	65	762	787	86	576	602
Grp Sat Flow(s),veh/h/ln	1687	0	1416	1654	0	1644	1641	1611	1647	1628	1624	1697
Q Serve(g_s), s	7.1	0.0	7.1	16.3	0.0	20.1	4.7	49.7	50.7	6.0	30.4	30.4
Cycle Q Clear(g_c), s	7.1	0.0	7.1	16.3	0.0	20.1	4.7	49.7	50.7	6.0	30.4	30.4
Prop In Lane	0.42		1.00	1.00		0.34	1.00		0.16	1.00		0.04
Lane Grp Cap(c), veh/h	139	0	117	323	0	321	82	868	887	81	875	914
V/C Ratio(X)	0.73	0.00	0.74	0.74	0.00	0.88	0.79	0.88	0.89	1.06	0.66	0.66
Avail Cap(c_a), veh/h	169	0	142	358	0	356	82	868	887	81	875	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	0.0	53.8	45.4	0.0	47.0	56.4	24.2	24.5	57.0	19.8	19.8
Incr Delay (d2), s/veh	10.9	0.0	13.2	6.6	0.0	19.7	29.4	9.1	9.5	116.1	3.9	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.0	7.3	0.0	10.0	2.6	19.9	20.9	5.1	11.9	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.8	0.0	67.0	52.0	0.0	66.7	85.8	33.3	34.1	173.1	23.7	23.5
LnGrp LOS	E	A	E	D	A	E	F	C	C	F	C	C
Approach Vol, veh/h		188			522			1614			1264	
Approach Delay, s/veh		65.8			60.0			35.8			33.8	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	68.6		27.5	10.0	68.6		13.9				
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5				
Max Green Setting (Gmax), s	5.5	59.0		25.5	5.5	59.0		11.5				
Max Q Clear Time (g_c+I1), s	6.7	32.4		22.1	8.0	52.7		9.1				
Green Ext Time (p_c), s	0.0	16.0		0.7	0.0	5.7		0.1				

Intersection Summary		
HCM 6th Ctrl Delay	40.2	
HCM 6th LOS	D	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	15	25	30	10	50	10	1500	15	15	1445	25
Future Volume (veh/h)	75	15	25	30	10	50	10	1500	15	15	1445	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1695	1750	1750	1750	1709	1750	1750	1709	1750
Adj Flow Rate, veh/h	79	16	26	32	11	53	11	1579	16	16	1521	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	4	0	0	0	3	0	0	3	0
Cap, veh/h	147	28	34	84	36	99	24	2525	26	30	2515	43
Arrive On Green	0.11	0.12	0.11	0.11	0.12	0.11	0.03	1.00	1.00	0.04	1.00	1.00
Sat Flow, veh/h	845	245	298	382	315	858	1667	3292	33	1667	3265	56
Grp Volume(v), veh/h	121	0	0	96	0	0	11	778	817	16	755	792
Grp Sat Flow(s),veh/h/ln	1388	0	0	1554	0	0	1667	1624	1702	1667	1624	1697
Q Serve(g_s), s	3.4	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	0.0	6.9	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.65		0.21	0.33		0.55	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	204	0	0	213	0	0	24	1245	1305	30	1251	1308
V/C Ratio(X)	0.59	0.00	0.00	0.45	0.00	0.00	0.46	0.62	0.63	0.53	0.60	0.61
Avail Cap(c_a), veh/h	336	0	0	349	0	0	83	1245	1305	83	1251	1308
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.41	0.41	0.41	0.65	0.65	0.65
Uniform Delay (d), s/veh	51.7	0.0	0.0	50.2	0.0	0.0	57.8	0.0	0.0	57.4	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.1	0.0	0.0	4.1	1.0	0.9	7.0	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.0	2.8	0.0	0.0	0.4	0.3	0.3	0.5	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	0.0	0.0	51.3	0.0	0.0	61.9	1.0	0.9	64.3	1.4	1.4
LnGrp LOS	D	A	A	D	A	A	E	A	A	E	A	A
Approach Vol, veh/h		121			96			1606			1563	
Approach Delay, s/veh		53.8			51.3			1.4			2.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	96.4		17.8	6.2	96.0		17.8
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	5.5	76.0		24.5	5.5	76.0		24.5
Max Q Clear Time (g_c+I1), s	2.8	2.0		8.9	3.1	2.0		12.3
Green Ext Time (p_c), s	0.0	51.9		0.3	0.0	54.0		0.4

Intersection Summary		
HCM 6th Ctrl Delay		5.0
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	35	30	75	20	35	35	1445	25	25	1400	30
Future Volume (veh/h)	90	35	30	75	20	35	35	1445	25	25	1400	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1750	1654	1750	1750	1709	1750	1709	1750	1750	1695	1750
Adj Flow Rate, veh/h	100	39	33	83	22	39	39	1606	28	28	1556	33
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	0	7	0	0	3	0	3	0	0	4	0
Cap, veh/h	127	50	42	113	30	53	55	1907	33	41	1855	39
Arrive On Green	0.12	0.13	0.12	0.10	0.12	0.10	0.03	0.58	0.57	0.05	1.00	1.00
Sat Flow, veh/h	954	372	315	932	247	438	1667	3265	57	1667	3225	68
Grp Volume(v), veh/h	172	0	0	144	0	0	39	797	837	28	776	813
Grp Sat Flow(s),veh/h/ln	1641	0	0	1617	0	0	1667	1624	1698	1667	1611	1682
Q Serve(g_s), s	12.2	0.0	0.0	10.4	0.0	0.0	2.8	48.2	48.5	2.0	0.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	0.0	10.4	0.0	0.0	2.8	48.2	48.5	2.0	0.0	0.0
Prop In Lane	0.58		0.19	0.58		0.27	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	219	0	0	195	0	0	55	948	992	41	927	968
V/C Ratio(X)	0.79	0.00	0.00	0.74	0.00	0.00	0.71	0.84	0.84	0.69	0.84	0.84
Avail Cap(c_a), veh/h	219	0	0	216	0	0	83	948	992	83	927	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.42	0.42	0.42	0.75	0.75	0.75
Uniform Delay (d), s/veh	51.1	0.0	0.0	51.8	0.0	0.0	57.4	20.4	20.5	56.6	0.0	0.0
Incr Delay (d2), s/veh	16.5	0.0	0.0	10.5	0.0	0.0	5.1	4.0	3.9	10.9	6.9	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0	4.9	0.0	0.0	1.2	17.9	18.9	0.9	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	0.0	0.0	62.3	0.0	0.0	62.5	24.4	24.4	67.6	6.9	6.7
LnGrp LOS	E	A	A	E	A	A	E	C	C	E	A	A
Approach Vol, veh/h		172			144			1673			1617	
Approach Delay, s/veh		67.7			62.3			25.3			7.8	
Approach LOS		E			E			C			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	73.5		18.5	6.9	74.6		20.0
Change Period (Y+Rc), s	4.5	6.5		6.0	4.5	6.5		6.0
Max Green Setting (Gmax), s	5.5	63.5		14.0	5.5	63.5		14.0
Max Q Clear Time (g_c+I1), s	4.8	2.0		12.4	4.0	50.5		14.2
Green Ext Time (p_c), s	0.0	32.1		0.1	0.0	12.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	195	35	255	165	280	75	900	215	335	975	80
Future Volume (veh/h)	205	195	35	255	165	280	75	900	215	335	975	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1736	1695	1654	1723	1723	1750	1695	1614	1695	1709	1709
Adj Flow Rate, veh/h	218	207	37	271	176	298	80	957	0	356	1037	85
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	4	7	2	2	0	4	10	4	3	3
Cap, veh/h	250	246	44	298	364	299	106	1114		256	1336	109
Arrive On Green	0.15	0.17	0.17	0.19	0.21	0.21	0.06	0.35	0.00	0.05	0.15	0.14
Sat Flow, veh/h	1654	1424	255	1576	1723	1414	1667	3221	1367	1615	3032	248
Grp Volume(v), veh/h	218	0	244	271	176	298	80	957	0	356	555	567
Grp Sat Flow(s),veh/h/ln	1654	0	1678	1576	1723	1414	1667	1611	1367	1615	1624	1657
Q Serve(g_s), s	15.5	0.0	16.9	20.2	10.8	25.3	5.7	33.2	0.0	19.0	39.5	39.6
Cycle Q Clear(g_c), s	15.5	0.0	16.9	20.2	10.8	25.3	5.7	33.2	0.0	19.0	39.5	39.6
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	250	0	291	298	364	299	106	1114		256	715	730
V/C Ratio(X)	0.87	0.00	0.84	0.91	0.48	1.00	0.75	0.86		1.39	0.78	0.78
Avail Cap(c_a), veh/h	317	0	322	302	364	299	111	1114		256	715	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.43	0.43	0.43
Uniform Delay (d), s/veh	49.8	0.0	48.0	47.6	41.6	47.3	55.3	36.5	0.0	56.9	45.6	45.6
Incr Delay (d2), s/veh	17.6	0.0	15.8	29.0	1.0	51.6	22.9	8.7	0.0	186.8	3.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	8.4	10.3	4.7	13.2	3.1	14.4	0.0	21.5	18.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	0.0	63.9	76.6	42.6	98.9	78.2	45.2	0.0	243.6	49.2	49.2
LnGrp LOS	E	A	E	E	D	F	E	D		F	D	D
Approach Vol, veh/h		462			745			1037	A		1478	
Approach Delay, s/veh		65.5			77.5			47.7			96.0	
Approach LOS		E			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	56.9	22.2	29.3	23.0	45.5	26.7	24.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	7.5	49.0	22.5	22.5	18.5	38.0	22.5	22.5
Max Q Clear Time (g_c+I1), s	17.7	41.6	17.5	27.3	21.0	35.2	22.2	18.9
Green Ext Time (p_c), s	0.0	5.7	0.2	0.0	0.0	2.2	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	75.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

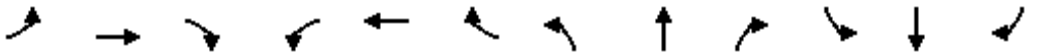
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	20	0	0	1025	0	0	0	0	1145	45
Future Vol, veh/h	0	0	20	0	0	1025	0	0	0	0	1145	45
Conflicting Peds, #/hr	0	0	17	17	0	0	22	0	11	11	0	22
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	16979	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	14	0	2	0	4	0	4	2	2
Mvmt Flow	0	0	22	0	0	1126	0	0	0	0	1258	49

Major/Minor	Minor2			Major2		
Conflicting Flow All	1305	1305	693	-	-	0
Stage 1	1305	1305	-	-	-	-
Stage 2	0	0	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	-	-	-
Pot Cap-1 Maneuver	154	162	390	0	-	-
Stage 1	222	232	-	0	-	-
Stage 2	-	-	-	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	148	0	382	-	-	-
Mov Cap-2 Maneuver	148	0	-	-	-	-
Stage 1	217	0	-	-	-	-
Stage 2	-	0	-	-	-	-

Approach	EB	SB
HCM Control Delay, s	15	0
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	382	-	-
HCM Lane V/C Ratio	0.058	-	-
HCM Control Delay (s)	15	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	30	50	70	60	0	0	0	0	45	1085	20
Future Volume (veh/h)	0	30	50	70	60	0	0	0	0	45	1085	20
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.98		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1750	1750	1709	1682	0				1750	1723	1750
Adj Flow Rate, veh/h	0	31	52	72	62	0				46	1119	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	5	0				0	2	0
Cap, veh/h	0	89	149	126	94	0				99	2521	50
Arrive On Green	0.00	0.15	0.15	0.15	0.15	0.00				0.77	0.78	0.77
Sat Flow, veh/h	0	579	972	522	610	0				127	3234	64
Grp Volume(v), veh/h	0	0	83	134	0	0				622	0	564
Grp Sat Flow(s),veh/h/ln	0	0	1552	1132	0	0				1716	0	1708
Q Serve(g_s), s	0.0	0.0	5.8	8.9	0.0	0.0				15.1	0.0	13.0
Cycle Q Clear(g_c), s	0.0	0.0	5.8	14.7	0.0	0.0				15.1	0.0	13.0
Prop In Lane	0.00		0.63	0.54		0.00				0.07		0.04
Lane Grp Cap(c), veh/h	0	0	239	215	0	0				1338	0	1332
V/C Ratio(X)	0.00	0.00	0.35	0.62	0.00	0.00				0.47	0.00	0.42
Avail Cap(c_a), veh/h	0	0	401	365	0	0				1338	0	1332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	45.5	50.4	0.0	0.0				4.6	0.0	4.4
Incr Delay (d2), s/veh	0.0	0.0	0.6	2.2	0.0	0.0				1.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.3	4.1	0.0	0.0				5.0	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	46.2	52.6	0.0	0.0				5.8	0.0	5.3
LnGrp LOS	A	A	D	D	A	A				A	A	A
Approach Vol, veh/h		83			134						1186	
Approach Delay, s/veh		46.2			52.6						5.6	
Approach LOS		D			D						A	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		97.5		22.5				22.5				
Change Period (Y+Rc), s		5.0		4.5				4.5				
Max Green Setting (Gmax), s		80.0		30.5				30.5				
Max Q Clear Time (g_c+I1), s		17.1		16.7				7.8				
Green Ext Time (p_c), s		26.3		0.5				0.3				

Intersection Summary		
HCM 6th Ctrl Delay		12.5
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	60	10	0	30	25	1110	10	10	1195	20
Future Vol, veh/h	15	0	60	10	0	30	25	1110	10	10	1195	20
Conflicting Peds, #/hr	10	0	0	0	0	10	13	0	8	8	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	4	3	0	0	2	0
Mvmt Flow	17	0	67	11	0	33	28	1233	11	11	1328	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2057	2682	688	1989	2688	640	1363	0	0	1252	0	0
Stage 1	1374	1374	-	1303	1303	-	-	-	-	-	-	-
Stage 2	683	1308	-	686	1385	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.18	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.24	-	-	2.2	-	-
Pot Cap-1 Maneuver	33	22	393	37	22	423	490	-	-	563	-	-
Stage 1	156	215	-	173	233	-	-	-	-	-	-	-
Stage 2	410	231	-	408	213	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	27	19	388	27	19	416	484	-	-	559	-	-
Mov Cap-2 Maneuver	27	19	-	27	19	-	-	-	-	-	-	-
Stage 1	145	196	-	162	218	-	-	-	-	-	-	-
Stage 2	352	216	-	311	194	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	110.6	79	0.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	484	-	-	106	90	559	-	-
HCM Lane V/C Ratio	0.057	-	-	0.786	0.494	0.02	-	-
HCM Control Delay (s)	12.9	-	-	110.6	79	11.6	0.4	-
HCM Lane LOS	B	-	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	4.3	2.1	0.1	-	-

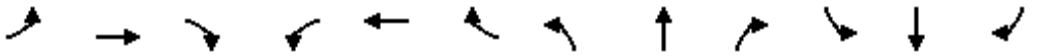
Intersection	
Int Delay, s/veh	17.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	695	45	120	625	5	20	5	210	5	10	40
Future Vol, veh/h	15	695	45	120	625	5	20	5	210	5	10	40
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	6	5	4	4	0	6	0	3	0	0	3
Mvmt Flow	16	732	47	126	658	5	21	5	221	5	11	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	664	0	0	780	0	0	1729	1705	758	1816	1726	663
Stage 1	-	-	-	-	-	-	789	789	-	914	914	-
Stage 2	-	-	-	-	-	-	940	916	-	902	812	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.16	6.5	6.23	7.1	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.554	4	3.327	3.5	4	3.327
Pot Cap-1 Maneuver	935	-	-	828	-	-	68	92	405	61	90	459
Stage 1	-	-	-	-	-	-	378	405	-	330	355	-
Stage 2	-	-	-	-	-	-	311	354	-	335	395	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	934	-	-	827	-	-	48	77	404	23	75	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	77	-	23	75	-
Stage 1	-	-	-	-	-	-	371	398	-	324	301	-
Stage 2	-	-	-	-	-	-	231	300	-	147	388	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.6	118.2	55.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	235	934	-	-	827	-	-	126
HCM Lane V/C Ratio	1.053	0.017	-	-	0.153	-	-	0.459
HCM Control Delay (s)	118.2	8.9	-	-	10.1	-	-	55.8
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	10.4	0.1	-	-	0.5	-	-	2.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	835	135	75	570	195	125	80	75	175	65	40
Future Volume (veh/h)	60	835	135	75	570	195	125	80	75	175	65	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1723	1723	1709	1709	1654	1723	1723	1695	1736	1750	1750
Adj Flow Rate, veh/h	65	908	147	82	620	212	136	87	82	190	71	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	2	2	3	3	7	2	2	4	1	0	0
Cap, veh/h	88	1396	226	112	866	711	377	233	219	327	291	176
Arrive On Green	0.06	0.50	0.48	0.07	0.51	0.51	0.28	0.29	0.29	0.28	0.29	0.28
Sat Flow, veh/h	1537	2821	457	1628	1709	1402	1270	813	767	1221	1017	616
Grp Volume(v), veh/h	65	527	528	82	620	212	136	0	169	190	0	114
Grp Sat Flow(s),veh/h/ln	1537	1637	1641	1628	1709	1402	1270	0	1580	1221	0	1633
Q Serve(g_s), s	3.3	19.2	19.3	4.0	22.5	7.0	7.4	0.0	6.8	11.9	0.0	4.3
Cycle Q Clear(g_c), s	3.3	19.2	19.3	4.0	22.5	7.0	11.7	0.0	6.8	18.7	0.0	4.3
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.49	1.00		0.38
Lane Grp Cap(c), veh/h	88	810	812	112	866	711	377	0	452	327	0	467
V/C Ratio(X)	0.74	0.65	0.65	0.73	0.72	0.30	0.36	0.00	0.37	0.58	0.00	0.24
Avail Cap(c_a), veh/h	154	1002	1004	224	1110	911	521	0	631	466	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.1	15.1	15.2	36.5	15.3	11.5	26.9	0.0	22.9	30.8	0.0	22.0
Incr Delay (d2), s/veh	8.6	3.4	3.4	6.6	4.3	0.9	0.4	0.0	0.4	1.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.2	7.3	1.7	8.9	2.2	2.3	0.0	2.5	3.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	18.5	18.6	43.1	19.6	12.4	27.3	0.0	23.2	32.4	0.0	22.3
LnGrp LOS	D	B	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		1120			914			305			304	
Approach Delay, s/veh		20.1			20.0			25.0			28.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	43.6		26.9	8.6	44.6		26.9				
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5				
Max Green Setting (Gmax), s	10.5	48.0		31.5	7.5	51.0		31.5				
Max Q Clear Time (g_c+I1), s	6.0	21.3		20.7	5.3	24.5		13.7				
Green Ext Time (p_c), s	0.0	17.4		1.0	0.0	13.3		1.1				

Intersection Summary			
HCM 6th Ctrl Delay		21.6	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	55	0	0	70	60	50	1315	25	0	0	0
Future Vol, veh/h	10	55	0	0	70	60	50	1315	25	0	0	0
Conflicting Peds, #/hr	4	0	15	15	0	4	2	0	11	11	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	2	0	0	0	0	6	2	23	0	6	0
Mvmt Flow	10	57	0	0	72	62	52	1356	26	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	824	1499	-	-	1486	706	2	0	0
Stage 1	2	2	-	-	1484	-	-	-	-
Stage 2	822	1497	-	-	2	-	-	-	-
Critical Hdwy	7.5	6.54	-	-	6.5	6.9	4.22	-	-
Critical Hdwy Stg 1	-	-	-	-	5.5	-	-	-	-
Critical Hdwy Stg 2	6.5	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.02	-	-	4	3.3	2.26	-	-
Pot Cap-1 Maneuver	269	121	0	0	126	383	1590	-	-
Stage 1	-	-	0	0	190	-	-	-	-
Stage 2	339	184	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	93	102	-	-	107	379	1587	-	-
Mov Cap-2 Maneuver	93	102	-	-	107	-	-	-	-
Stage 1	-	-	-	-	161	-	-	-	-
Stage 2	134	156	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	73	56.1	0.7
HCM LOS	F	F	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2
Capacity (veh/h)	1587	-	-	93	102	107	379
HCM Lane V/C Ratio	0.032	-	-	0.111	0.556	0.674	0.163
HCM Control Delay (s)	7.3	0.5	-	48.5	77.5	90.2	16.3
HCM Lane LOS	A	A	-	E	F	F	C
HCM 95th %tile Q(veh)	0.1	-	-	0.4	2.6	3.5	0.6

Intersection ID and Name	use dropdown NB PhasingType	use dropdown SB PhasingType	use dropdown EB PhasingType	use dropdown WB PhasingType	Cycle Length	Lost Time	BEGIN CALCULATIONS	1 EBL	3 EBT	4 EBR	5 WBL	6 WBT	7 WBR	8 NBL	9 NBT	10 NBR	11 SBL	12 SBT	13 SBR	14	Critical Flow Calculator WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S	Intersection V/C	HCM 6th Ctrl Delay	HCM 6th LOS	Synchro ID
2: US 101 & Lighthouse Dr/52nd St	Protected	Protected	Permitted	Permitted	125	12	Adj Flow Rate, veh/h	37	5	95	100	0	16	58	1137	0	32	895	0	Protected	0.26	0.01	0.56	0.70						
							Sat Flow, veh/h	0	19	1457	0	0	1468	1615	1682	1483	1667	1695	1483	Permitted or Split	0.26	0.01	0.53	0.68						
							V/S	0.00	0.26	0.07	0.00	0.00	0.01	0.04	0.68	0.00	0.02	0.53	0.00	selected phasing	0.26	0.01	0.56	0.70	0.26	0.70	**1.06**	**56.9**	**E**	2
7: US 101 & 11th St	Protected	Protected	Permitted	Permitted	120	12	Adj Flow Rate, veh/h	79	16	26	32	11	53	11	1579	16	16	1521	26	Protected	0.17	0.16	0.47	0.49						
							Sat Flow, veh/h	845	245	298	382	315	858	1667	3292	33	1667	3265	56	Permitted or Split	0.09	0.08	0.47	0.48						
							V/S	0.09	0.07	0.09	0.08	0.03	0.06	0.01	0.48	0.48	0.01	0.47	0.46	selected phasing	0.09	0.08	0.47	0.49	0.09	0.49	**0.65**	**5**	**A**	7
8: US 101 & 6th St	Protected	Protected	Split	Split	120	16	Adj Flow Rate, veh/h	100	39	33	83	22	39	39	1606	28	28	1556	33	Protected	0.19	0.19	0.51	0.51						
							Sat Flow, veh/h	954	372	315	932	247	438	1667	3265	57	1667	3225	68	Permitted or Split	0.10	0.09	0.49	0.49						
							V/S	0.10	0.10	0.10	0.09	0.09	0.09	0.02	0.49	0.49	0.02	0.48	0.49	selected phasing	0.10	0.09	0.51	0.51	0.19	0.51	**0.81**	**21**	**C**	8
9: US 101 & Olive St/US 20	Protected	Protected	Protected	Protected	120	16	Adj Flow Rate, veh/h	218	207	37	271	176	298	80	957	0	356	1037	85	Protected	0.32	0.34	0.39	0.52						
							Sat Flow, veh/h	1654	1424	255	1576	1723	1414	1667	3221	1367	1615	3032	248	Permitted or Split	0.15	0.21	0.34	0.30						
							V/S	0.13	0.15	0.15	0.17	0.10	0.21	0.05	0.30	0.00	0.22	0.34	0.34	selected phasing	0.32	0.34	0.39	0.52	0.34	0.52	**0.99**	**75.1**	**E**	9
11: US 101 & Hurbert St	Protected	Protected	Permitted	Permitted	120	12	Adj Flow Rate, veh/h	0	31	52	72	62	0	0	0	0	46	1119	21	Protected	0.19	0.10	0.35	0.36						
							Sat Flow, veh/h	0	579	972	522	610	0	0	0	0	127	3234	64	Permitted or Split	0.05	0.14	0.36	0.00						
							V/S	0.00	0.05	0.05	0.14	0.10	0.00	0.00	0.00	0.00	0.36	0.35	0.33	selected phasing	0.05	0.14	0.35	0.36	0.14	0.36	**0.56**	**12.5**	**B**	11
14: Moore Dr/Harney St & US 20	Permitted	Permitted	Protected	Protected	104	12	Adj Flow Rate, veh/h	65	908	147	82	620	212	136	87	82	190	71	43	Protected	0.37	0.41	0.18	0.26						
							Sat Flow, veh/h	1537	2821	457	1628	1709	1402	1270	813	767	1221	1017	616	Permitted or Split	0.32	0.36	0.16	0.11						
							V/S	0.04	0.32	0.32	0.05	0.36	0.15	0.11	0.11	0.11	0.16	0.07	0.07	selected phasing	0.37	0.41	0.16	0.11	0.41	0.16	**0.63**	**21.6**	**C**	14
1: US 101 & 73rd Ct/73rd St	Protected	Protected	Permitted	Permitted	90	12	Adj Flow Rate, veh/h	1	0	5	100	0	16	5	932	63	21	726	2	Protected	0.08	0.09	0.43	0.57						
							Sat Flow, veh/h	109	149	1288	1249	0	200	1667	1709	1043	770	1704	5	Permitted or Split	0.01	0.08	0.43	0.55						
							V/S	0.01	0.00	0.00	0.08	0.00	0.08	0.00	0.55	0.06	0.03	0.43	0.40	selected phasing	0.01	0.08	0.43	0.57	0.08	0.57	**0.75**	**9.9**	**A**	1
12: US 101 & Hurbert St	Protected	Protected	Permitted	Permitted	120	12	Adj Flow Rate, veh/h													Protected	0.00	0.00	0.00	0.00						
							Sat Flow, veh/h													Permitted or Split	0.00	0.00	0.00	0.00						
							V/S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	selected phasing	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	**0**	**A**	12
6: US 101 & 20th St	Protected	Protected	Split	Split	120	16	Adj Flow Rate, veh/h	43	59	86	239	186	97	65	1425	124	86	1156	22	Protected	0.21	0.23	0.39	0.53						
							Sat Flow, veh/h	711	976	1416	1654	1081	564	1641	2998	259	1628	3259	62	Permitted or Split	0.06	0.17	0.35	0.48						
							V/S	0.06	0.06	0.06	0.14	0.17	0.17	0.04	0.48	0.48	0.05	0.35	0.35	selected phasing	0.06	0.17	0.39	0.53	0.23	0.53	**0.88**	**40.2**	**D**	6

Sheet Description:
This sheet reads in the adjusted flow rate and the saturation flow rate from Synchro and divides them to calculated the V/S for each movement.
The critical flow calculator calculates the critical v/s for each conflicting phase pair.
for protected phases, this v/s is the left turn v/s plus the max of the opposing movement v/s
for the permitted and split phases, this v/s is the max of the three movement v/s
The next step selects the proper v/s based on phasing provided
V/S by east-west and north-south is selected by taking the max of the phase pairs or by adding them (if split phasing)
If overlap calculator was selected in input section and overlap phases were indicated, then overlap v/s for intersection is calculated. See details below
If the right turn v/s is greater than the through v/s for the right turn overlap approach, then the right turn is assumed the critical movement and intersection v/c calc will use the v/s overlap instead of approach v/s
The final step in v/c calculation uses the approach v/s ratios, cycle length, and lost time to calculate overall intersection v/c
Delay and LOS are read directly from the HCM 6 report

Overlap Calculator Details
Overlap calculator reads in whether an overlap phase is in use and what type of phasing is associated with the right turn approach and the overlapped approach
V/S is read in for right turn movement, and remaining approaches from previous calculations
-right turn overlap v/s is just the v/s for the right turn movement (i.e. NBR)
-right turn approach v/s is the critical v/s associated with the right turn approaches (i.e. NB/SB) and is calculated differently for protected vs split
-overlap approach v/s is the critical v/s associated with the overlap approaches (i.e. EB/WB) and is calculated differently for protected vs split phasing
The v/s overlap column sums the 3 v/s values for the overlap phasing to get the total v/s overlap to be used in the v/c calculation
If there are overlaps for multiple approaches, the v/s overlap will use the greatest of the approaches for most conservative approach
Use Overlap Calculator' must be enabled and 'Use OV V/S' must be showing in V/S Overlap column in order for overlap v/s to be used in final v/c calculation

	use dropdown	BEGIN	Sat. Flow Default	1700	1	3	4	5	6	7	8	9	10	11	12	13	14	Outputs					
Intersection ID and Name	**Control Type**	CALCULATIONS	**Major Approach**	**Row Reference**		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**		**NB**	**SB**	**EB**	**WB**	**Synchro ID**
1: US 101 & 73rd Ct/73rd St	TWSC		#N/A	7														1: US 101 & 73rd Ct/73rd St V/C	**0.00**	**0.00**	**0.00**	**0.00**	**1**
				8														1: US 101 & 73rd Ct/73rd St Delay	**0.00**	**0.00**	**0.00**	**0.00**	
				19		0	0	0	0	0	0	0	0	0	0	0	0	1: US 101 & 73rd Ct/73rd St LOS	**A**	**A**	**A**	**A**	
					Major V/C Lanes	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C																		
					Minor (or AWSC) V/C																		
				45																			
				47																			
				48																			
				49																			
3: US 101 & Oceanview Dr	TWSC		NB/SB	7	Movement	EBL		EBR				NBL	NBT			SBT	SBR	3: US 101 & Oceanview Dr V/C	**0.72**	**0.61**	**1.12**	**0.00**	**3**
				8	Lane Configurations	1		0				1	1			1	1	3: US 101 & Oceanview Dr Delay	**11.10**	**0.00**	**156.90**	**0.00**	
				19	Mvmt Flow	138	0	64	0	0	0	21	1223	0	0	1032	59	3: US 101 & Oceanview Dr LOS	**B**	**A**	**F**	**A**	
				10	Major V/C Lanes	LTR	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C							0.04	0.72			0.61	0.03						
					Minor (or AWSC) V/C	1.12																	
				45	Minor Lane/Major Mvmt	0	NBL	NBT	EBLn1	SBT	SBR	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.04	-	1.12	-	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	11.1	-	156.9	-	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	-	F	-	-	0	0	0	0	0	0						
4: US 101 & 36th Street	TWSC		NB/SB	7	Movement				WBL		WBR		NBT	NBR	SBL	SBT		4: US 101 & 36th Street V/C	**0.68**	**0.62**	**0.00**	**0.24**	**4**
				8	Lane Configurations				1		0		1	1	1	1		4: US 101 & 36th Street Delay	**0.00**	**11.20**	**0.00**	**31.50**	
				19	Mvmt Flow	0	0	0	27	0	16	0	1154	43	11	1059	0	4: US 101 & 36th Street LOS	**A**	**B**	**A**	**D**	
				70	Major V/C Lanes	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R						
					Major V/C								0.68	0.03	0.02	0.62							
					Minor (or AWSC) V/C				0.24														
				45	Minor Lane/Major Mvmt	0	NBT	NBR	WBLn1	SBL	SBT	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	-	-	0.24	0.02	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	-	-	31.5	11.2	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	-	-	D	B	-	0	0	0	0	0	0						
5: US 101 & 31st St	TWSC		NB/SB	7	Movement				WBL		WBR		NBT	NBR	SBL	SBT		5: US 101 & 31st St V/C	**0.71**	**0.64**	**0.00**	**0.30**	**5**
				8	Lane Configurations				1		0		1	1	1	1		5: US 101 & 31st St Delay	**0.00**	**12.00**	**0.00**	**36.80**	
				19	Mvmt Flow	0	0	0	38	0	11	0	1212	98	22	1082	0	5: US 101 & 31st St LOS	**A**	**B**	**A**	**E**	
				127	Major V/C Lanes	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R						
					Major V/C								0.71	0.06	0.04	0.64							
					Minor (or AWSC) V/C				0.30														
				45	Minor Lane/Major Mvmt	0	NBT	NBR	WBLn1	SBL	SBT	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	-	-	0.30	0.04	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	-	-	36.8	12.0	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	-	-	E	B	-	0	0	0	0	0	0						
10: US 101 & Angle St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	10: US 101 & Angle St V/C	**0.00**	**0.38**	**0.06**	**0.00**	**10**
				8	Lane Configurations	0	1	0	0	0	2	0	0	0	0	2	0	10: US 101 & Angle St Delay	**0.00**	**0.00**	**15.00**	**0.00**	
				19	Mvmt Flow	0	0	22	0	0	1126	0	0	0	0	1258	49	10: US 101 & Angle St LOS	**A**	**A**	**C**	**A**	
				184	Major V/C Lanes	LTR	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C		0.01	0.01			0.33					0.38	0.38						
					Minor (or AWSC) V/C	0.06																	
				45	Minor Lane/Major Mvmt	0	EBLn1	SBT	SBR	0	0	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.06	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	15.0	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	C	-	-	0	0	0	0	0	0	0	0						
12: US 101 & Bayley St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	12: US 101 & Bayley St V/C	**0.37**	**0.41**	**0.79**	**0.49**	**12**
				8	Lane Configurations	0	1	0	0	1	0	1	2	0	0	2	0	12: US 101 & Bayley St Delay	**12.90**	**11.60**	**110.60**	**79.00**	
				19	Mvmt Flow	17	0	67	11	0	33	28	1233	11	11	1328	22	12: US 101 & Bayley St LOS	**B**	**B**	**F**	**F**	
				241	Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C		0.04	0.04		0.02	0.02	0.06	0.37	0.37	0.41	0.40	0.40						
					Minor (or AWSC) V/C	0.79			0.49														
				45	Minor Lane/Major Mvmt	0	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.06	-	-	0.79	0.49	0.02	-	-	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	12.9	-	-	110.6	79.0	11.6	0.4	-	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	-	-	F	F	B	A	-	0	0	0						
13: Benton St & US 20	TWSC		EB/WB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	13: Benton St & US 20 V/C	**1.05**	**0.46**	**0.46**	**0.39**	**13**
				8	Lane Configurations	1	1	0	1	1	0	0	1	0	0	1	0	13: Benton St & US 20 Delay	**118.20**	**55.80**	**8.90**	**10.10**	
				19	Mvmt Flow	16	732	47	126	658	5	21	5	221	5	11	42	13: Benton St & US 20 LOS	**F**	**F**	**A**	**B**	
				298	Major V/C Lanes	L	T or TR	TR or R	L	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
					Major V/C	0.02	0.46	0.46	0.15	0.39	0.39		0.13	0.13		0.03	0.03						
					Minor (or AWSC) V/C							1.05			0.46								
				45	Minor Lane/Major Mvmt	0	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	0	0	0						
				47	HCM Lane V/C Ratio	0.00	1.05	0.02	-	-	0.15	-	-	0.46	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	118.2	8.9	-	-	10.1	-	-	55.8	0.0	0.0	0.0						
				49	HCM Lane LOS	0	F	A	-	-	B	-	-	F	0	0	0						
15: Oceanview Dr & Pacific Pl/25th St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	15: Oceanview Dr & Pacific Pl/25th St V/C	**0.15**	**0.08**	**0.00**	**0.27**	**15**
				8	Lane Configurations	0	1	0	0	1	0	0	1	0	0	1	0	15: Oceanview Dr & Pacific Pl/25th St Delay	**0.00**	**7.80**	**0.00**	**12.30**	

Intersection ID and Name	use dropdown Control Type	BEGIN CALCULATIONS	Sat. Flow Default Major Approach	1700 Row Reference	1	3 EBL	4 EBT	5 EBR	6 WBL	7 WBT	8 WBR	9 NBL	10 NBT	11 NBR	12 SBL	13 SBT	14 SBR	Outputs	NB	SB	EB	WB	Synchro ID
				19	Mvmt Flow	0	0	0	99	0	86	0	136	123	25	111	0	15: Oceanview Dr & Pacific Pl/25th St LOS	A	A	A	B	
				355	Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
					Major V/C		0.00	0.00		0.05	0.05		0.15	0.15	0.08	0.07	0.07						
					Minor (or AWSC) V/C	-			0.27														
				45	Minor Lane/Major Mvmt	0	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	0	0	0						
				47	HCM Lane V/C Ratio	0.00	-	-	-	-	0.27	0.02	-	-	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	0.0	-	-	0.0	12.3	7.8	0.0	-	0.0	0.0	0.0						
				49	HCM Lane LOS	0	A	-	-	A	B	A	A	-	0	0	0						
16: Nye St & 11th St	TWSC		EB/WB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	16: Nye St & 11th St V/C	0.26	0.14	0.03	0.04	16
				8	Lane Configurations	0	1	0	0	1	0	0	1	0	0	1	0	16: Nye St & 11th St Delay	10.90	10.80	7.30	7.30	
				19	Mvmt Flow	6	38	6	19	31	13	19	125	69	19	75	6	16: Nye St & 11th St LOS	B	B	A	A	
				412	Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
					Major V/C	0.03	0.03	0.03	0.04	0.03	0.03		0.11	0.11		0.05	0.05						
					Minor (or AWSC) V/C							0.26			0.14								
				45	Minor Lane/Major Mvmt	0	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.26	0.00	-	-	0.01	-	-	0.14	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	10.9	7.3	0.0	-	7.3	0.0	-	10.8	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	A	A	-	A	A	-	B	0	0	0						
17: Harney St & 7th St	AWSC		N/A	9	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	17: Harney St & 7th St V/C	0.22	0.00	0.22	0.08	17
				10	Lane Configurations	0	1	0	0	1	0	0	1	1	0	1	0	17: Harney St & 7th St Delay	9.80	7.80	8.10	8.10	
				15	Mvmt Flow	1	45	152	28	34	0	140	0	39	0	1	0	17: Harney St & 7th St LOS	A	A	A	A	
				471	Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LT	T or TR	TR or R	LTR	T or TR	TR or R						
					Major V/C		0.12	0.12		0.02	0.02		0.00	0.02		0.00	0.00						
					Minor (or AWSC) V/C	0.22			0.08			0.22	0.05		0.00								
				29	Lane	0	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	0	0	0	0	0	0						
				45	HCM Lane V/C Ratio	0.00	0.22	0.05	0.22	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
				46	HCM Control Delay	0.0	9.8	7.3	8.1	8.1	7.8	0.0	0.0	0.0	0.0	0.0	0.0						
				47	HCM Lane LOS	0	A	A	A	A	A	0	0	0	0	0	0						
18: 9th St & Hurbert St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	18: 9th St & Hurbert St V/C	0.43	0.00	0.56	0.67	18
				8	Lane Configurations	1	1	0	0	1	1	0	2	0	0	0	0	18: 9th St & Hurbert St Delay	7.30	0.00	77.50	90.20	
				19	Mvmt Flow	10	57	0	0	72	62	52	1356	26	0	0	0	18: 9th St & Hurbert St LOS	A	A	F	F	
				524	Major V/C Lanes	L	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C		0.03	0.03		0.04	0.04	0.43	0.41	0.41									
					Minor (or AWSC) V/C	0.11	0.56		0.67	0.16													
				45	Minor Lane/Major Mvmt	0	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.03	-	-	0.11	0.56	0.67	0.16	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	7.3	0.5	-	48.5	77.5	90.2	16.3	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	A	A	-	E	F	F	C	0	0	0	0						
19: 9th St & Abbey St	TWSC		EB/WB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	19: 9th St & Abbey St V/C	0.23	0.21	0.06	0.09	19
				8	Lane Configurations	0	1	0	0	1	0	0	1	0	0	1	0	19: 9th St & Abbey St Delay	13.00	13.10	7.60	7.40	
				19	Mvmt Flow	30	42	18	1	90	54	24	96	12	48	54	18	19: 9th St & Abbey St LOS	B	B	A	A	
				581	Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
					Major V/C	0.06	0.04	0.04	0.09	0.08	0.08		0.06	0.06		0.04	0.04						
					Minor (or AWSC) V/C							0.23			0.21								
				45	Minor Lane/Major Mvmt	0	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.23	0.02	-	-	0.00	-	-	0.21	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	13.0	7.6	0.0	-	7.4	0.0	-	13.1	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	A	A	-	A	A	-	B	0	0	0						
20: Bay Blvd & Moore Dr	TWSC		NB/SB	7	Movement	EBL		EBR				NBL	NBT			SBT	SBR	20: Bay Blvd & Moore Dr V/C	0.11	0.10	0.33	0.00	20
				8	Lane Configurations	1		0				1	1			1	1	20: Bay Blvd & Moore Dr Delay	7.90	0.00	14.40	0.00	
				19	Mvmt Flow	72	0	111	0	0	0	161	178	0	0	172	122	20: Bay Blvd & Moore Dr LOS	A	A	B	A	
				638	Major V/C Lanes	LTR	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C							0.11	0.10			0.10	0.07						
					Minor (or AWSC) V/C	0.33																	
				45	Minor Lane/Major Mvmt	0	NBL	NBT	EBLn1	SBT	SBR	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.11	-	0.33	-	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	7.9	-	14.4	-	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	A	-	B	-	-	0	0	0	0	0	0						

Sheet Description:

This sheet reads in lane configurations by representing exclusive through or shared lanes with the number of lanes in the through movement, and any exclusive number of turn lanes in the respective turn movement. So a single LTR lane would have 1 under through and 0s under left and right.

This sheet also reads in movement flow and select v/c, LOS, and delay results. The calculations are shown in the box.

Calculations are split out by major and minor approach v/c; Major approach is determined from free approaches in report

The major v/c lanes row indicates the left turn lane configuration for each approach. This is important to determine how to add in the delay from the left turns to the overall calculated v/c for the major approach

In the major v/c row, left turn v/c is read from the report, while remaining movement v/c ratios are calculated based on the methodology given in the ODOT APM and the provided default saturation flow rate of 1700 (can be changed by user)

In the minor v/c row, v/c ratios by lane are calculated based on the ODOT APM method using volume and assumed saturation flow rate

The v/c ratio by approach is the max of the v/c by lane as calculated in the major or minor v/c rows

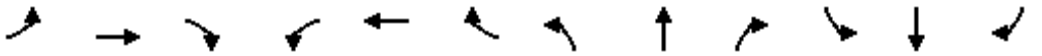
LOS and Delay by approach are read in from the report

For AWSC, all approaches are treated as minor approaches and the calculations remain the same

The summary table selects the worst approach for both directions and concatenates the results with a / for the final summary table for TWSC. For AWSC, the overall worst approach is reported.

SECTION 2. HCM REPORTS

FINANCIALLY CONSTRAINED WITHOUT PEAKING



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	5	95	0	15	5	885	60	20	690	2
Future Volume (veh/h)	1	0	5	95	0	15	5	885	60	20	690	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1654	1750	1750	1750	1709	1231	808	1709	1750
Adj Flow Rate, veh/h	1	0	5	95	0	15	5	885	60	20	690	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	7	0	0	0	3	38	69	3	0
Cap, veh/h	96	13	127	256	0	19	470	1059	646	230	1085	3
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	0.03	0.62	0.62	0.04	0.64	0.60
Sat Flow, veh/h	124	136	1297	1251	0	198	1667	1709	1043	770	1703	5
Grp Volume(v), veh/h	6	0	0	110	0	0	5	885	60	20	0	692
Grp Sat Flow(s),veh/h/ln	1557	0	0	1449	0	0	1667	1709	1043	770	0	1708
Q Serve(g_s), s	0.0	0.0	0.0	3.5	0.0	0.0	0.1	20.5	1.2	0.5	0.0	12.4
Cycle Q Clear(g_c), s	0.2	0.0	0.0	3.7	0.0	0.0	0.1	20.5	1.2	0.5	0.0	12.4
Prop In Lane	0.17		0.83	0.86		0.14	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	236	0	0	275	0	0	470	1059	646	230	0	1088
V/C Ratio(X)	0.03	0.00	0.00	0.40	0.00	0.00	0.01	0.84	0.09	0.09	0.00	0.64
Avail Cap(c_a), veh/h	648	0	0	679	0	0	625	1802	1100	288	0	1801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	0.0	22.1	0.0	0.0	4.9	7.6	3.9	7.8	0.0	5.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	1.8	0.1	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.3	0.0	0.0	0.0	2.9	0.1	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.6	0.0	0.0	23.1	0.0	0.0	4.9	9.4	3.9	8.0	0.0	6.2
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		6			110			950			712	
Approach Delay, s/veh		20.6			23.1			9.0			6.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	35.1		8.9	5.3	36.0		8.9				
Change Period (Y+Rc), s	5.0	6.0		4.0	5.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	51.0		19.0	5.0	51.0		19.0				
Max Q Clear Time (g_c+I1), s	2.5	22.5		2.2	2.1	14.4		5.7				
Green Ext Time (p_c), s	0.0	6.6		0.0	0.0	4.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		8.8	
HCM 6th LOS		A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	5	90	95	0	15	55	1080	120	30	850	30
Future Volume (veh/h)	35	5	90	95	0	15	55	1080	120	30	850	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1736	1750	1750	1750	1695	1682	1750	1750	1695	1750
Adj Flow Rate, veh/h	35	5	90	95	0	15	55	1080	0	30	850	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	1	0	0	0	4	5	0	0	4	0
Cap, veh/h	56	4	294	59	0	296	75	1125		51	1107	
Arrive On Green	0.20	0.20	0.20	0.20	0.00	0.20	0.05	0.67	0.00	0.03	0.65	0.00
Sat Flow, veh/h	0	21	1457	0	0	1468	1615	1682	1483	1667	1695	1483
Grp Volume(v), veh/h	40	0	90	95	0	15	55	1080	0	30	850	0
Grp Sat Flow(s),veh/h/ln	21	0	1457	0	0	1468	1615	1682	1483	1667	1695	1483
Q Serve(g_s), s	0.0	0.0	6.4	0.0	0.0	1.0	4.1	72.1	0.0	2.2	42.4	0.0
Cycle Q Clear(g_c), s	24.0	0.0	6.4	24.0	0.0	1.0	4.1	72.1	0.0	2.2	42.4	0.0
Prop In Lane	0.87		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	0	294	59	0	296	75	1125		51	1107	
V/C Ratio(X)	0.67	0.00	0.31	1.60	0.00	0.05	0.73	0.96		0.59	0.77	
Avail Cap(c_a), veh/h	60	0	294	59	0	296	80	1143		82	1152	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.0	0.0	41.2	60.5	0.0	39.1	57.1	18.6	0.0	58.1	14.7	0.0
Incr Delay (d2), s/veh	23.5	0.0	0.4	336.0	0.0	0.1	26.1	18.0	0.0	8.0	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.4	7.4	0.0	0.4	2.2	28.5	0.0	1.0	15.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.5	0.0	41.7	396.5	0.0	39.1	83.2	36.5	0.0	66.1	18.3	0.0
LnGrp LOS	F	A	D	F	A	D	F	D		E	B	
Approach Vol, veh/h		130			110			1135	A		880	A
Approach Delay, s/veh		53.9			347.7			38.8			19.9	
Approach LOS		D			F			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	83.3		28.5	7.7	85.2		28.5
Change Period (Y+Rc), s	4.5	6.0		4.5	4.5	6.0		4.5
Max Green Setting (Gmax), s	5.5	80.5		24.0	5.5	80.5		24.0
Max Q Clear Time (g_c+I1), s	6.1	44.4		26.0	4.2	74.1		26.0
Green Ext Time (p_c), s	0.0	13.4		0.0	0.0	5.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	130	60	20	1150	970	55
Future Vol, veh/h	130	60	20	1150	970	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	300	-	-	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	11	5	4	4
Mvmt Flow	130	60	20	1150	970	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2160	970	1025	0	-	0
Stage 1	970	-	-	-	-	-
Stage 2	1190	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.21	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.299	-	-	-
Pot Cap-1 Maneuver	~ 53	310	644	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 51	310	644	-	-	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	359	-	-	-	-	-
Stage 2	291	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	103.2	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	644	-	198	-	-
HCM Lane V/C Ratio	0.031	-	0.96	-	-
HCM Control Delay (s)	10.8	-	103.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	15	1085	40	10	995
Future Vol, veh/h	25	15	1085	40	10	995
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	275	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	31	4	0	0	3
Mvmt Flow	25	15	1085	40	10	995

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2100	1085	0	0	1125	0
Stage 1	1085	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Critical Hdwy	6.4	6.51	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.579	-	-	2.2	-
Pot Cap-1 Maneuver	58	231	-	-	628	-
Stage 1	327	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	57	231	-	-	628	-
Mov Cap-2 Maneuver	180	-	-	-	-	-
Stage 1	327	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	196	628	-
HCM Lane V/C Ratio	-	-	0.204	0.016	-
HCM Control Delay (s)	-	-	28	10.8	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-

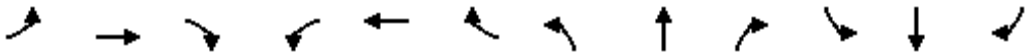
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	10	1115	90	20	995
Future Vol, veh/h	35	10	1115	90	20	995
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	50	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	14	5	0	0	3
Mvmt Flow	35	10	1115	90	20	995

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2150	1115	0	0	1205	0
Stage 1	1115	-	-	-	-	-
Stage 2	1035	-	-	-	-	-
Critical Hdwy	6.4	6.34	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	-	-	2.2	-
Pot Cap-1 Maneuver	54	239	-	-	586	-
Stage 1	316	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	52	239	-	-	586	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	316	-	-	-	-	-
Stage 2	333	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	183	586	-
HCM Lane V/C Ratio	-	-	0.246	0.034	-
HCM Control Delay (s)	-	-	31	11.4	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	55	80	325	30	90	60	1325	115	80	1075	20
Future Volume (veh/h)	40	55	80	325	30	90	60	1325	115	80	1075	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1723	1695	1736	1750	1723	1723	1695	1750	1709	1709	1750
Adj Flow Rate, veh/h	40	55	80	222	173	90	60	1325	115	80	1075	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	4	1	0	2	2	4	0	3	3	0
Cap, veh/h	56	77	111	307	200	104	82	1657	143	81	1803	34
Arrive On Green	0.07	0.08	0.08	0.19	0.19	0.18	0.05	0.55	0.54	0.05	0.55	0.54
Sat Flow, veh/h	710	977	1415	1654	1082	563	1641	2998	259	1628	3261	61
Grp Volume(v), veh/h	95	0	80	222	0	263	60	710	730	80	535	560
Grp Sat Flow(s),veh/h/ln	1687	0	1415	1654	0	1644	1641	1611	1647	1628	1624	1698
Q Serve(g_s), s	6.6	0.0	6.6	15.2	0.0	18.6	4.3	42.3	42.8	5.9	26.4	26.4
Cycle Q Clear(g_c), s	6.6	0.0	6.6	15.2	0.0	18.6	4.3	42.3	42.8	5.9	26.4	26.4
Prop In Lane	0.42		1.00	1.00		0.34	1.00		0.16	1.00		0.04
Lane Grp Cap(c), veh/h	133	0	111	307	0	305	82	890	910	81	898	939
V/C Ratio(X)	0.72	0.00	0.72	0.72	0.00	0.86	0.73	0.80	0.80	0.98	0.60	0.60
Avail Cap(c_a), veh/h	169	0	141	358	0	356	82	890	910	81	898	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	0.0	54.0	46.0	0.0	47.5	56.2	21.5	21.6	56.9	17.9	17.9
Incr Delay (d2), s/veh	8.5	0.0	10.3	5.3	0.0	16.5	21.6	5.7	5.7	93.7	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.7	6.7	0.0	9.1	2.3	16.4	17.0	4.5	10.2	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	0.0	64.3	51.3	0.0	63.9	77.8	27.1	27.4	150.7	20.8	20.7
LnGrp LOS	E	A	E	D	A	E	E	C	C	F	C	C
Approach Vol, veh/h		175			485			1500			1175	
Approach Delay, s/veh		63.4			58.2			29.3			29.6	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	70.4		26.2	10.0	70.3		13.4				
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5				
Max Green Setting (Gmax), s	5.5	59.0		25.5	5.5	59.0		11.5				
Max Q Clear Time (g_c+I1), s	6.3	28.4		20.6	7.9	44.8		8.6				
Green Ext Time (p_c), s	0.0	16.0		0.9	0.0	11.7		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		35.4
HCM 6th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	15	25	30	10	50	10	1500	15	15	1445	25
Future Volume (veh/h)	75	15	25	30	10	50	10	1500	15	15	1445	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1695	1750	1750	1750	1709	1750	1750	1709	1750
Adj Flow Rate, veh/h	75	15	25	30	10	50	10	1500	15	15	1445	25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	4	0	0	0	3	0	0	3	0
Cap, veh/h	143	27	34	82	34	95	23	2547	25	29	2537	44
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.03	1.00	1.00	0.03	1.00	1.00
Sat Flow, veh/h	859	248	307	381	313	868	1667	3293	33	1667	3264	56
Grp Volume(v), veh/h	115	0	0	90	0	0	10	739	776	15	718	752
Grp Sat Flow(s),veh/h/ln	1414	0	0	1562	0	0	1667	1624	1702	1667	1624	1697
Q Serve(g_s), s	3.1	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	9.5	0.0	0.0	6.4	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.65		0.22	0.33		0.56	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	198	0	0	204	0	0	23	1256	1316	29	1262	1319
V/C Ratio(X)	0.58	0.00	0.00	0.44	0.00	0.00	0.44	0.59	0.59	0.52	0.57	0.57
Avail Cap(c_a), veh/h	339	0	0	350	0	0	83	1256	1316	83	1262	1319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.57	0.57	0.57	0.73	0.73	0.73
Uniform Delay (d), s/veh	52.0	0.0	0.0	50.7	0.0	0.0	57.9	0.0	0.0	57.4	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	1.1	0.0	0.0	5.6	1.2	1.1	7.7	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	2.7	0.0	0.0	0.3	0.4	0.4	0.5	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	0.0	0.0	51.8	0.0	0.0	63.5	1.2	1.1	65.1	1.4	1.3
LnGrp LOS	D	A	A	D	A	A	E	A	A	E	A	A
Approach Vol, veh/h		115			90			1525			1485	
Approach Delay, s/veh		54.0			51.8			1.5			2.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	97.2		17.1	6.1	96.8		17.1
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	5.5	76.0		24.5	5.5	76.0		24.5
Max Q Clear Time (g_c+I1), s	2.7	2.0		8.4	3.1	2.0		11.5
Green Ext Time (p_c), s	0.0	48.3		0.3	0.0	50.4		0.4

Intersection Summary		
HCM 6th Ctrl Delay		5.0
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	35	30	75	20	35	35	1445	25	25	1400	30
Future Volume (veh/h)	90	35	30	75	20	35	35	1445	25	25	1400	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1750	1654	1750	1750	1709	1750	1709	1750	1750	1695	1750
Adj Flow Rate, veh/h	90	35	30	75	20	35	35	1445	25	25	1400	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	0	7	0	0	3	0	3	0	0	4	0
Cap, veh/h	120	47	40	105	28	49	50	1963	34	38	1915	41
Arrive On Green	0.11	0.13	0.11	0.10	0.11	0.10	0.03	0.60	0.58	0.05	1.00	1.00
Sat Flow, veh/h	952	370	317	933	249	435	1667	3265	56	1667	3224	69
Grp Volume(v), veh/h	155	0	0	130	0	0	35	718	752	25	699	731
Grp Sat Flow(s),veh/h/ln	1640	0	0	1617	0	0	1667	1624	1698	1667	1611	1682
Q Serve(g_s), s	11.0	0.0	0.0	9.4	0.0	0.0	2.5	37.9	38.1	1.8	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	0.0	9.4	0.0	0.0	2.5	37.9	38.1	1.8	0.0	0.0
Prop In Lane	0.58		0.19	0.58		0.27	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	206	0	0	182	0	0	50	976	1021	38	957	999
V/C Ratio(X)	0.75	0.00	0.00	0.71	0.00	0.00	0.70	0.74	0.74	0.65	0.73	0.73
Avail Cap(c_a), veh/h	219	0	0	216	0	0	83	976	1021	83	957	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.50	0.50	0.79	0.79	0.79
Uniform Delay (d), s/veh	51.4	0.0	0.0	52.2	0.0	0.0	57.7	17.1	17.2	56.8	0.0	0.0
Incr Delay (d2), s/veh	12.2	0.0	0.0	7.7	0.0	0.0	6.4	2.5	2.4	10.4	3.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	4.3	0.0	0.0	1.1	13.8	14.5	0.8	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.7	0.0	0.0	59.9	0.0	0.0	64.1	19.6	19.6	67.2	3.9	3.8
LnGrp LOS	E	A	A	E	A	A	E	B	B	E	A	A
Approach Vol, veh/h		155			130			1505			1455	
Approach Delay, s/veh		63.7			59.9			20.6			4.9	
Approach LOS		E			E			C			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	75.8		17.5	6.8	76.6		19.1
Change Period (Y+Rc), s	4.5	6.5		6.0	4.5	6.5		6.0
Max Green Setting (Gmax), s	5.5	63.5		14.0	5.5	63.5		14.0
Max Q Clear Time (g_c+I1), s	4.4	2.0		11.4	3.8	40.1		13.0
Green Ext Time (p_c), s	0.0	26.5		0.1	0.0	20.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	195	35	255	165	280	75	900	215	335	975	80
Future Volume (veh/h)	205	195	35	255	165	280	75	900	215	335	975	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1736	1736	1695	1654	1723	1723	1750	1695	1614	1695	1709	1709
Adj Flow Rate, veh/h	205	195	35	255	165	280	75	900	0	335	975	80
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	4	7	2	2	0	4	10	4	3	3
Cap, veh/h	238	238	43	284	351	288	100	1162		256	1392	114
Arrive On Green	0.14	0.17	0.16	0.18	0.20	0.20	0.06	0.36	0.00	0.05	0.15	0.15
Sat Flow, veh/h	1654	1422	255	1576	1723	1413	1667	3221	1367	1615	3032	249
Grp Volume(v), veh/h	205	0	230	255	165	280	75	900	0	335	522	533
Grp Sat Flow(s),veh/h/ln	1654	0	1678	1576	1723	1413	1667	1611	1367	1615	1624	1657
Q Serve(g_s), s	14.5	0.0	15.9	19.0	10.1	23.6	5.3	29.7	0.0	19.0	36.6	36.6
Cycle Q Clear(g_c), s	14.5	0.0	15.9	19.0	10.1	23.6	5.3	29.7	0.0	19.0	36.6	36.6
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	238	0	281	284	351	288	100	1162		256	745	761
V/C Ratio(X)	0.86	0.00	0.82	0.90	0.47	0.97	0.75	0.77		1.31	0.70	0.70
Avail Cap(c_a), veh/h	317	0	322	302	351	288	111	1162		256	745	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.59	0.59	0.59
Uniform Delay (d), s/veh	50.2	0.0	48.2	48.1	42.1	47.4	55.5	34.0	0.0	56.9	43.1	43.1
Incr Delay (d2), s/veh	15.4	0.0	13.0	26.4	1.0	45.4	20.5	5.1	0.0	155.4	3.3	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	7.7	9.5	4.4	12.0	2.8	12.5	0.0	19.3	16.7	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	0.0	61.2	74.6	43.0	92.9	76.0	39.1	0.0	212.3	46.3	46.3
LnGrp LOS	E	A	E	E	D	F	E	D		F	D	D
Approach Vol, veh/h		435			700			975	A		1390	
Approach Delay, s/veh		63.3			74.5			41.9			86.3	
Approach LOS		E			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	59.1	21.3	28.4	23.0	47.3	25.6	24.1
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	7.5	49.0	22.5	22.5	18.5	38.0	22.5	22.5
Max Q Clear Time (g_c+I1), s	7.3	38.6	16.5	25.6	21.0	31.7	21.0	17.9
Green Ext Time (p_c), s	0.0	7.3	0.2	0.0	0.0	4.4	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	68.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

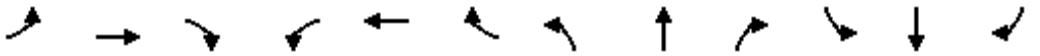
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	20	0	0	1025	0	0	0	0	1145	45
Future Vol, veh/h	0	0	20	0	0	1025	0	0	0	0	1145	45
Conflicting Peds, #/hr	0	0	17	17	0	0	22	0	11	11	0	22
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	16979	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	14	0	2	0	4	0	4	2	2
Mvmt Flow	0	0	20	0	0	1025	0	0	0	0	1145	45

Major/Minor	Minor2			Major2		
Conflicting Flow All	1190	1190	634	-	-	0
Stage 1	1190	1190	-	-	-	-
Stage 2	0	0	-	-	-	-
Critical Hdwy	6.8	6.5	6.9	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	-	-	-
Pot Cap-1 Maneuver	183	189	427	0	-	-
Stage 1	255	263	-	0	-	-
Stage 2	-	-	-	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	175	0	418	-	-	-
Mov Cap-2 Maneuver	175	0	-	-	-	-
Stage 1	250	0	-	-	-	-
Stage 2	-	0	-	-	-	-

Approach	EB	SB
HCM Control Delay, s	14	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	418	-	-
HCM Lane V/C Ratio	0.048	-	-
HCM Control Delay (s)	14	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	30	50	70	60	0	0	0	0	45	1085	20
Future Volume (veh/h)	0	30	50	70	60	0	0	0	0	45	1085	20
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.98		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1750	1750	1709	1682	0				1750	1723	1750
Adj Flow Rate, veh/h	0	30	50	70	60	0				45	1085	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	3	5	0				0	2	0
Cap, veh/h	0	88	146	125	93	0				100	2532	49
Arrive On Green	0.00	0.15	0.15	0.15	0.15	0.00				0.77	0.78	0.77
Sat Flow, veh/h	0	582	970	527	615	0				128	3234	63
Grp Volume(v), veh/h	0	0	80	130	0	0				603	0	547
Grp Sat Flow(s),veh/h/ln	0	0	1552	1142	0	0				1716	0	1708
Q Serve(g_s), s	0.0	0.0	5.6	8.6	0.0	0.0				14.2	0.0	12.3
Cycle Q Clear(g_c), s	0.0	0.0	5.6	14.1	0.0	0.0				14.2	0.0	12.3
Prop In Lane	0.00		0.62	0.54		0.00				0.07		0.04
Lane Grp Cap(c), veh/h	0	0	234	213	0	0				1344	0	1337
V/C Ratio(X)	0.00	0.00	0.34	0.61	0.00	0.00				0.45	0.00	0.41
Avail Cap(c_a), veh/h	0	0	401	367	0	0				1344	0	1337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	45.8	50.5	0.0	0.0				4.4	0.0	4.2
Incr Delay (d2), s/veh	0.0	0.0	0.6	2.1	0.0	0.0				1.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.2	4.0	0.0	0.0				4.7	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	46.4	52.6	0.0	0.0				5.5	0.0	5.1
LnGrp LOS	A	A	D	D	A	A				A	A	A
Approach Vol, veh/h		80			130						1150	
Approach Delay, s/veh		46.4			52.6						5.3	
Approach LOS		D			D						A	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		97.9		22.1				22.1				
Change Period (Y+Rc), s		5.0		4.5				4.5				
Max Green Setting (Gmax), s		80.0		30.5				30.5				
Max Q Clear Time (g_c+I1), s		16.2		16.1				7.6				
Green Ext Time (p_c), s		25.1		0.5				0.3				

Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	60	10	0	30	25	1110	10	10	1195	20
Future Vol, veh/h	15	0	60	10	0	30	25	1110	10	10	1195	20
Conflicting Peds, #/hr	10	0	0	0	0	10	13	0	8	8	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	4	3	0	0	2	0
Mvmt Flow	15	0	60	10	0	30	25	1110	10	10	1195	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1853	2416	621	1791	2421	578	1228	0	0	1128	0	0
Stage 1	1238	1238	-	1173	1173	-	-	-	-	-	-	-
Stage 2	615	1178	-	618	1248	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.18	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.24	-	-	2.2	-	-
Pot Cap-1 Maneuver	47	33	435	52	33	464	552	-	-	627	-	-
Stage 1	189	250	-	207	268	-	-	-	-	-	-	-
Stage 2	450	267	-	448	247	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	29	430	41	29	456	545	-	-	622	-	-
Mov Cap-2 Maneuver	40	29	-	41	29	-	-	-	-	-	-	-
Stage 1	178	235	-	196	254	-	-	-	-	-	-	-
Stage 2	397	253	-	366	232	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	53.2	45	0.3	0.4
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	545	-	-	146	129	622	-	-
HCM Lane V/C Ratio	0.046	-	-	0.514	0.31	0.016	-	-
HCM Control Delay (s)	11.9	-	-	53.2	45	10.9	0.3	-
HCM Lane LOS	B	-	-	F	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	1.2	0	-	-

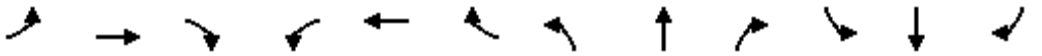
Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	695	45	120	625	5	20	5	210	5	10	40
Future Vol, veh/h	15	695	45	120	625	5	20	5	210	5	10	40
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	6	5	4	4	0	6	0	3	0	0	3
Mvmt Flow	15	695	45	120	625	5	20	5	210	5	10	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	631	0	0	741	0	0	1643	1620	720	1725	1640	630
Stage 1	-	-	-	-	-	-	749	749	-	869	869	-
Stage 2	-	-	-	-	-	-	894	871	-	856	771	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.16	6.5	6.23	7.1	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.554	4	3.327	3.5	4	3.327
Pot Cap-1 Maneuver	961	-	-	857	-	-	78	104	426	71	101	480
Stage 1	-	-	-	-	-	-	398	422	-	349	372	-
Stage 2	-	-	-	-	-	-	330	371	-	355	413	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	960	-	-	856	-	-	57	88	425	30	85	479
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	88	-	30	85	-
Stage 1	-	-	-	-	-	-	391	415	-	343	320	-
Stage 2	-	-	-	-	-	-	252	319	-	174	406	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.6	74.4	42.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	261	960	-	-	856	-	-	150
HCM Lane V/C Ratio	0.9	0.016	-	-	0.14	-	-	0.367
HCM Control Delay (s)	74.4	8.8	-	-	9.9	-	-	42.3
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	7.9	0	-	-	0.5	-	-	1.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	835	135	75	570	195	125	80	75	175	65	40
Future Volume (veh/h)	60	835	135	75	570	195	125	80	75	175	65	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1723	1723	1709	1709	1654	1723	1723	1695	1736	1750	1750
Adj Flow Rate, veh/h	60	835	135	75	570	195	125	80	75	175	65	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	2	2	3	3	7	2	2	4	1	0	0
Cap, veh/h	85	1399	226	104	862	707	378	224	210	333	277	170
Arrive On Green	0.06	0.50	0.48	0.06	0.50	0.50	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1537	2821	456	1628	1709	1402	1280	816	765	1237	1010	621
Grp Volume(v), veh/h	60	484	486	75	570	195	125	0	155	175	0	105
Grp Sat Flow(s),veh/h/ln	1537	1637	1641	1628	1709	1402	1280	0	1580	1237	0	1631
Q Serve(g_s), s	2.8	15.3	15.4	3.3	17.9	5.8	6.1	0.0	5.7	9.7	0.0	3.6
Cycle Q Clear(g_c), s	2.8	15.3	15.4	3.3	17.9	5.8	9.8	0.0	5.7	15.4	0.0	3.6
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.48	1.00		0.38
Lane Grp Cap(c), veh/h	85	811	813	104	862	707	378	0	433	333	0	447
V/C Ratio(X)	0.71	0.60	0.60	0.72	0.66	0.28	0.33	0.00	0.36	0.53	0.00	0.23
Avail Cap(c_a), veh/h	170	1108	1111	247	1228	1008	593	0	699	540	0	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.6	13.1	13.2	33.2	13.3	10.3	24.6	0.0	21.1	27.8	0.0	20.4
Incr Delay (d2), s/veh	7.7	2.7	2.7	6.7	3.3	0.8	0.4	0.0	0.4	1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.6	5.6	1.4	6.8	1.8	1.8	0.0	2.1	2.9	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	15.8	15.9	39.9	16.6	11.1	24.9	0.0	21.5	29.0	0.0	20.7
LnGrp LOS	D	B	B	D	B	B	C	A	C	C	A	C
Approach Vol, veh/h		1030			840			280			280	
Approach Delay, s/veh		17.3			17.4			23.0			25.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	39.9		23.8	8.0	40.5		23.8				
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5				
Max Green Setting (Gmax), s	10.5	48.0		31.5	7.5	51.0		31.5				
Max Q Clear Time (g_c+I1), s	5.3	17.4		17.4	4.8	19.9		11.8				
Green Ext Time (p_c), s	0.0	17.5		1.0	0.0	13.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		19.0	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	55	0	0	70	60	50	1315	25	0	0	0
Future Vol, veh/h	10	55	0	0	70	60	50	1315	25	0	0	0
Conflicting Peds, #/hr	4	0	15	15	0	4	2	0	11	11	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	0	0	6	2	23	0	6	0
Mvmt Flow	10	55	0	0	70	60	50	1315	25	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	799	1453	-	-	1441	685	2	0	0
Stage 1	2	2	-	-	1439	-	-	-	-
Stage 2	797	1451	-	-	2	-	-	-	-
Critical Hdwy	7.5	6.54	-	-	6.5	6.9	4.22	-	-
Critical Hdwy Stg 1	-	-	-	-	5.5	-	-	-	-
Critical Hdwy Stg 2	6.5	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.02	-	-	4	3.3	2.26	-	-
Pot Cap-1 Maneuver	280	129	0	0	134	395	1590	-	-
Stage 1	-	-	0	0	200	-	-	-	-
Stage 2	351	194	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	113	112	-	-	116	391	1587	-	-
Mov Cap-2 Maneuver	113	112	-	-	116	-	-	-	-
Stage 1	-	-	-	-	173	-	-	-	-
Stage 2	155	168	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	61	47.6	0.6
HCM LOS	F	E	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2
Capacity (veh/h)	1587	-	-	113	112	116	391
HCM Lane V/C Ratio	0.032	-	-	0.088	0.491	0.603	0.153
HCM Control Delay (s)	7.3	0.4	-	39.9	64.8	74.8	15.9
HCM Lane LOS	A	A	-	E	F	F	C
HCM 95th %tile Q(veh)	0.1	-	-	0.3	2.2	3	0.5

Intersection ID and Name	use dropdown NB PhasingType	use dropdown SB PhasingType	use dropdown EB PhasingType	use dropdown WB PhasingType	Cycle Length	Lost Time	BEGIN CALCULATIONS	1 EBL	3 EBT	4 EBR	5 WBL	6 WBT	7 WBR	8 NBL	9 NBT	10 NBR	11 SBL	12 SBT	13 SBR	14	Critical Flow Calculator WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S	Intersection V/C	HCM 6th Ctrl Delay	HCM 6th LOS	Synchro ID
2: US 101 & Lighthouse Dr/52nd St	Protected	Protected	Permitted	Permitted	125	12	Adj Flow Rate, veh/h	35	5	90	95	0	15	55	1080	0	30	850	0	Protected	0.24	0.01	0.54	0.66						
							Sat Flow, veh/h	0	21	1457	0	0	1468	1615	1682	1483	1667	1695	1483	Permitted or Split	0.24	0.01	0.50	0.64						
							V/S	0.00	0.24	0.06	0.00	0.00	0.01	0.03	0.64	0.00	0.02	0.50	0.00	selected phasing	0.24	0.01	0.54	0.66	0.24	0.66	**0.99**	**47.4**	**D**	2
7: US 101 & 11th St	Protected	Protected	Permitted	Permitted	120	12	Adj Flow Rate, veh/h	75	15	25	30	10	50	10	1500	15	15	1445	25	Protected	0.16	0.14	0.45	0.46						
							Sat Flow, veh/h	859	248	307	381	313	868	1667	3293	33	1667	3264	56	Permitted or Split	0.09	0.08	0.45	0.46						
							V/S	0.09	0.06	0.08	0.08	0.03	0.06	0.01	0.46	0.45	0.01	0.44	0.45	selected phasing	0.09	0.08	0.45	0.46	0.09	0.46	**0.61**	**5**	**A**	7
8: US 101 & 6th St	Protected	Protected	Split	Split	120	16	Adj Flow Rate, veh/h	90	35	30	75	20	35	35	1445	25	25	1400	30	Protected	0.18	0.17	0.46	0.46						
							Sat Flow, veh/h	952	370	317	933	249	435	1667	3265	56	1667	3224	69	Permitted or Split	0.09	0.08	0.43	0.45						
							V/S	0.09	0.09	0.09	0.08	0.08	0.08	0.02	0.44	0.45	0.01	0.43	0.43	selected phasing	0.09	0.08	0.46	0.46	0.18	0.46	**0.73**	**17.2**	**B**	8
9: US 101 & Olive St/US 20	Protected	Protected	Protected	Protected	120	16	Adj Flow Rate, veh/h	205	195	35	255	165	280	75	900	0	335	975	80	Protected	0.30	0.32	0.37	0.49						
							Sat Flow, veh/h	1654	1422	255	1576	1723	1413	1667	3221	1367	1615	3032	249	Permitted or Split	0.14	0.20	0.32	0.28						
							V/S	0.12	0.14	0.14	0.16	0.10	0.20	0.04	0.28	0.00	0.21	0.32	0.32	selected phasing	0.30	0.32	0.37	0.49	0.32	0.49	**0.93**	**68.7**	**E**	9
11: US 101 & Hurbert St	Protected	Protected	Permitted	Permitted	120	12	Adj Flow Rate, veh/h	0	30	50	70	60	0	0	0	0	45	1085	20	Protected	0.18	0.10	0.34	0.35						
							Sat Flow, veh/h	0	582	970	527	615	0	0	0	0	128	3234	63	Permitted or Split	0.05	0.13	0.35	0.00						
							V/S	0.00	0.05	0.05	0.13	0.10	0.00	0.00	0.00	0.00	0.35	0.34	0.32	selected phasing	0.05	0.13	0.34	0.35	0.13	0.35	**0.54**	**12.2**	**B**	11
14: Moore Dr/Harney St & US 20	Permitted	Permitted	Protected	Protected	104	12	Adj Flow Rate, veh/h	60	835	135	75	570	195	125	80	75	175	65	40	Protected	0.34	0.37	0.16	0.24						
							Sat Flow, veh/h	1537	2821	456	1628	1709	1402	1280	816	765	1237	1010	621	Permitted or Split	0.30	0.33	0.14	0.10						
							V/S	0.04	0.30	0.30	0.05	0.33	0.14	0.10	0.10	0.10	0.14	0.06	0.06	selected phasing	0.34	0.37	0.14	0.10	0.37	0.14	**0.58**	**19**	**B**	14
1: US 101 & 73rd Ct/73rd St	Protected	Protected	Permitted	Permitted	90	12	Adj Flow Rate, veh/h	1	0	5	95	0	15	5	885	60	20	690	2	Protected	0.08	0.08	0.41	0.54						
							Sat Flow, veh/h	124	136	1297	1251	0	198	1667	1709	1043	770	1703	5	Permitted or Split	0.01	0.08	0.41	0.52						
							V/S	0.01	0.00	0.00	0.08	0.00	0.08	0.00	0.52	0.06	0.03	0.41	0.40	selected phasing	0.01	0.08	0.41	0.54	0.08	0.54	**0.72**	**8.8**	**A**	1
12: US 101 & Hurbert St	Protected	Protected	Permitted	Permitted	120	12	Adj Flow Rate, veh/h													Protected	0.00	0.00	0.00	0.00						
							Sat Flow, veh/h													Permitted or Split	0.00	0.00	0.00	0.00						
							V/S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	selected phasing	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	**0**	**A**	12
6: US 101 & 20th St	Protected	Protected	Split	Split	120	16	Adj Flow Rate, veh/h	40	55	80	222	173	90	60	1325	115	80	1075	20	Protected	0.19	0.22	0.37	0.49						
							Sat Flow, veh/h	710	977	1415	1654	1082	563	1641	2998	259	1628	3261	61	Permitted or Split	0.06	0.16	0.33	0.44						
							V/S	0.06	0.06	0.06	0.13	0.16	0.16	0.04	0.44	0.44	0.05	0.33	0.33	selected phasing	0.06	0.16	0.37	0.49	0.22	0.49	**0.82**	**35.4**	**D**	6

Sheet Description:
This sheet reads in the adjusted flow rate and the saturation flow rate from Synchro and divides them to calculated the V/S for each movement.
The critical flow calculator calculates the critical v/s for each conflicting phase pair.
for protected phases, this v/s is the left turn v/s plus the max of the opposing movement v/s
for the permitted and split phases, this v/s is the max of the three movement v/s
The next step selects the proper v/s based on phasing provided
V/S by east-west and north-south is selected by taking the max of the phase pairs or by adding them (if split phasing)
If overlap calculator was selected in input section and overlap phases were indicated, then overlap v/s for intersection is calculated. See details below
If the right turn v/s is greater than the through v/s for the right turn overlap approach, then the right turn is assumed the critical movement and intersection v/c calc will use the v/s overlap instead of approach v/s
The final step in v/c calculation uses the approach v/s ratios, cycle length, and lost time to calculate overall intersection v/c
Delay and LOS are read directly from the HCM 6 report

Overlap Calculator Details
Overlap calculator reads in whether an overlap phase is in use and what type of phasing is associated with the right turn approach and the overlapped approach
V/S is read in for right turn movement, and remaining approaches from previous calculations
-right turn overlap v/s is just the v/s for the right turn movement (i.e. NBR)
-right turn approach v/s is the critical v/s associated with the right turn approaches (i.e. NB/SB) and is calculated differently for protected vs split
-overlap approach v/s is the critical v/s associated with the overlap approaches (i.e. EB/WB) and is calculated differently for protected vs split phasing
The v/s overlap column sums the 3 v/s values for the overlap phasing to get the total v/s overlap to be used in the v/c calculation
If there are overlaps for multiple approaches, the v/s overlap will use the greatest of the approaches for most conservative approach
Use Overlap Calculator' must be enabled and 'Use OV V/S' must be showing in V/S Overlap column in order for overlap v/s to be used in final v/c calculation

Intersection ID and Name	Control Type		Major Approach	Row Reference		1 EBL	3 EBT	4 EBR	5 WBL	6 WBT	7 WBR	8 NBL	9 NBT	10 NBR	11 SBL	12 SBT	13 SBR	14 Outputs	NB	SB	EB	WB	Synchro ID
1: US 101 & 73rd Ct/73rd St	TWSC	BEGIN CALCULATIONS	#N/A	7														1: US 101 & 73rd Ct/73rd St V/C	0.00	0.00	0.00	0.00	1
				8														1: US 101 & 73rd Ct/73rd St Delay	0.00	0.00	0.00	0.00	
				19		0	0	0	0	0	0	0	0	0	0	0	0	1: US 101 & 73rd Ct/73rd St LOS	A	A	A	A	
					Major V/C Lanes	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C																		
					Minor (or AWSC) V/C																		
				45																			
				47																			
				48																			
				49																			
3: US 101 & Oceanview Dr	TWSC		NB/SB	7	Movement	EBL		EBR				NBL	NBT			SBT	SBR	3: US 101 & Oceanview Dr V/C	0.68	0.57	0.96	0.00	3
				8	Lane Configurations		1		0				1	1			1	1	3: US 101 & Oceanview Dr Delay	10.80	0.00	103.20	0.00	
				19	Mvmt Flow	130	0	60	0	0	0	20	1150	0	0	970	55	3: US 101 & Oceanview Dr LOS	B	A	F	A	
				10	Major V/C Lanes	LTR	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C							0.03	0.68			0.57	0.03						
					Minor (or AWSC) V/C	0.96																	
				45	Minor Lane/Major Mvmt	0	NBL	NBT	EBLn1	SBT	SBR	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.03	-	0.96	-	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	10.8	-	103.2	-	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	-	F	-	-	0	0	0	0	0	0						
4: US 101 & 36th Street	TWSC		NB/SB	7	Movement				WBL		WBR		NBT	NBR	SBL	SBT		4: US 101 & 36th Street V/C	0.64	0.59	0.00	0.20	4
				8	Lane Configurations				1		0		1	1	1	1		4: US 101 & 36th Street Delay	0.00	10.80	0.00	28.00	
				19	Mvmt Flow	0	0	0	25	0	15	0	1085	40	10	995	0	4: US 101 & 36th Street LOS	A	B	A	D	
				70	Major V/C Lanes	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R						
					Major V/C								0.64	0.02	0.02	0.59							
					Minor (or AWSC) V/C				0.20														
				45	Minor Lane/Major Mvmt	0	NBT	NBR	WBLn1	SBL	SBT	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	-	-	0.20	0.02	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	-	-	28.0	10.8	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	-	-	D	B	-	0	0	0	0	0	0						
5: US 101 & 31st St	TWSC		NB/SB	7	Movement				WBL		WBR		NBT	NBR	SBL	SBT		5: US 101 & 31st St V/C	0.66	0.59	0.00	0.25	5
				8	Lane Configurations				1		0		1	1	1	1		5: US 101 & 31st St Delay	0.00	11.40	0.00	31.00	
				19	Mvmt Flow	0	0	0	35	0	10	0	1115	90	20	995	0	5: US 101 & 31st St LOS	A	B	A	D	
				127	Major V/C Lanes	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R						
					Major V/C								0.66	0.05	0.03	0.59							
					Minor (or AWSC) V/C				0.25														
				45	Minor Lane/Major Mvmt	0	NBT	NBR	WBLn1	SBL	SBT	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	-	-	0.25	0.03	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	-	-	31.0	11.4	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	-	-	D	B	-	0	0	0	0	0	0						
10: US 101 & Angle St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	10: US 101 & Angle St V/C	0.00	0.35	0.05	0.00	10
				8	Lane Configurations		0	1	0	0	2	0	0	0	0	2	0	10: US 101 & Angle St Delay	0.00	0.00	14.00	0.00	
				19	Mvmt Flow		0	0	20	0	1025	0	0	0	0	1145	45	10: US 101 & Angle St LOS	A	A	B	A	
				184	Major V/C Lanes	LTR	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C			0.01	0.01			0.30					0.35	0.35					
					Minor (or AWSC) V/C		0.05																
				45	Minor Lane/Major Mvmt	0	EBLn1	SBT	SBR	0	0	0	0	0	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.05	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	14.0	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	-	-	0	0	0	0	0	0	0	0						
12: US 101 & Bayley St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	12: US 101 & Bayley St V/C	0.33	0.37	0.51	0.31	12
				8	Lane Configurations		0	1	0	0	1	0	1	2	0	0	2	0	12: US 101 & Bayley St Delay	11.90	10.90	53.20	45.00	
				19	Mvmt Flow	15	0	60	10	0	30	25	1110	10	10	1195	20	12: US 101 & Bayley St LOS	B	B	F	E	
				241	Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R						
					Major V/C			0.04	0.04		0.02	0.02	0.05	0.33	0.33	0.37	0.36	0.36						
					Minor (or AWSC) V/C	0.51			0.31														
				45	Minor Lane/Major Mvmt	0	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.05	-	-	0.51	0.31	0.02	-	-	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	11.9	-	-	53.2	45.0	10.9	0.3	-	0.0	0.0	0.0						
				49	HCM Lane LOS	0	B	-	-	F	E	B	A	-	0	0	0						
13: Benton St & US 20	TWSC		EB/WB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	13: Benton St & US 20 V/C	0.90	0.37	0.44	0.37	13
				8	Lane Configurations	1	1	0	1	1	0	0	1	0	0	1	0	13: Benton St & US 20 Delay	74.40	42.30	8.80	9.90	
				19	Mvmt Flow	15	695	45	120	625	5	20	5	210	5	10	40	13: Benton St & US 20 LOS	F	E	A	A	
				298	Major V/C Lanes	L	T or TR	TR or R	L	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
					Major V/C	0.02	0.44	0.44	0.14	0.37	0.37		0.13	0.13		0.03	0.03						
					Minor (or AWSC) V/C							0.90			0.37								
				45	Minor Lane/Major Mvmt	0	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	0	0	0						
				47	HCM Lane V/C Ratio	0.00	0.90	0.02	-	-	0.14	-	-	0.37	0.00	0.00	0.00						
				48	HCM Control Delay (s)	0.0	74.4	8.8	-	-	9.9	-	-	42.3	0.0	0.0	0.0						
				49	HCM Lane LOS	0	F	A	-	-	A	-	-	E	0	0	0						
15: Oceanview Dr & Pacific Pl/25th St	TWSC		NB/SB	7	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	15: Oceanview Dr & Pacific Pl/25th St V/C	0.12	0.07	0.00	0.20	15
				8	Lane Configurations		0	1	0	0	1	0	0	1	0	0	1	0	15: Oceanview Dr & Pacific Pl/25th St Delay	0.00	7.70	0.00	11.10	

Intersection ID and Name	use dropdown Control Type	BEGIN CALCULATIONS	Sat. Flow Default Major Approach	1700 Row Reference	1 EBL	3 EBT	4 EBR	5 WBL	6 WBT	7 WBR	8 NBL	9 NBT	10 NBR	11 SBL	12 SBT	13 SBR	14 Outputs	NB	SB	EB	WB	Synchro ID
				19 Mvmt Flow	0	0	0	80	0	70	0	110	100	20	90	0	15: Oceanview Dr & Pacific Pl/25th St LOS	A	A	A	B	
				355 Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
				Major V/C		0.00	0.00		0.04	0.04		0.12	0.12	0.07	0.05	0.05						
				Minor (or AWSC) V/C	-			0.20														
				45 Minor Lane/Major Mvmt	0	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	0	0	0						
				47 HCM Lane V/C Ratio	0.00	-	-	-	-	0.20	0.02	-	-	0.00	0.00	0.00						
				48 HCM Control Delay (s)	0.0	0.0	-	-	0.0	11.1	7.7	0.0	-	0.0	0.0	0.0						
				49 HCM Lane LOS	0	A	-	-	A	B	A	A	-	0	0	0						
16: Nye St & 11th St	TWSC		EB/WB	7 Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	16: Nye St & 11th St V/C	0.20	0.10	0.02	0.03	16
				8 Lane Configurations	0	1	0	0	1	0	0	1	0	0	1	0	16: Nye St & 11th St Delay	10.30	10.20	7.30	7.30	
				19 Mvmt Flow	5	30	5	15	25	10	15	100	55	15	60	5	16: Nye St & 11th St LOS	B	B	A	A	
				412 Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
				Major V/C	0.02	0.02	0.02	0.03	0.02	0.02		0.09	0.09		0.04	0.04						
				Minor (or AWSC) V/C							0.20			0.10								
				45 Minor Lane/Major Mvmt	0	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	0	0	0						
				47 HCM Lane V/C Ratio	0.00	0.20	0.00	-	-	0.01	-	-	0.10	0.00	0.00	0.00						
				48 HCM Control Delay (s)	0.0	10.3	7.3	0.0	-	7.3	0.0	-	10.2	0.0	0.0	0.0						
				49 HCM Lane LOS	0	B	A	A	-	A	A	-	B	0	0	0						
17: Harney St & 7th St	AWSC		N/A	9 Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	17: Harney St & 7th St V/C	0.19	0.00	0.19	0.07	17
				10 Lane Configurations	0	1	0	0	1	0	0	1	1	0	1	0	17: Harney St & 7th St Delay	9.50	7.70	7.90	8.00	
				15 Mvmt Flow	1	40	135	25	30	0	125	0	35	0	1	0	17: Harney St & 7th St LOS	A	A	A	A	
				471 Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LT	T or TR	TR or R	LTR	T or TR	TR or R						
				Major V/C		0.10	0.10		0.02	0.02		0.00	0.02		0.00	0.00						
				Minor (or AWSC) V/C	0.19			0.07			0.19	0.04		0.00								
				29 Lane	0	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	0	0	0	0	0	0						
				45 HCM Lane V/C Ratio	0.00	0.19	0.04	0.19	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
				46 HCM Control Delay	0.0	9.5	7.2	7.9	8.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0						
				47 HCM Lane LOS	0	A	A	A	A	A	0	0	0	0	0	0						
18: 9th St & Hurbert St	TWSC		NB/SB	7 Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	18: 9th St & Hurbert St V/C	0.42	0.00	0.49	0.60	18
				8 Lane Configurations	1	1	0	0	1	1	0	2	0	0	0	0	18: 9th St & Hurbert St Delay	7.30	0.00	64.80	74.80	
				19 Mvmt Flow	10	55	0	0	70	60	50	1315	25	0	0	0	18: 9th St & Hurbert St LOS	A	A	F	F	
				524 Major V/C Lanes	L	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R	LT	T or TR	TR or R						
				Major V/C		0.03	0.03		0.04	0.04	0.42	0.39	0.39									
				Minor (or AWSC) V/C	0.09	0.49		0.60	0.15													
				45 Minor Lane/Major Mvmt	0	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	0	0	0	0						
				47 HCM Lane V/C Ratio	0.00	0.03	-	-	0.09	0.49	0.60	0.15	0.00	0.00	0.00	0.00						
				48 HCM Control Delay (s)	0.0	7.3	0.4	-	39.9	64.8	74.8	15.9	0.0	0.0	0.0	0.0						
				49 HCM Lane LOS	0	A	A	-	E	F	F	C	0	0	0	0						
19: 9th St & Abbey St	TWSC		EB/WB	7 Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	19: 9th St & Abbey St V/C	0.18	0.17	0.05	0.07	19
				8 Lane Configurations	0	1	0	0	1	0	0	1	0	0	1	0	19: 9th St & Abbey St Delay	12.10	12.10	7.60	7.40	
				19 Mvmt Flow	25	35	15	1	75	45	20	80	10	40	45	15	19: 9th St & Abbey St LOS	B	B	A	A	
				581 Major V/C Lanes	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R	LTR	T or TR	TR or R						
				Major V/C	0.05	0.03	0.03	0.07	0.07	0.07		0.05	0.05		0.04	0.04						
				Minor (or AWSC) V/C							0.18			0.17								
				45 Minor Lane/Major Mvmt	0	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	0	0	0						
				47 HCM Lane V/C Ratio	0.00	0.18	0.02	-	-	0.00	-	-	0.17	0.00	0.00	0.00						
				48 HCM Control Delay (s)	0.0	12.1	7.6	0.0	-	7.4	0.0	-	12.1	0.0	0.0	0.0						
				49 HCM Lane LOS	0	B	A	A	-	A	A	-	B	0	0	0						
20: Bay Blvd & Moore Dr	TWSC		NB/SB	7 Movement	EBL		EBR				NBL	NBT			SBT	SBR	20: Bay Blvd & Moore Dr V/C	0.10	0.09	0.27	0.00	20
				8 Lane Configurations	1		0				1	1			1	1	20: Bay Blvd & Moore Dr Delay	7.80	0.00	13.10	0.00	
				19 Mvmt Flow	65	0	100	0	0	0	145	160	0	0	155	110	20: Bay Blvd & Moore Dr LOS	A	A	B	A	
				638 Major V/C Lanes	LTR	T or TR	TR or R	LT	T or TR	TR or R	L	T or TR	TR or R	LT	T or TR	TR or R						
				Major V/C							0.10	0.09			0.09	0.06						
				Minor (or AWSC) V/C	0.27																	
				45 Minor Lane/Major Mvmt	0	NBL	NBT	EBLn1	SBT	SBR	0	0	0	0	0	0						
				47 HCM Lane V/C Ratio	0.00	0.10	-	0.27	-	-	0.00	0.00	0.00	0.00	0.00	0.00						
				48 HCM Control Delay (s)	0.0	7.8	-	13.1	-	-	0.0	0.0	0.0	0.0	0.0	0.0						
				49 HCM Lane LOS	0	A	-	B	-	-	0	0	0	0	0	0						

Sheet Description:
This sheet reads in lane configurations by representing exclusive through or shared lanes with the number of lanes in the through movement, and any exclusive number of turn lanes in the respective turn movement. So a single LTR lane would have 1 under through and 0s under left and right.
This sheet also reads in movement flow and select v/c, LOS, and delay results. The calculations are shown in the box.
Calculations are split out by major and minor approach v/c; Major approach is determined from free approaches in report
The major v/c lanes row indicates the left turn lane configuration for each approach. This is important to determine how to add in the delay from the left turns to the overall calculated v/c for the major approach
In the major v/c row, left turn v/c is read from the report, while remaining movement v/c ratios are calculated based on the methodology given in the ODOT APM and the provided default saturation flow rate of 1700 (can be changed by user)
In the minor v/c row, v/c ratios by lane are calculated based on the ODOT APM method using volume and assumed saturation flow rate
The v/c ratio by approach is the max of the v/c by lane as calculated in the major or minor v/c rows
LOS and Delay by approach are read in from the report
For AWSC, all approaches are treated as minor approaches and the calculations remain the same
The summary table selects the worst approach for both directions and concatenates the results with a / for the final summary table for TWSC. For AWSC, the overall worst approach is reported.

MEMORANDUM

DATE: December 8, 2021

TO: Newport TSP Project Management Team

FROM: Andrew Parish, Shayna Rehberg, and Darci Rudzinski, APG

SUBJECT: Newport Transportation System Plan Update
Development Code Amendments

Introduction

The City of Newport is undertaking an update of the City of Newport Transportation System Plan (TSP) consistent with the requirements of Statewide Planning Goal 12 - Transportation. This memorandum identifies needed amendments to the City's Municipal Code, Title 13 Land Division and Title 14 Zoning Code (collectively known as the "Development Code") to be consistent with the updated TSP. This material is an outgrowth of:

- TM #3 – Regulatory Review and Transportation Planning Rule (TPR)
- Code Concepts – Transportation Mitigation and Implementation
- Additional discussion with city staff and the consultant team

Table 1 identifies the proposed amendments and includes a reference number for the associated text that follows the table, with code additions and deletions shown in underline-strikeout text.

Table 1. Municipal Code Recommendations

Recommendation and Discussion	Reference
Identify "Transportation Facilities (operation, maintenance, preservation, and construction in accordance with the city's Transportation System Plan)" as a permitted use in all land use districts as required by the Transportation Planning Rule (TPR)	1
Consolidate the definitions of transportation facilities throughout the Development Code.	2
Adjust the Traffic Impact Assessment (TIA) threshold and process described in the Zoning Ordinance to reduce the number of peak hour trips for which a TIA is required.	3

Recommendation and Discussion	Reference
Add specific language requiring that transportation providers, including ODOT, Lincoln County Transit be notified of proposals that may impact their facilities or services. Additionally, add provisions for pre-application conferences in the procedures section of the code.	4
Update the Development Code to better address transit by requiring transit amenities as identified in the Lincoln County Transit Development Plan, update bicycle parking requirements to include transit facilities, and improve provision of bicycle parking through development.	5
Amend the Development Code to include language addressing vehicular access, circulation, connections, and pedestrian access through parking lots.	6
Amend the Development Code to include the TSP's updated street standards, block lengths, and accessway requirements	7
Provide new code language for drive aisles and parking lot layouts.	8
Amend the Development Code to clarify that development along state highways requires coordination with ODOT.	9
Address TPR requirements related to bicycle and pedestrian access and mobility through the addition of a new Pedestrian Access and Circulation section	10
Require new developments with planned designated employee parking areas provide preferential parking for employee carpools and vanpools.	11
Develop a new "Transportation Mitigation Procedure" section of the code.	12
Identify city authority and process for deploying traffic calming on neighborhood collectors.	13
Consolidate the transportation-related sections of Title 13 and Title 14 in one location.	14
Incorporate remaining provisions of Title 13 into Title 14.	15

Reference 1: Transportation Facilities as Allowed Use

Recommendation: Consolidate the definition of transportation facilities throughout the Development Code, and identify "Transportation Facilities (operation, maintenance, preservation, and construction in accordance with the city's Transportation System Plan)" as a permitted use in all land use districts as required by the TPR.

14.03.050 Residential Uses

		R-1	R-2	R-3	R-4
Z	Transportation Facilities	P	P	P	P

14.03.070 Commercial and Industrial Uses.

		C-1	C-2[1]	C-3	I-1	I-2	I-3
12	Basic Utilities ~~and Roads~~ [3]	P	P	P	P	P	P
22	Transportation Facilities	P	P	P	P	P	P

14.03.080 Water-dependent and Water-related Uses.

		W-1	W-2
22	Transportation Facilities	P	P

14.03.100 Public Uses

		P-1	P2	P-3
25.	~~Trails, paths, bike paths, walkways, etc.~~ Transportation Facilities	P	P	P

Reference 2: Consolidation of Definitions

Recommendation: Consolidate the definitions of transportation facilities throughout the Development Code.

Reference 3: Traffic Impact Analysis

Recommendation: Adjust threshold and process of the Traffic Impact Assessment (TIA) described in the Development Code to reduce the number of peak hour trips for which a TIA is required.

CHAPTER 14.45 TRAFFIC IMPACT ANALYSIS

14.45.010 Applicability

A Traffic Impact Analysis (TIA) shall be submitted to the city with a land use application under any one or more of the following circumstances:

A. To determine whether a significant effect on the transportation system would result from a proposed amendment to the Newport Comprehensive Plan or to a land use regulation, as specified in OAR 660-012-0060.
B. ODOT requires a TIA in conjunction with a requested approach road permit, as specified in OAR 734-051-3030(4).
C. The proposal may generate 500 or more average daily trips or ~~100~~ 50 PM peak-hour trips or more ~~onto city streets or county roads~~.
D. The proposal may increase use of any adjacent street by 10 vehicles or more per day that exceeds 26,000 pound gross vehicle weight.
E. The proposal includes a request to use Trip Reserve Fund trips to meet the requirements of Chapter 14.43, South Beach Transportation Overlay Zone.
F. Existing or proposed approaches or access connections that do not meet minimum spacing or sight distance requirements or are located where vehicles entering or leaving the property are restricted, or the location of an existing or proposed access driveway does not meet minimum access spacing or sight distance requirements;
G. Where a parcel adjacent to the site and under the same ownership as the subject parcel or parcels has received land use approval for development that resulted in an increase in traffic within the last three (3) years, the TIA shall include the adjacent development impacts for the purposes of meeting applicability thresholds.

…

14.45.020 Traffic Impact Analysis Requirements

…

H. Phased Development. If the land use application is part of a phased development, the TIA shall be analyze the ultimate build-out of all phases of the project.

14.45.050 Approval Criteria

When a TIA is required, a development proposal is subject to the following criteria, in addition to all criteria otherwise applicable to the underlying proposal:

A. The analysis complies with the requirements of 14.45.020;

B. The TIA demonstrates that adequate transportation facilities exist to serve the proposed development or identifies mitigation measures that resolve the traffic safety problems in a manner that is satisfactory to the City Engineer and, when state highway facilities are affected, to ODOT; and

C. Where a proposed amendment to the Newport Comprehensive Plan or land use regulation would significantly affect an existing or planned transportation facility, the TIA must demonstrate that solutions have been developed that are consistent with the provisions of OAR 660-012-0060; and

D. For affected non-highway facilities, the TIA establishes that any Level of Service standards adopted by the city in the Transportation System Plan (see Table 14.45.050-A) have been met. ~~and development will not cause excessive queuing or delays at affected intersections, as determined in the City Engineer's sole discretion; and~~

Table 14.45.050-A. Vehicle Mobility Standard for City Streets from the Newport Transportation System Plan

Intersection type	Proposed mobility standard	Reporting measure
Signalized	Los d and v/c ≤0.90	Intersection
All-way stop or roundabouts	Los d and v/c ≤0.90	Worst approach
Two-way stop[1]	Los e and v/c ≤0.95	Worst major approach/worst minor approach

1: Applies to approaches that serve more than 20 vehicles; there is no standard for approaches serving lower volumes.

E. Proposed public improvements are designed and will be constructed to the standards specified in Chapter 14.44 Transportation Standards. ~~or Chapter 13.05, Subdivision and Partition, as applicable.~~

14.45.060 Conditions of Approval

The city may deny, approve, or approve a development proposal with conditions needed to meet operations, structural, and safety standards and provide the necessary right-of-way and improvements to ensure consistency with the city's Transportation System Plan.

Note: Recommend removing Fee in Lieu option from the TIA section – it is referenced in the new Transportation Mitigation Procedure (Reference 12) and may otherwise be required even in cases where a TIA is not needed.

~~14.45.070 Fee in lieu Option~~

…

14.44.65 Fee in Lieu Option

The city may require the applicant to pay a fee in lieu of constructing required frontage improvements.

A. A fee in lieu may be required by the city under the following circumstances:

1. There is no existing road network in the area.

2. There is a planned roadway in the vicinity of the site, or an existing roadway stubbing into the site, that would provide better access and local street connectivity.

3. When required improvements are inconsistent with the phasing of transportation improvements in the vicinity and would be more efficiently or effectively built subsequent to or in conjunction with other needed improvements in area.

~~4. For any other reason which would result in rendering construction of otherwise required improvements impractical at the time of development.~~

B. The fee shall be calculated as a fixed amount per linear foot of needed transportation facility improvements. The rate shall be set at the current rate of construction per square foot or square yard of roadway built to adopted city or ODOT standards at the time of application. Such rate shall be determined by the city, based upon available and appropriate bid price information, including but not limited to surveys of local construction bid prices, and ODOT bid prices. This amount shall be established by resolution of the City Council upon the recommendation of the City Engineer and reviewed periodically. The amount of monies deposited with the city shall be at least 125 percent of the estimated cost of the required street improvements, inclusive of associated storm drainage improvements, or such other percentage to account for inflation, as established by City Council resolution. The fee shall be paid prior to final plat recording for land division applications or issuance of a building permit for land development applications.

C. All fees collected under the provisions of Section 14.45.070 shall be used for construction of like type roadway improvements within City of Newport's Urban Growth Boundary, consistent with the Transportation System Plan. Fees assessed to the proposed development shall be roughly proportional to the benefits the proposed development will obtain from improvements constructed with the paid fee.

Reference 4: Notice Requirements & Pre-Application Conference

Recommendation: Add specific language for applications requiring transportation providers, including ODOT, Lincoln County Transit be notified of proposals that may impact their facilities or services.

Add pre-application requirements.

CHAPTER 14.52 PROCEDURAL REQUIREMENTS
14.52.060 Notice
…

C. Mailing of Notice...

…

2. Any affected public agency, including ODOT and Lincoln County Transit, or public/private utility.

14.52.045 Pre-Application Conference

A. Purpose and Intent. The purpose of the conference shall be to acquaint the applicant with the substantive and procedural requirements of the Development Code and to identify issues likely to arise in processing an application. Pre-application conferences shall be conducted by the Community Development Director and/or his or her designee and shall include other city officials and public agency representatives as may be necessary for preliminary staff review of the proposal and to provide guidance to the applicant.

B. Applicability. A pre-application conference with the City of Newport is required for Type II, Type III, and Type IV applications unless waived by the Community Development Director.

C. Pre-application Materials. The applicant is requested to provide the following materials prior to the pre-application conference.

1. Location and conceptual site plan of the proposed development.

2. List of questions for staff

Reference 5: Transit-Supportive Requirements

Recommendation: Update the Development Code to better address transit by requiring provision of transit amenities as identified in the Lincoln County Transit Development Plan and amend bicycle parking requirements to include transit amenities and improve provision of bicycle parking through development.

CHAPTER 14.44 TRANSPORTATION STANDARDS

14.44.50 Transportation Standards

…

F. Transit improvements. Developments that are proposed on the same site as, or adjacent to, an existing or planned transit stop, as designated in the Lincoln County Transit District's 2018 Transit Development Plan, shall provide the following transit access and supportive improvements in coordination with the transit service provider:

(a) Reasonably direct pedestrian and bicycle connections between the transit stop and primary entrances of the buildings on site, consistent with the definition of "reasonably direct" in Section 13.05.005.

(b) The primary entrance of the building closest to the street where the transit stop is located shall be oriented to that street.

(c) A transit passenger landing pad.

(d) An easement or dedication for a passenger shelter or bench if such an improvement is identified in an adopted transportation or transit plan or if the transit stop is estimated by the Lincoln County Transit District to have at least 10 boardings per day.

(e) Lighting at the transit stop.

(f) Other improvements identified in an adopted transportation or transit plan, provided that the improvements are roughly proportional to the impact of the development on the City's transportation system and the County's transit system.

14.14.070 Bicycle Parking

Bicycle parking facilities shall be provided as part of new multi-family residential developments of ~~four~~ five units or more; ~~and~~ new retail, office, and institutional developments; and park-and-ride lots and transit transfer stations.

A. The required minimum number of bicycle parking spaces is as follows, rounding up to the nearest whole number:

Parking Spaces ~~Required~~	**Bike Spaces Required**
1 to 4 [a]	1 ~~0~~
5 to 25	1
26 to 50	2
51 to 100	3
Over 100	1/~~50~~ 25

[a] Residential developments less than 5 units are exempt from bicycle parking requirements

Reference 6: Vehicular Access and Circulation

Recommendation: Amend the Development Code to include language for vehicular access and circulation and connections, and pedestrian access through parking lots.

CHAPTER 14.14 PARKING AND LOADING~~, AND ACCESS~~ REQUIREMENTS

CHAPTER 14.61 VEHICULAR ACCESS AND CIRCULATION

A. Purpose and Intent. Section 14.61 implements the street access policies of the City of Newport Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. "Safety," for the purposes of this chapter, extends to all modes of transportation.

B. Permit Required. Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires a right-of-way permit, pursuant to NMC Chapter 9.10. In addition, approval by Lincoln County is required for connections to county roads within the city limits, and authorization from the Oregon Department of Transportation is required for connections onto US 101 or US 20.

C. Approach and Driveway Development Standards. Approaches and driveways shall conform to all of the following applicable development standards:

1. Access to parking lots shall be from a public street or alley. Access to loading and unloading areas shall be from a public street, an alley, or a parking lot.
2. Access to nonresidential parking lots or loading and unloading areas shall not be through areas that are zoned residential.
3. All accesses shall be approved by the City Engineer or designate.
4. Access Consolidation. Accesses shall be consolidated unless demonstrated to be unfeasible as determined by the City Engineer.
5. Access shall be taken from lower classification streets (e.g. local and neighborhood collector streets) when it can be accomplished in conformance with these standards.
6. New approaches shall conform to the spacing standards of subsections Table 14.61-A, and shall conform to minimum sight distance and channelization standards of the city, county or ODOT, as appropriate.
7. Existing approaches shall be upgraded as specified in an approved Traffic Impact Analysis.
8. With the exception of Private Driveways as defined in Section 14.01.020, all approaches and driveways serving more than five parking spaces shall be paved and meet applicable construction standards.
9. The city may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the city, county, or ODOT requires mitigation to alleviate safety or traffic operations concerns.
10. Where city, county, or ODOT spacing standards limit the number or location of connections to a street or highway, the city may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The city may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).
11. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus.
12. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.
13. Driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.

14. Driveways shall be designed so that vehicle areas, including, but not limited to, vehicle storage and service areas, do not obstruct any public right-of-way.
15. Drive-up/drive-in/drive-through uses and facilities shall meet the standards in Section 14.14.090(G).
16. Approaches and driveways shall be a minimum of twelve (12) feet for a one-way drive and twenty (20) feet for a two-way drives. Approaches and driveways shall not be greater than 150% of the minimum, with the exception of those that serve industrial uses and heavy commercial uses which may be up to 35 feet.
17. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.
18. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.
19. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge.
20. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.
21. The city may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.
22. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The city may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the city will work cooperatively with the applicant and ODOT to avoid unnecessary delays.
23. Where a proposed driveway crosses a culvert or drainage ditch, the city may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable engineering and stormwater design standards.

24. Temporary driveways providing access to a construction site, staging area, or special event shall be paved, graveled, or treated in an alternative manner as approved by the City Engineer, to prevent tracking of mud onto adjacent paved streets.

Table 14.61-A. Access Spacing Standards [1]

	Arterials [3]	**Major Collectors**	**Neighborhood Collectors**	**Local Streets**
Minimum Driveway Spacing (Driveway to Driveway)	See Table 14.61-B	100 feet	75 feet	n/a
Minimum Intersection Setback (Full Access Driveways Only)	See Table 14.61-B	150 feet	75 feet	25 feet
Minimum Intersection Setback (Right-In/Right-Out Driveways Only)	See Table 14.61-B	75 feet	50 feet	25 feet
Maximum Length Between Pedestrian/Bicycle Connections	See Table 14.61-B	300 Feet	300 Feet	300 Feet

1. All distances measured from the edge of adjacent approaches.

3. All Arterial streets in Newport are under ODOT jurisdiction. ODOT facilities are subject to access spacing guidelines in the Oregon Highway Plan, Appendix C Table 14, and the Blueprint for Urban Design. Blueprint for Urban Design Guidelines in Table 14.61-B are based on posted speed and urban context.

Table 14.61-B. Blueprint for Urban Design Guidelines for Arterial Access Spacing Standards.

Urban Context (Posted Speed)	**Target Spacing Range (Feet)**
Traditional Downtown/CBD (20-25 mph)	250-550
Urban Mix (25-30 mph)	250-550
Commercial Corridor (30-35 mph)	500-1,000
Residential Corridor (30-35 mph)	500-1000
Suburban Fringe (35-40 mph)	750-1,500
Rural Community (25-35)	250-750
Source: ODOT Blueprint for Urban Design, Tables 3-9 and 3-10	

D.. Exceptions and Adjustments. The city may approve deviations from the spacing standards in Table 14.61-A through a Type II procedure, where the criteria in 1. or 2. can be met.

1. An existing connection to a city street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance.

2. Mitigation measures, such as consolidated access, joint use driveways, directional limitations (e.g., one-way), turning restrictions (e.g., right-in/right-out only), or other mitigation actions can be shown to mitigate all traffic operations and safety concerns.

E. Joint Use Access Easement and Maintenance Agreement. Where the city approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the city for its records.

~~**14.14.120 Access**~~

~~A. Access to parking lots shall be from a public street or alley. Access to loading and unloading areas shall be from a public street, an alley, or a parking lot.~~

~~B. Access to nonresidential parking lots or loading and unloading areas shall not be through areas that are zoned residential.~~

~~C. All accesses shall be approved by the City Engineer or designate.~~

~~D. Driveway accesses onto Arterial streets shall be spaced a distance of 500 feet where practical, as measured from the center of driveway to center of driveway~~

~~E. Each parcel or lot shall be limited to one driveway onto an Arterial street unless the spacing standard in (D) can be satisfied.~~

F. ~~Access Consolidation. Accesses shall be consolidated unless demonstrated to be unfeasible as determined by the City Engineer.~~

Reference 7: Street, Block Length, and Accessway Standards

Recommendation: Update street, block length, and accessway standards to match TSP recommendations.

Street standards are included as part of Recommendation 14, Consolidation of Transportation Standards. Block length standards addressed below and are recommended to remain as part of subdivision/partition requirements.

13.05.020 Blocks

~~A. General. The length, width, and shape of blocks for non-residential subdivisions shall take into account the need for adequate building site size and street width, and shall recognize the limitations of the topography.~~

A. ~~B. Size. No block shall be more than 1,000 feet in length between street corners.~~ Blocks created in land divisions shall be consistent with the standards in Table 14.44.065 -A. Modifications to ~~this requirement~~ the standards may be made by the approving authority pursuant to the standards in Chapter 14.33 if the street is adjacent to an arterial street, ~~or the topography or~~ the location of adjoining streets, or other constraints identified in **Section 14.33.100** justify ~~ies~~ the modification. ~~A pedestrian or bicycle way may be required by easement or dedication by the approving authority to allow connectivity to a nearby or abutting street, park, school, or trail system to allow for efficient pedestrian and bicycle connectivity between areas if a block of greater than 1,000 feet if a modification is approved and the requested easement or dedication has a rational nexus to the proposed development and is roughly proportional to the impacts created by the proposed land division.~~

B. Mid-block pedestrian and bicycle connections must be provided when the block length exceeds 300 feet to ensure convenient access for all users. Mid-block pedestrian and bicycle connections must be provided on a public easement or right-of-way every 300 feet, unless the connection is impractical due to topography, inadequate sight distance, high vehicle travel speeds, lack of supporting land use, or other factors that may prevent safe crossing; or a rational nexus to the proposed development is not established and the connection is not roughly proportional to the impacts created by the proposed land division.

Table 13.05.020 -A. Block Length [1]

	Arterials [3]	**Major Collectors**	**Neighborhood Collectors**	**Local Streets**
Maximum Block Length	550 Feet	1000 feet	1000 feet	1000 feet

(Public Street to Public Street)				
Minimum Block Length (Public Street to Public Street)	220-550 Feet	200 feet	150 feet	125 feet
Maximum Length Between Pedestrian/Bicycle Connections (Public Street to Public Street, Public Street to Connection, or Connection to Connection) [2]	220-550 Feet	300 feet	300 feet	300 feet

1. All distances measured from the edge of adjacent approaches.

2. See 13.05.020(B).

3. All Arterial streets in Newport are under ODOT jurisdiction. ODOT facilities are subject to access spacing guidelines in the Oregon Highway and the Blueprint for Urban Design which vary based on posted speed and urban context.

Reference 8: Parking Lot Standards

Recommendation: Provide new code language for drive aisles and parking lot layouts.

14.14.060 Compact Spaces

For parking lots of ~~four~~ five vehicles or more, 40% of the spaces may be compact spaces~~, as defined in Section 14.14.090(A)~~ measuring 7.5 feet wide by 15 feet long. Each compact space must be marked with the word "Compact" in letters that are at least six inches high.

14.14.090 Parking Lot Standards

Parking lots shall comply with the following:

A. Parking Lot Minimum Standards. Parking lots shall be designed pursuant to the minimum dimensions provided in Table 14.14.090-A and Figure 14.14.090-A.~~Size of Spaces. Standard parking spaces shall be nine (9) feet in width by 18 feet in length. Compact spaces may be 7.5 feet wide by 15 feet long. Wherever parking areas consist of spaces set aside for parallel parking, the dimensions of such parking space(s) shall be not less than eight (8) feet wide and 22 feet long. Lines demarcating parking spaces may be drawn at various angles in relation to curbs or aisles so long as the parking spaces so created contain within them the rectangular area required by this section.~~

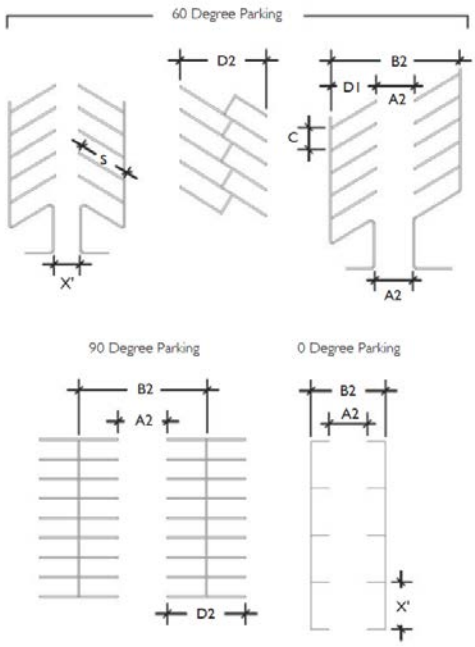
~~B. Aisle Widths. Parking area aisle widths shall conform to the following table, which varies the width requirement according to the angle of parking:~~

Parking Angle	0	30°	45°	60°	90°
Aisle Width					
One way traffic	13	11	13	18	24
Two-way traffic	19	20	21	23	24

Table 14.14.090-A - Parking Lot Minimum Dimensions

	PARKING ANGLE < °	CURB LENGTH	STALL DEPTH		AISLE WIDTH		BAY WIDTH		STRIPE LENGTH
			SINGLE D1	DOUBLE D2	ONE WAY A1	TWO WAY A2	ONE WAY B1	TWO WAY B2	
Standard Space	90°	8'-6"	18'	36'	23'	23'	59'	59'	18'
	60°	10'	20'	40'	17'	18'	57'	58'	23'
	45°	12'	18'-6"	37'	13'	18'	50'	55'	26'-6"
	30°	17'	16'-6"	33'	12'	18'	45'	51'	32'-8"
	0°	22'	8'-6"	17'	12'	18'	29'	35'	8'-6"

Figure 14.14.090-A - Parking Lot Minimum Dimensions



C. Surfacing. […]

D. Joint Use of Required Parking Spaces. […]

E. Satellite Parking. […]

F. Lighting. […]

G. Drive-Up/Drive-In/Drive-Through Uses and Facilities. […]

H. Driveway Standards. Driveways shall conform to the requirements of Section 14.61.D.

I. Landscaping and Screening. Parking lot landscaping and screening standards must comply with Section 14.19.050.

14.19.050 Landscaping Required for New Development, Exceptions

All new development, except for one and two family residences, shall be required to install landscaping per this section. For purposes of this section, new development shall mean construction upon a vacant lot or a lot that becomes vacant by virtue of the demolition of an existing building. Landscaping shall be provided as follows:

[…]

D. Landscaping and Screening for Parking Lots. The purpose of this subsection is to break up large expanses of parking lots with landscaping. Therefore, all parking areas or each parking bay where a development contains multiple parking areas ~~not abutting a landscaping area with 20 or more parking stalls~~ shall comply with the following provisions:

1. ~~Five percent of the parking area shall be dedicated to a landscaped area and areas.~~ A minimum of 10 percent of the total surface area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. This 10 percent landscaping requirement includes landscaping around the perimeter of parking areas as well as landscaped islands within parking areas. Such landscaping shall consist of canopy trees distributed throughout the parking area. A combination of deciduous and evergreen trees, shrubs, and ground cover plants is required. At a minimum, one tree per 12 parking spaces on average shall be planted over and around the parking area.

2. ~~In no cases shall a landscaped area required under this subsection be larger than 300 square feet. If more landscaping is required than the 300 square feet it shall be provided in separate landscaping areas.~~ All parking areas with more than 20 spaces shall provide landscape islands with trees that break up the parking area into rows of not more than 12 contiguous parking spaces. Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than 6 feet, to ensure adequate soil, water, and space for healthy plant growth;

3. All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within 2 years of planting, not less than 50 percent of that area is covered with living plants; and

4. Wheel stops, curbs, bollards or other physical barriers are required along the edges of all vehicle-maneuvering areas to protect landscaping from being damaged by vehicles. Trees shall be planted not less than 2 feet from any such barrier.

5. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

6. The edges of parking lots shall be screened to minimize vehicle headlights shining into adjacent rights-of-way and residential yards. Parking lots abutting sidewalk or walkway shall be screened using a low-growing hedge or low garden wall to a height of between 3 feet and 4 feet.

7. The provisions of this subsection do not apply to areas for the storage and/or display of vehicles.

Reference 9: Coordination with ODOT

Recommendation: Amend the Development Code to clarify that development along state highways requires coordination with ODOT.

This recommendation is addressed through amendments elsewhere in this memorandum:

- Reference 2: Access Management (standards table footnote)
- Reference 3: Transportation Impact Analysis
- Reference 4: Notice Requirements & Pre-Application Conference
- Reference 6: On-Site Circulation and Connections
- Reference 12: Transportation Mitigation Procedure (Process table)

Reference 10: Pedestrian Access and Circulation

Recommendation: Add new code section addressing pedestrian access and circulation.

CHAPTER 14.65 PEDESTRIAN ACCESS AND CIRCULATION

A. **Purpose and Intent.** This Chapter implements the pedestrian access and connectivity policies of City of Newport Transportation System Plan. It is intended to provide for safe, reasonably direct, and convenient pedestrian access and circulation.

B. **Applicability.** The provisions of this chapter shall apply to all new or substantial improvements to commercial, industrial, public/institutional, and multifamily development as defined in 14.1.020. Where the provisions of this chapter conflict with facilities identified in the Newport Parks and Recreation Master Plan, the Newport Parks and Recreation Master Plan shall govern.

C. Standards. Developments shall conform to all of the following standards for pedestrian access and circulation:

1. **Continuous Walkway System.** A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any.

2. **Safe, Direct, and Convenient.** Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas/playgrounds, and public rights-of-way based on all of the following criteria:

   a. The walkway is reasonably direct. A walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel;

   b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The city may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

   c. The walkway network connects to all primary building entrances in a manner consistent with the Oregon Structural Specialty Code.

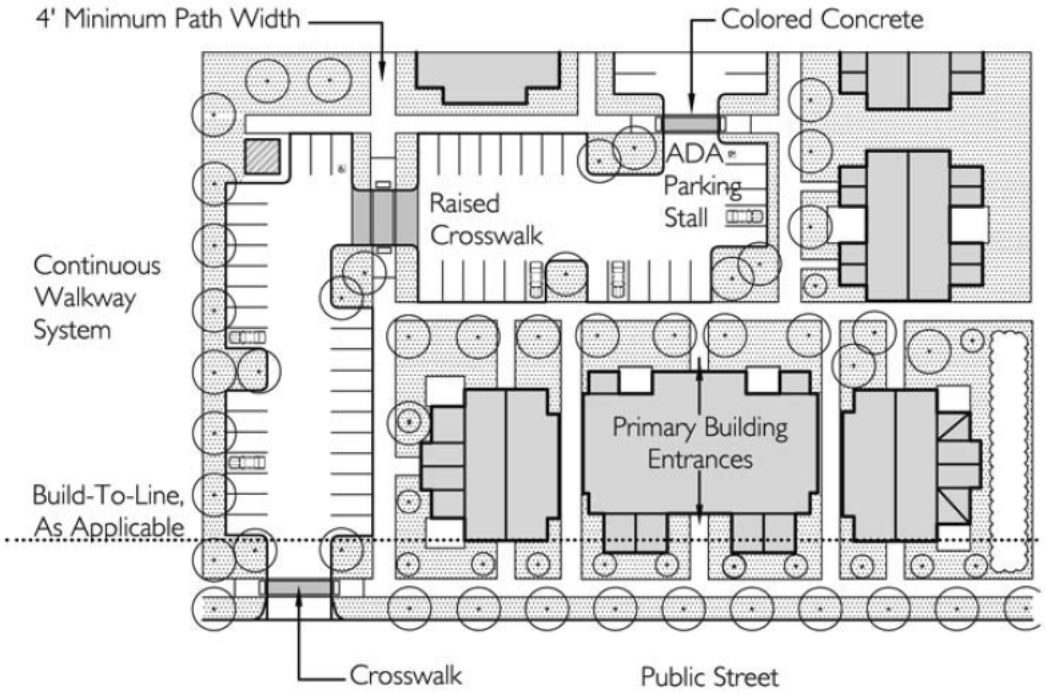
3. **Crosswalks**. Where a walkway crosses a parking area or driveway ("crosswalk"), it shall be clearly identified with pavement markings or contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrast). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians.

4. **Walkway Surface.** Walkway surfaces may be concrete, asphalt, brick/masonry pavers, or other city-approved durable surface meeting Americans With Disabilities Act requirements.

5. **Walkway Width.** Walkways shall be not less than 4 feet in width, except that concrete walkways a minimum of 6 feet in width are required in commercial developments and where access ways are required.

6. **Pedestrian Trail, Accessway, and Shared Use Path.** Standards for trails, accessways, and shared use paths are found in Section 14.44.60.

Figure 14.65-A. - Pedestrian Access and Circulation Standards Illustration



Reference 11: Preferential Carpool/Vanpool Parking

Recommendation: Require new developments with planned designated employee parking areas provide preferential parking for employee carpools and vanpools.

14.14.090 Parking Lot Standards

[…]

K. Preferential Carpool/Vanpool Parking. Parking areas that have designated employee parking and more than 20 vehicle parking spaces shall provide at least 10% of the employee parking spaces, as preferential carpool and vanpool parking spaces. Preferential carpool and vanpool parking spaces shall be closer to the employee entrance of the building than other parking spaces, with the exception of ADA accessible parking spaces.

Reference 12: Transportation Mitigation Procedure

Recommendation: Add new procedure for approving alternative cross-sections and future guarantees in areas with topographical or other constraints.

Section 14.33.100 Transportation Mitigation Procedure

A. Purpose. The purpose of this procedure is to allow modifications to transportation standards where meeting the roadway cross-section requirements of Section 14.44.060 is not possible due to existing site constraints.

B. When Standards Apply. The standards of this section apply to new development or redevelopment for which a building permit is required and that place demands on public or private transportation facilities or city utilities. This procedure may be used in cases where full street improvements, half street improvements, and frontage improvements are required.

B. Approval Process.

1. Pre-application Conference. The applicant shall participate in a pre-application conference pursuant to Section 14.52.045 prior to submitting an application requesting a Transportation Mitigation Procedure. The Community Development Director, City Engineer, and other appropriate city officials will participate in the pre-application conference. The meeting will be coordinated with ODOT when an approach road to US-101 or US-20 serves the property so that the application addresses both city and ODOT requirements.

2. When a requested, the applicable review process will be the same as that accorded to the underlying land use proposal. If not requested as part of a land use proposal, this procedure shall be subject to a Type 1 process as defined in Section 14.52.020 (A).

C. Approval Criteria.

1. A cross-section other than that identified in the adopted TSP for the functional classification of the roadway may be approved if one or more of the following conditions apply to the subject property and result in site conditions that prohibit the preferred roadway cross-section from being constructed.

a. Slopes over 25%

b. Mapped landslide areas

c. Mapped wetlands (National Wetland Inventory, City Wetlands Areas, or site-specific survey)

d. Existing structures

e. Historical resources

f. Insufficient right-of-way

2. The steps to determine an acceptable alternate roadway design must be documented and follow the Process for Determining Street Cross-Sections in Constrained Conditions, as detailed in Table 14.33.100-A and the Newport Transportation System Plan.

3. The proposal shall identify which conditions in Subsection 1 above apply to the subject property and show how conditions prevent the preferred cross-section from being constructed.

4. The proposal shall include documentation in the form of a written agreement from the Community Development Director, or designee, in consultation with the City Engineer and other city officials, as appropriate, that the proposed cross-section is consistent with the Process for Determining Street Cross-Sections in Constrained Conditions as shown in the adopted Transportation System Plan.

Table 14.33.100-A. Process for Determining Street Cross-Sections in Constrained Conditions

ANY NON-ARTERIAL[1] STREET FUNCTIONAL CLASSIFICATION WITH:	STEPS TO REDUCE LOWER PRIORITY STREET COMPONENTS[5]			
	STEP 1	STEP 2	STEP 3	STEP 4
EQUAL PEDESTRIAN AND BICYCLE CORRIDORS[2]	Eliminate on-street parking on one or both sides	Reduce sidewalk frontage zone to acceptable width	Choose acceptable bike facility	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width
HIGHER PEDESTRIAN VS. BICYCLE CORRIDORS [3]		Implement acceptable bike facility	Reduce sidewalk frontage zone to acceptable width	
HIGHER BICYCLE VS. PEDESTRIAN CORRIDORS[4]		Reduce sidewalk frontage zone to acceptable width	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width	Implement acceptable bike facility

Notes:

1. The street cross-section for ODOT facilities depends on the urban context and are subject to review and approval by ODOT. Additional detail is provided in the BUD.
2. Includes Major Pedestrian vs. Major Bicycle corridor, Neighborhood Pedestrian vs. Neighborhood Bicycle corridor, or Local Pedestrian vs. Local Bicycle corridor.
3. Includes Major Pedestrian vs. Neighborhood or Local Bicycle corridor, or Neighborhood Pedestrian vs. Local Bicycle corridor.
4. Includes Major Bicycle vs. Neighborhood or Local Pedestrian corridor, or Neighborhood Bicycle vs. Local Pedestrian corridor
5. Local Streets that carry less than 500 vehicles per day are candidates for shared street treatments in lieu of this process

14.47.40 Conditions of Approval

The city may deny, approve, or approve a development proposal with conditions needed to meet operations, structural, and safety standards and provide the necessary right-of-way and improvements to ensure consistency with the city's Transportation System Plan. Improvements required as a condition of development approval, when not voluntarily accepted by the applicant, shall be roughly proportional to the impact of the development on public facilities. Findings in the development

approval shall indicate how the required improvements are directly related and roughly proportional to the impact.

14.47.50 Fee in Lieu. The city may require the applicant to pay a fee in lieu of constructing required frontage improvements, consistent with Section 14.44.60 - Fee in Lieu Option

Reference 13: Traffic Calming

Recommendation: Identify city authority and process for deploying traffic calming on neighborhood collectors.

This recommendation is addressed in Section 14.44.050 Transportation Standards under **Reference 14**

Reference 14: Consolidating Transportation Standards

Recommendation: Currently, standards relating to transportation facilities lie within Title 13 (Subdivisions and Partitions) and Title 14 (Zoning). The recommendation is to move standards to the existing Section 14.44: Transportation Standards. Definitions have been addressed as part of Reference 2.

13.05.005 Definitions

The definitions within Section 14.01.020 apply in this chapter.

Note: Other text is struck.

14.01.020 Definitions

Note: All definitions from 13.05.005 are moved to this chapter. Underline/strikeout language shows new text and changes to existing language.

…

Alley. A narrow street ~~25 feet or less~~ through a block primarily for vehicular service access to the back or side of properties otherwise abutting on another street. ~~Frontage on said alley shall not be construed as satisfying the requirements of this Ordinance related to frontage on a dedicated street.~~

…

Accessway. A walkway providing a through connection for pedestrians between two streets, between two lots, or between a development and a public right-of-way. It may be an accessway for pedestrians and bicyclists (with no vehicle access), or a walkway on public or private property (i.e., with a public access easement); it may also be designed to accommodate emergency vehicles.

Pedestrian Trail. Pedestrian trails are typically located in parks or natural areas and provide opportunities for both pedestrian circulation and recreation.

Shared Use Path. Shared use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and citywide circulation needs. Shared use path designs vary in surface types and widths.

Roadway. The portion of a street right-of-way developed for vehicular traffic.

Street. A public or private way ~~other than a driveway~~ that is created to provide ingress or egress for ~~persons~~ vehicles to one or more lots, parcels, areas, or tracts of land. The City of Newport Transportation System Plan establishes four functional classifications of streets: Arterial, Major Collector, Neighborhood Collector, and Local Streets.

~~For the purposes of this section Title, a "driveway" is a private way that begins at a public right-of-way that is proposed to serve not more than four individual lots/parcels cumulative as the primary vehicular access to those individual lots/parcels.~~

1. **Alley**. ~~A narrow street through a block primarily for vehicular service access to the back or side of properties otherwise abutting on another street~~.

2. **Arterial**. ~~A street of considerable continuity which is primarily a traffic artery among large areas.~~ Arterial streets are primarily intended to serve regional and citywide traffic movement. Arterials provide the primary connection to collector streets~~. Where an Arterial intersects with a Neighborhood Collector or Local Street, access management and/or turn restrictions may be employed to reduce traffic delay.~~ The Arterial streets in Newport are US 101 and US 20.

3. **Half-street**. Partial improvement of an existing street, or a ~~A~~ portion of the width of a right of way, usually along the edge of a subdivision or partition, where the remaining portion of the street could be provided in another subdivision or partition, and consisting of at least a sidewalk and curb on one side and at least two travel lanes.

~~4. **Marginal Access Street**. A minor street parallel and adjacent to a major arterial street providing access to abutting properties, but protected from through traffic.~~

~~5. **Minor Street**. A street intended primarily for access to abutting properties.~~

6. **Major Collector Street.** Major Collectors are intended to distribute traffic from Arterials to streets of the same or lower classification.

7. **Neighborhood Collector Street.** Neighborhood Collectors distribute traffic from Arterial or Major Collector streets to Local Streets. They are distinguishable from Major Collectors in that they principally serve residential areas. Neighborhood Collector streets typically maintain slow vehicle operating speeds to accommodate safe use by all modes.

8. **Local Street**. All streets not classified as Arterial, Major Collector, or Neighborhood Collector streets are classified as Local Streets (seen at right). Local Streets provide local access and circulation for traffic, connect neighborhoods, and often function as through routes for pedestrians and bicyclists. Local Streets typically maintain slow vehicle operating speeds to accommodate safe use by all modes.

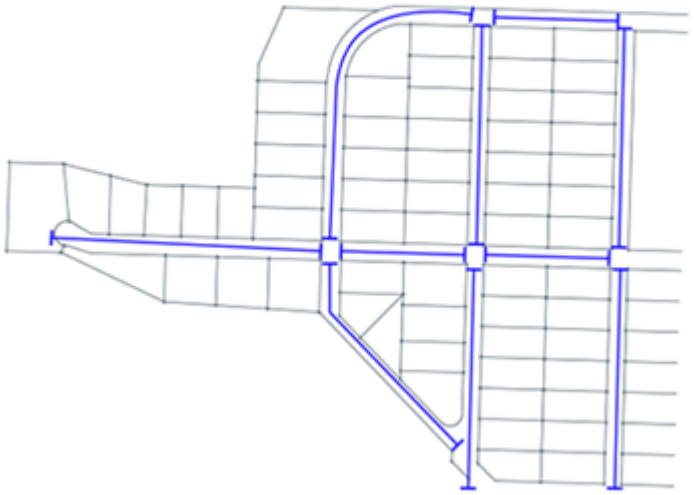
9. **Private Street.** Private Streets are a special type of Local Streets that are used to facilitate access to specific properties or neighborhoods. The City of Newport is not responsible for maintenance on private streets.

10. **Private Driveway.** A private street that begins at a public right-of-way that is proposed to serve not more than four individual lots/parcels cumulative as the primary vehicular access to those individual lots/parcels.

11. **Street Segment.** A portion of a local or collector street which is located between two intersections, or between an intersection and the end of a cul-de-sac or dead-end. See Illustration: Illustrative Street Segments, below.

Illustration
Illustrative Street Segments

Street segments are indicated in with blue lines on the illustrative parcel map shown below.



12. **Shared Street.** A shared street is a local street that carries fewer than 500 vehicles per day. Shared streets have a single travel lane where all modes of travel share the paved roadway.

…

Transportation Facility. A street, pedestrian pathway, bicycle facility, shared use path, or other improvement for the conveyance of people or goods, as identified in the adopted Transportation System Plan.

Walkway. A pedestrian way, including but not limited to a sidewalk, path or accessway, providing access within public right-of-way or on private property.

…

Reasonably Direct. A route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.

13.05.015 Streets

A. Streets created as a subdivision or partition shall meet the requirements of 14.44.60

Note: All other text in this section is struck and incorporated into Section 14.44.60, below

13.05.040 Public Improvement Requirements

1. Streets. All streets, including alleys, within the land division, streets adjacent but only partially within the land divisions, and the extension of land division streets to the intersecting paving line of existing streets with which the land division streets intersect, shall be graded for the full right-of-way width. The roadway shall be improved to a width of 36 feet or other width as approved by the approval authority by excavating to the street grade, construction of concrete curbs and drainage structures, placing a minimum of six inches of compacted gravel base, placement of asphaltic pavement 36 feet in width or other width as approved by the approval authority and approximately two inches in depth, and doing such other improvements as may be necessary to make an appropriate and completed improvement. Street width standards ~~may be adjusted as part of the tentative plan approval to protect natural features and to take into account topographic constraints and geologic risks.~~ may be adjusted subject to the provisions of Section 14.33.100.

14.44.050 Transportation Standards

A. Development Standards. The following standards shall be met for all new uses and developments:

1. All new lots created, consolidated, or modified through a land division, partition, lot line adjustment, lot consolidation, or street vacation must have frontage or approved access to a public street.

2. Streets within or adjacent to a development subject to Chapter 13.05, Subdivision and Partition, shall be improved in accordance with the Transportation System Plan, the provisions of this Chapter, and the ~~street~~ standards in ~~Section 13.05.015~~ Section 14.44.060.

3. Development of new streets, and additional street width or improvements planned as a portion of an existing street, shall be improved in accordance ~~Chapter 13.05,~~ Chapter 14.44 and public streets shall be dedicated to the applicable road authority;

4. Substandard streets adjacent to existing lots and parcels shall be brought into conformance with the standards of ~~Chapter 13.05~~. this chapter.

5. Neighborhood Traffic Management such as speed tables, curb bulb-outs, traffic circles, and other solutions may be identified as required on-site or off-site improvements where the required mitigation is roughly proportional to the impacts of the proposed development.

B. Guarantee. The city may accept a future improvement guarantee in the form of a surety bond, letter of credit or non-remonstrance agreement, in lieu of street improvements, if it determines that one or more of the following conditions exist:

1. A partial improvement may create a potential safety hazard to motorists or pedestrians;

2. Due to the developed condition of adjacent properties it is unlikely that street improvements would be extended in the foreseeable future and the improvement associated with the project under review does not, by itself, provide increased street safety or capacity, or improved pedestrian circulation;

3. The improvement would be in conflict with an adopted capital improvement plan; or

4. The improvement is associated with an approved land partition or minor replat and the proposed land partition does not create any new streets.

C. Creation of Rights-of-Way for Streets and Related Purposes. Streets may be created through the approval and recording of a final subdivision or partition plat pursuant to Chapter 13.05; by acceptance of a deed, provided that the street is deemed in the public interest by the City Council for the purpose of implementing the Transportation System Plan and the deeded right-of-way conforms to the standards of this Code; or other means as provided by state law.

D. Creation of Access Easements. The city may approve an access easement when the easement is necessary to provide viable access to a developable lot or parcel and there is not sufficient room for public right-of-way due to topography, lot configuration, or placement of existing buildings. Access easements shall be created and maintained in accordance with the Uniform Fire Code.

E. Street Location, Width, and Grade. The location, width and grade of all streets shall conform to the Transportation System Plan, subdivision plat, or street plan, as applicable and are to be constructed in a manner consistent with adopted City of Newport Engineering Design Criteria, Standard Specifications and Details. Street location, width, and grade shall be determined in relation to existing and planned streets, topographic conditions, public convenience and safety, and in appropriate relation to the proposed use of the land to be served by such streets, pursuant to the requirements in Chapter 13.05 and Chapter 14.44.

F. Transit improvements. Developments that are proposed on the same site as, or adjacent to, an existing or planned transit stop, as designated in the Lincoln County Transit District's 2018 Transit Development Plan, shall provide the following transit access and supportive improvements in coordination with the transit service provider:

(a) Reasonably direct pedestrian and bicycle connections between the transit stop and primary entrances of the buildings on site, consistent with the definition of "reasonably direct" in Section 13.05.005.

(b) The primary entrance of the building closest to the street where the transit stop is located shall be oriented to that street.

(c) A transit passenger landing pad.

(d) An easement or dedication for a passenger shelter or bench if such an improvement is identified in an adopted transportation or transit plan or if the transit stop is estimated by the Lincoln County Transit District to have at least 10 boardings per day.

(e) Lighting at the transit stop.

(f) Other improvements identified in an adopted transportation or transit plan, provided that the improvements are roughly proportional to the impact of the development on the City's transportation system and the County's transit system.

14.44.60 Streets, Pathways, Accessways, and Trails

Note: Text for this new section comes primarily from Section 13.05.015. Underline/strikeout formatting shows changes to existing adopted language.

~~A. Criteria for Consideration of Modifications to Street Design. As identified throughout the street standard requirements, modifications may be allowed to the~~

~~standards by the approving authority. In allowing for modifications, the approving authority shall consider modifications of location, width, and grade of streets in relation to existing and planned streets, to topographical or other geological/environmental conditions, to public convenience and safety, and to the proposed use of land to be served by the streets. The street system as modified shall assure an adequate traffic circulation system with intersection angles, grades, tangents, and curves appropriate for the traffic to be carried considering the terrain. Where location is not shown in the Transportation System Plan, the arrangement of streets shall either:~~

1. ~~Provide for the continuation or appropriate projection of existing principal streets in surrounding areas; or~~
2. ~~Conform to a plan for the neighborhood approved or adopted by the Planning Commission to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical.~~

B. ~~Minimum Right-of-Way and Roadway Width. Unless otherwise indicated in the Transportation System Plan, the street right-of-way and roadway widths shall not be less than the minimum width in feet shown in the following table:~~

~~Type of Street~~	~~Minimum Right-of-Way Width~~	~~Minimum Roadway Width~~
~~Arterial, Commercial, and Industrial~~	~~80 feet~~	~~44 feet~~
~~Collector~~	~~60 feet~~	~~44 feet~~
~~Minor Street~~	~~50 feet~~	~~36 feet~~
~~Radius for turn-around at end of cul-de-sac~~	~~50 feet~~	~~45 feet~~
~~Alleys~~	~~25 feet~~	~~20 feet~~

~~Modifications to this requirement may be made by the approving authority where conditions, particularly topography, geology, and/or environmental constraints, or the size and shape of the area of the subdivision or partition, make it impractical to otherwise provide buildable sites, narrower right-of-way and roadway width may be accepted. If necessary, slope easements may be required.~~

A. Street Width and Cross Sections. Right-of-way widths for streets shall comply with the Preferred Street Cross-Sections in the Transportation System Plan and the standards in Table 14.44.60-A.

Table 14.44.60-A. Minimum Right of Way and Roadway Widths

Functional Classification	Minimum Right of Way Width	Minimum Roadway Width
Major Collector	93 feet	63 feet
Neighborhood Collector	69 feet	48 feet
Local Street (Parking One Side Only)	47 feet	28 feet
Local Street (No Parking)	39 feet	20 feet

B. If the required cross-section is wider than the available right-of-way, coordination with the City of Newport is required to determine whether right-of-way dedication is necessary or design elements can be narrowed or removed. Any modifications to the preferred street cross-section require approval pursuant to the requirements of Section 14.33.100 – Transportation Mitigation Procedure. Constrained conditions on ODOT facilities will require review and approval by ODOT.

C. Reserve Strips. Reserve strips giving a private property owner control of access to streets are not allowed.

D. Alignment. Streets other than minor streets shall be in alignment with existing streets by continuations of their center lines. Staggered street alignment resulting in "T" intersections shall leave a minimum distance of 200 feet between the center lines of streets having approximately the same direction and, in no case, shall be less than 100 feet. If not practical to do so because of topography or other conditions, this requirement may be modified by the approving authority.

E. Future Extensions of Streets. Proposed streets within a land division shall be extended to the boundary of the land division. A turnaround if required by the Uniform Fire Code will be required to be provided. If the approval authority determines that it is not necessary to extend the streets to allow the future division of adjoining land in accordance with this chapter, then this requirement may be modified such that a proposed street does not have to be extended to the boundary of the land division.

F. Intersection Angles.

1. Streets shall be laid out to intersect at right angles.

2. An arterial intersecting with another street shall have at least 100 feet of tangent adjacent to the intersection.

3. Other streets, except alleys, shall have at least 50 feet of tangent adjacent to the intersection.

4. Intersections which contain an acute angle of less than 80 degrees or which include an arterial street shall have a minimum corner radius sufficient to allow for a roadway radius of 20 feet and maintain a uniform width between the roadway and the right-of-way line.

5. No more than two streets may intersect at any one point.

6. If it is impractical due to topography or other conditions that require a lesser angle, the requirements of this section may be modified by the approval authority. In no case shall the acute angle in Subsection F.(1.) be less than 80 degrees unless there is a special intersection design.

G. Half Street. Half streets are not allowed. Modifications to this requirement may be made by the approving authority to allow half streets only where essential to the reasonable development of the land division, when in conformity with the other requirements of these regulations and when the city finds it will be practical to require the dedication of the other half when the adjoining property is divided. Whenever a half street is adjacent to a tract property to be divided, the other half of the street shall be provided.

H. Sidewalks. Sidewalks in conformance with the city's adopted sidewalk design standards are required on both sides of all streets within the proposed land division and are required along any street that abuts the land division that does not have sidewalk abutting the property within the land division. The city may exempt or modify the requirement for sidewalks only upon the issuance of a variance as defined in the Zoning Ordinance.

I. Cul-de-sac. A cul-de-sac shall have a maximum length of 400 feet and serve building sites for not more than 18 dwelling units. A cul-de-sac shall terminate with a circular turn-around meeting minimum Uniform Fire Code requirements. Modifications to this requirement may be made by the approving authority. A pedestrian or bicycle way may be required by easement or dedication by the approving authority to connect from a cul-de-sac to a nearby or abutting street, park, school, or trail system to allow for efficient pedestrian and bicycle connectivity between areas if a modification is approved and the requested easement or dedication has a rational nexus to the proposed development and is roughly proportional to the impacts created by the proposed land division.

J. Street Names. Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street. Street names and numbers shall conform to the established pattern in the city, as evident in the

physical landscape and described in City of Newport Ordinance No. 665, as amended.

K. Marginal Access Streets. Where a land division abuts or contains an existing or proposed arterial street, the Planning Commission may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or other treatment necessary for adequate protection of residential properties and to afford separation of through and local traffic.

L. Alleys. Alleys shall be provided in commercial and industrial districts. If other permanent provisions for access to off-street parking and loading facilities are provided, the approving authority is authorized to modify this provision if a determination is made that the other permanent provisions for access to off-street parking and loading facilities are adequate to assure such access. The corners of alley intersections shall have a radius of not less than 12 feet.

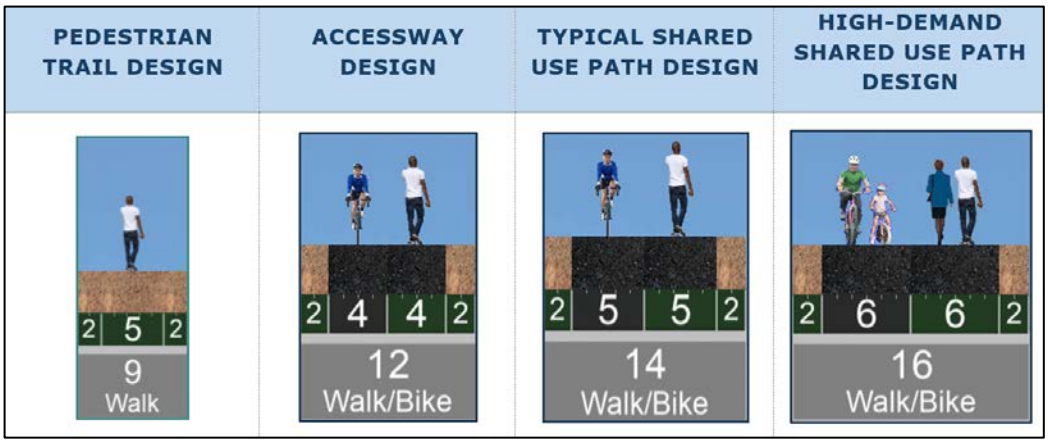
M. Street Trees. Trees and other plantings may be installed within proposed or existing rights-of-ways provided they conform to the City's approved Tree Manual.

N. **Accessways**. Accessways must be on public easements or rights-of-way and have a minimum paved surface of 8 feet, with a 2-foot shoulder on each side, within a 12-foot right-of-way.

O. **Shared Use Paths**. A shared use path must be a minimum of 10 feet wide within 14 feet of right-of-way. In areas with significant walking or biking demand, as identified in the Newport Transportation System Plan (e.g., Nye Beach Area, Oregon Coast Bike Route) or on ODOT facilities, the path must be 12 feet wide within a right-of-way of 16 feet (see Figure 14.44.060-A). A shared use path may be narrowed to 8 feet over short distances to address environmental or right-of-way constraints.

1. High-demand shared use path is required parallel to ODOT facilities and in other areas with significant walking or biking demand as identified in the Transportation System Plan.

Figure 14.44.060-A. Pedestrian Trail, Accessway, and Shared Use Path Guidelines Illustration



P. Pedestrian Trail. Pedestrian trails are typically located in parks or natural areas and provide opportunities for both pedestrian circulation and recreation. They may be constructed as a hard or soft surface facility. The City of Newport Parks System Master Plan identifies requirements for specific trail improvements.

Q. **Accessway**. Accessways must be on public easements or rights-of-way and have minimum paved surface of 8 feet, with a 2-foot shoulder on each side, and 12 feet of right-of-way.

Recommendation 15: Incorporate remaining provisions of Title 13 into Title 14

The table below provides suggested locations and considerations for moving the subdivision/property line adjustment provisions of Title 13 into Title 14. Some recommendation have been address in the proposed text amendments; for others detailed underline-strikeout language is not provided as part of this memorandum.

Title 13 Chapter	Suggested New Location	Notes
13.05.001 Purpose	14.100.001 Purpose	Move to new section, review ORS citations for continued relevance.
13.05.005 Definitions	14.01.020 Definitions	Transportation definitions have been evaluated and updated as part of Reference 2/14. Other definitions may conflict with those of Title 14.
13.05.010 Standards	N/A	Recommend removing, this section is not necessary to retain.
13.05.020 Blocks	14.100.020 Blocks	
13.05.025 Easements	14.100.025 Easements	
13.05.30 Lots and Parcels	14.100.030 Lots and Parcels	
13.5.035 Public Improvements	14.100.035 Public Improvements	This section identifies procedures and can be combined with the following section which addresses substantive items.
13.05.040 Public Improvement Requirements	14.100.035 Public Improvements	Can be combined with previous item.
13.05.045 Adequacy of Public Facilities and Utilities	14.100.045 Adequacy of Public Facilities and Utilities	
13.05.050 Underground Utilities and Service Facilities	14.100.050 Underground Utilities and Service Facilities	

Title 13 Chapter	Suggested New Location	Notes
13.05.055 Street Lights	14.100.105 Miscellaneous	This brief section could be incorporated into a "miscellaneous" section. If the City has adopted street light standards as this code section indicates, this section should be updated.
13.05.060 Street Signs	14.100.105 Miscellaneous	This brief section could be incorporated into a "miscellaneous" section.
13.5.065 Monuments	14.100.105 Miscellaneous	This brief section could be incorporated into a "miscellaneous" section.
13.05.070 Land Division Application	14.100.070 Land Division Application or 14.52 – Procedural Requirements	
13.05.075 Preliminary Review and Notice of Hearing	14.100.075 Preliminary Review and Notice of Hearing or 14.52 – Procedural Requirements	
13.05.080 Hearing and Approval of Land Division	14.100.080 Hearing and Approval of Land Division or 14.52 – Procedural Requirements	
13.05.085 Approval Criteria and Conditions for Approval	14.100.085 Approval Criteria and Conditions for Approval or 14.52 – Procedural Requirements	
13.05.090 Final Plat Requirements for Land Divisions	14.100.090 Final Plat Requirements for Land Divisions or 14.52 – Procedural Requirements	These procedural sections could be moved to new sections within Title 14, or incorporated into the existing Chapter 14.52 – Procedural Requirements. The later option would result in a more intelligible code overall, but would require more effort.

Title 13 Chapter	Suggested New Location	Notes
13.05.095 Minor Replats and Partitions	14.100.095 Minor Replats and Partitions	This section could be moved to a new location with updates to needed references.
13.05.100 Cemeteries	14.100.105 Miscellaneous	This brief section could be combined with 13.05.105 and 13.50 to a new "miscellaneous" section.
13.05.105 Miscellaneous	14.100.105 Miscellaneous	This brief section could be combined with 13.05.100 and 13.50 to a new "miscellaneous" section.
13.50 Standards After Subdivision Approval	14.100.105 Miscellaneous	This brief section could be combined with 13.05.105 and 13.100 to a new "miscellaneous" section.
13.99 Property Line Adjustments	14.110 Property Line Adjustments	This section could be moved to a new location with updates to needed references.

Newport TSP Update

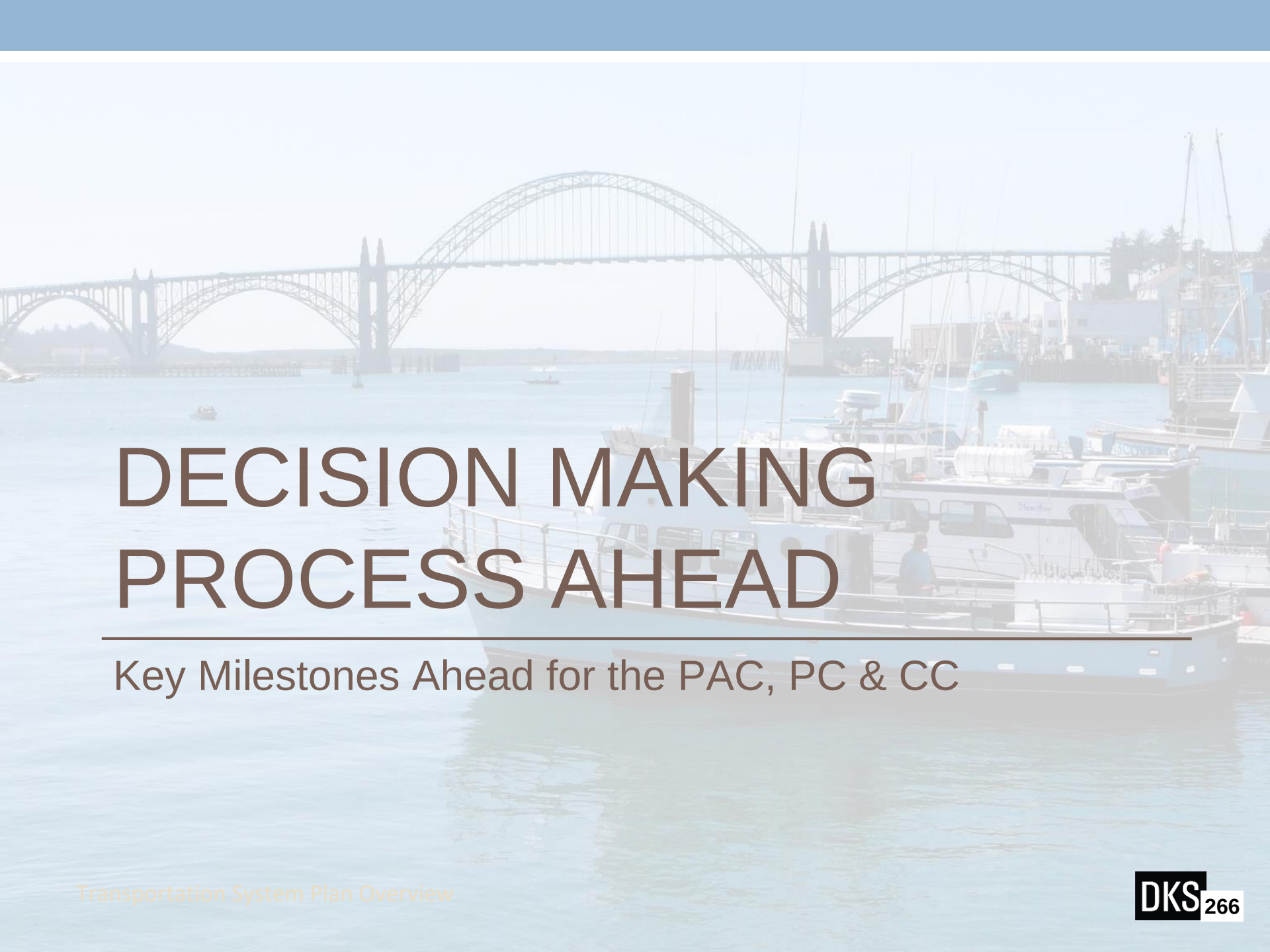
PROJECT ADVISORY COMMITTEE MEETING #6

16 Dec 21

Draft TSP & Final Public Outreach

Today's Agenda

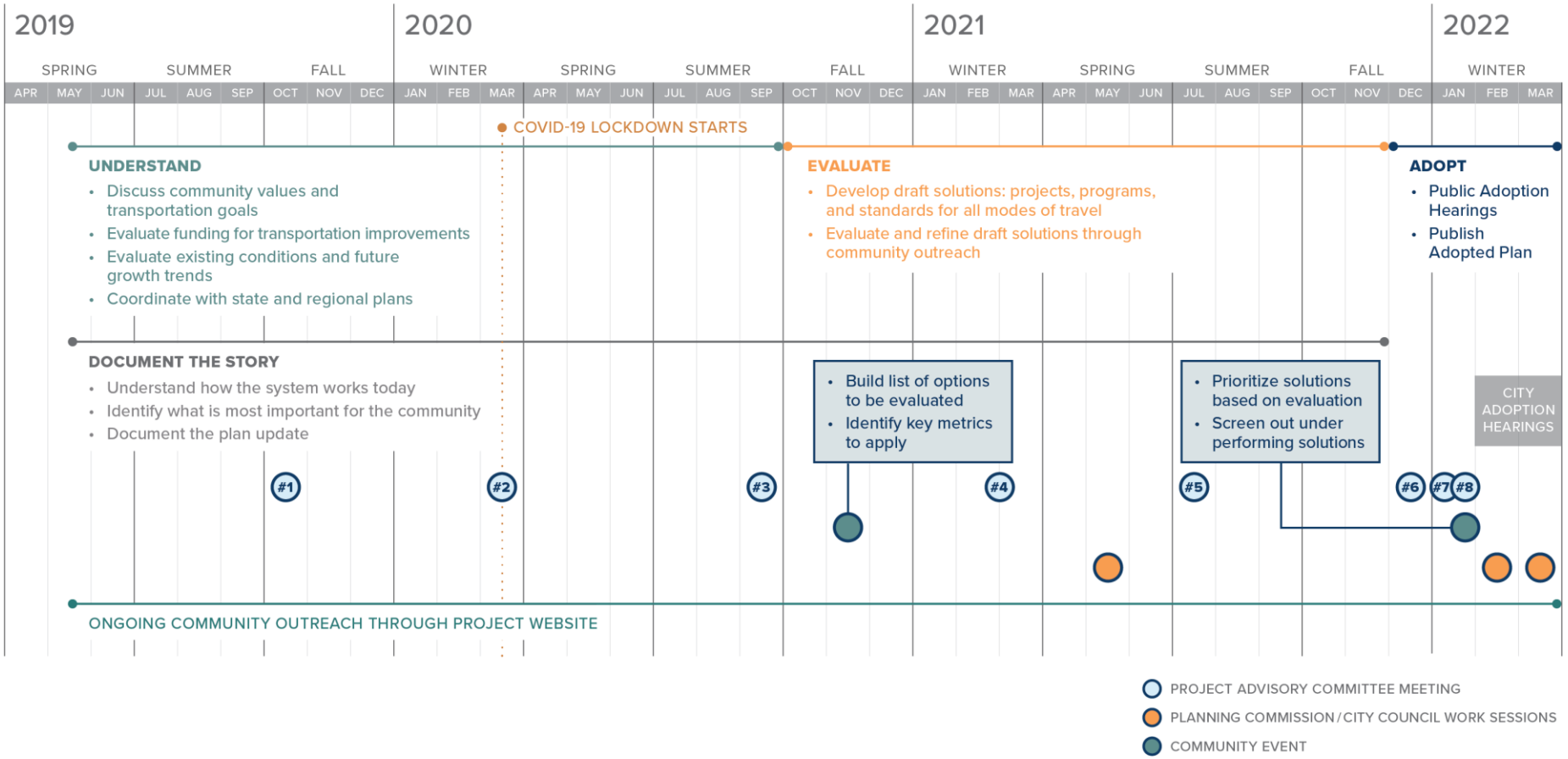
- TSP Decision-Making Process Ahead
- Public Outreach Summary, Phase 2
- Orientation to Draft TSP
- Key Elements of Tech Memos 11 and 12
- Public Comment



DECISION MAKING PROCESS AHEAD

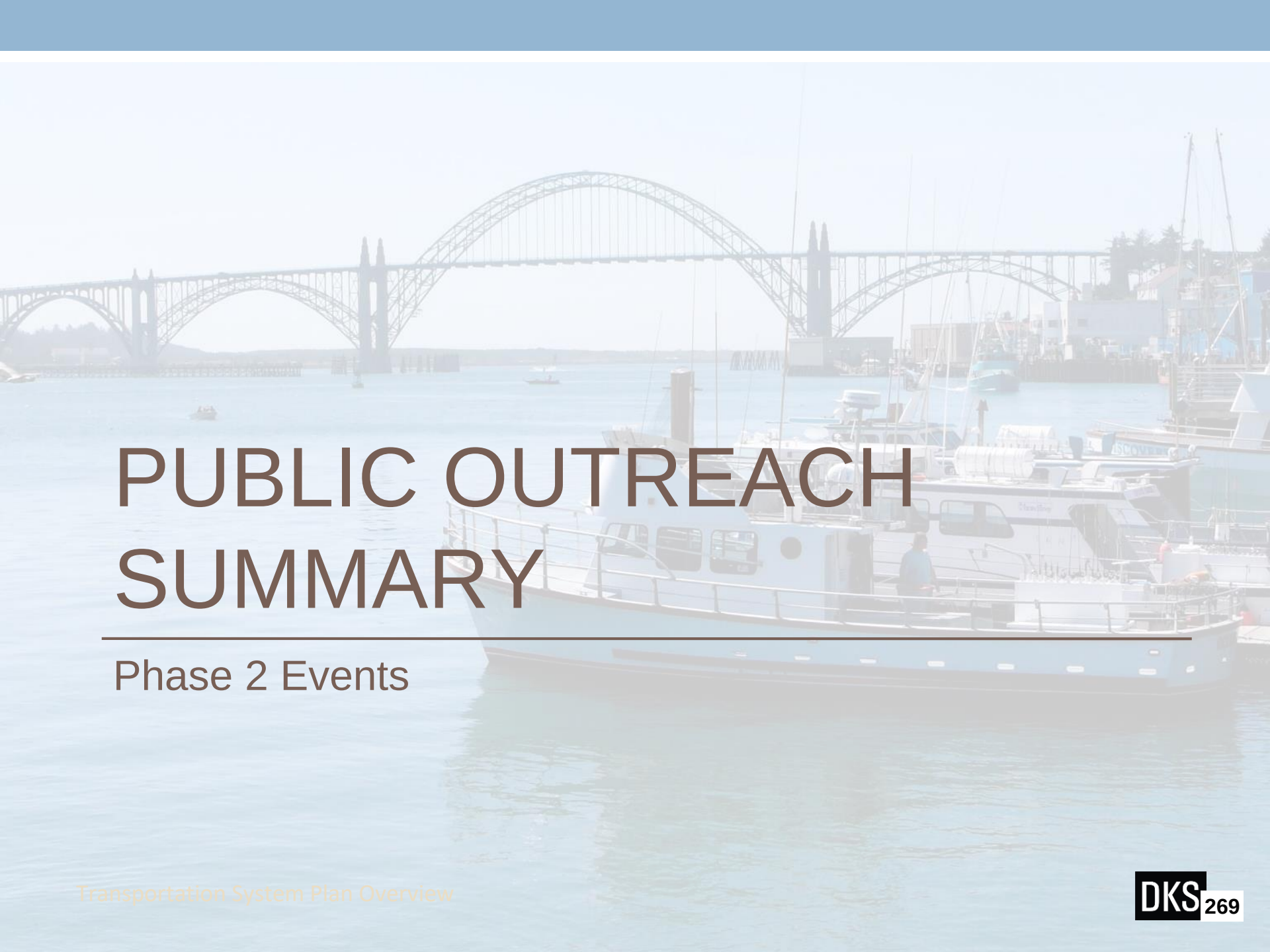
Key Milestones Ahead for the PAC, PC & CC

Project Schedule



Milestones Ahead for TSP Adoption

- **PAC Meeting #7** – Discuss potential revisions to Draft TSP
- **PAC Meeting #8** – Confirm Adoption Draft TSP Document
- **Planning Commission Hearings**
- **City Council Hearings**



PUBLIC OUTREACH SUMMARY

Phase 2 Events

DKS 269

Approach to Outreach

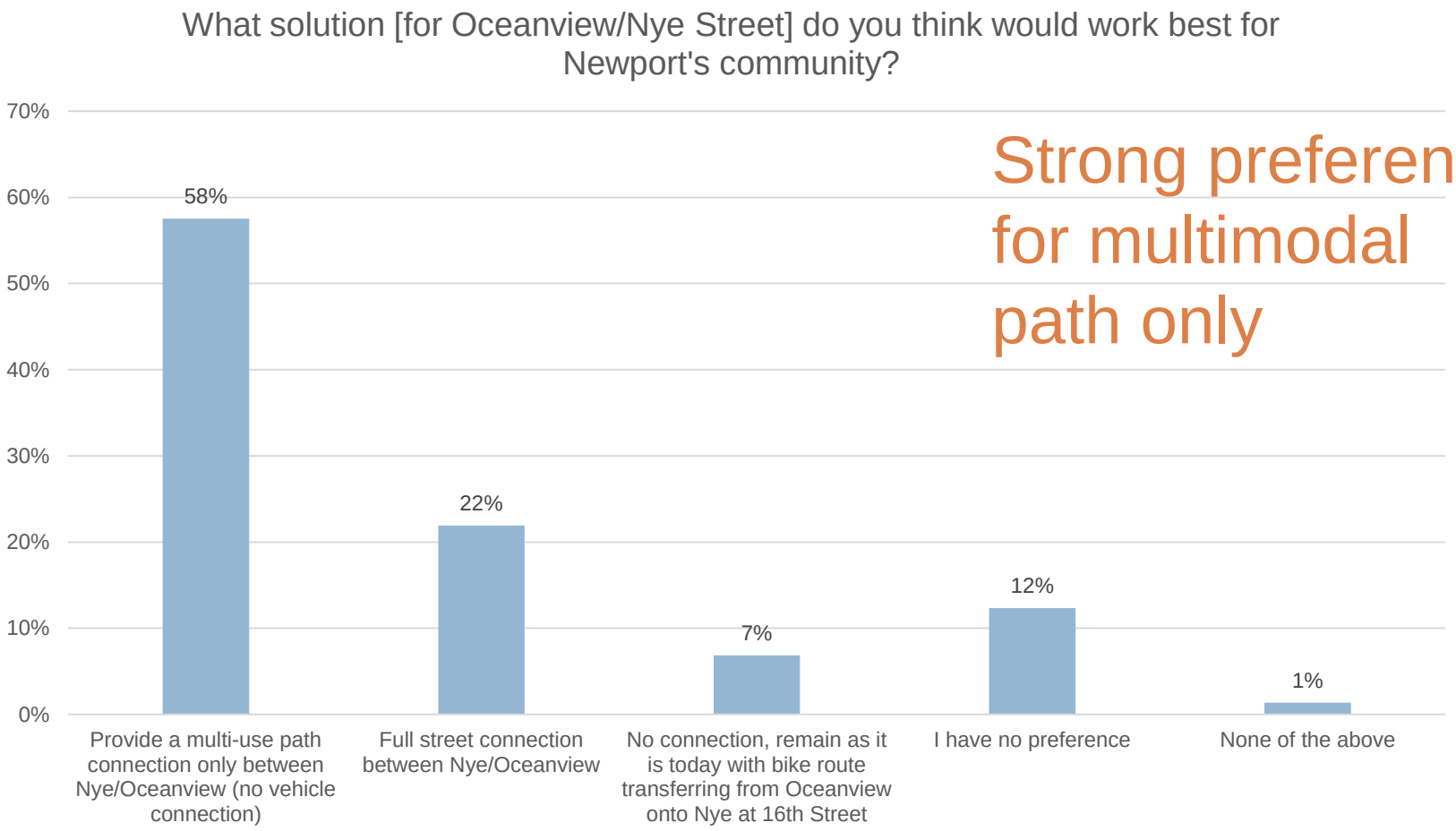
METHODS OF OUTREACH

- Online Open House
- Phone Survey
- Hosted In-Person Workshop
- Paper Surveys Mailed to Residents
- Publicized outreach via social media, targeted email to community groups, and citywide post cards

CITIZEN RESPONSES

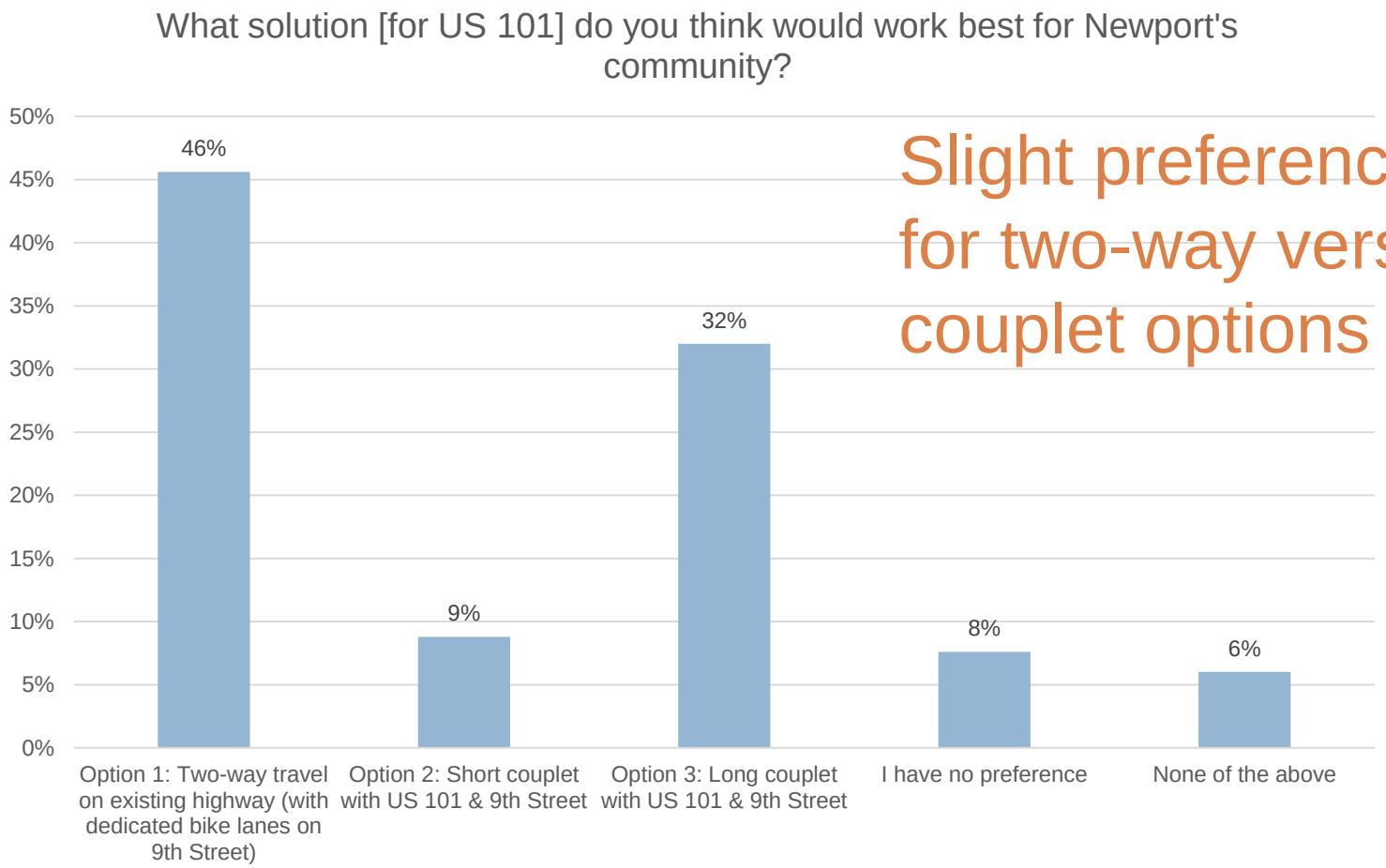
- Online: 350+ views, 76 surveys completed
- Phone: 40 surveys with Spanish speaking residents
- In-Person: 30 participants
- Mailed Surveys: 1,800+ sent out, about 10% returned completed.
- Demographics: 94% aged 45 or over; 6% under 45 yrs.

Oceanview/Nye Street



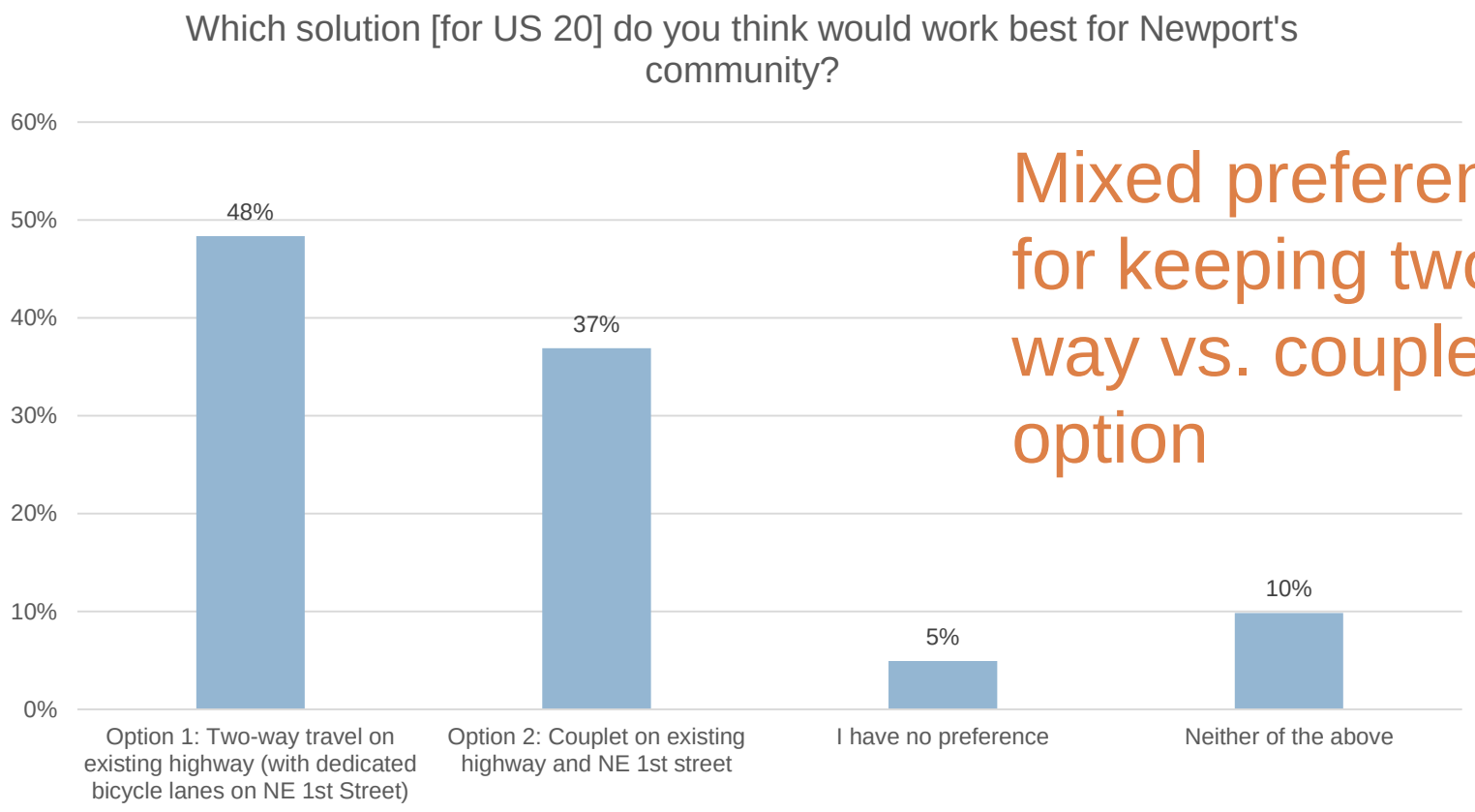
Strong preference for multimodal path only

US 101 Solutions



Slight preference for two-way versus couplet options

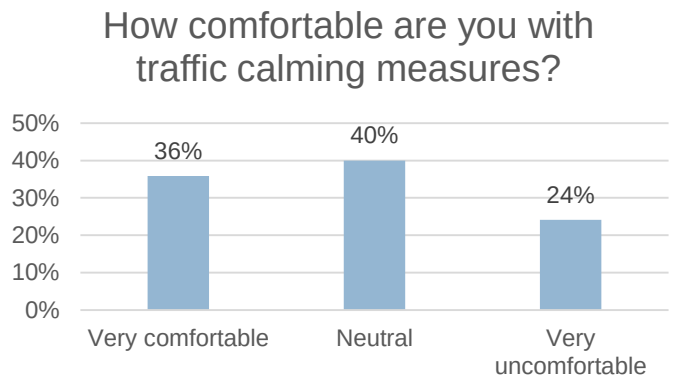
US 20 Solutions



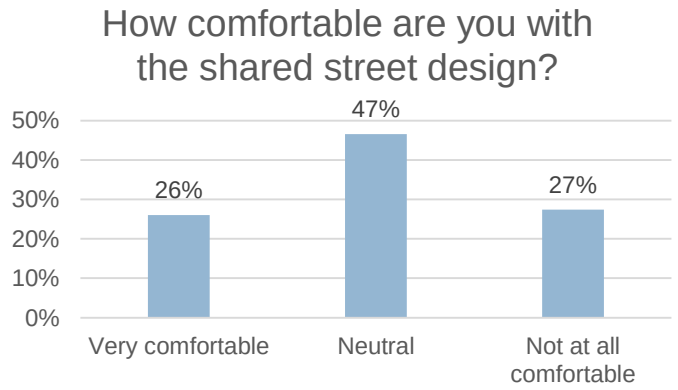
Mixed preference for keeping two-way vs. couplet option

OTHER FEEDBACK WE HEARD

- Traffic Calming

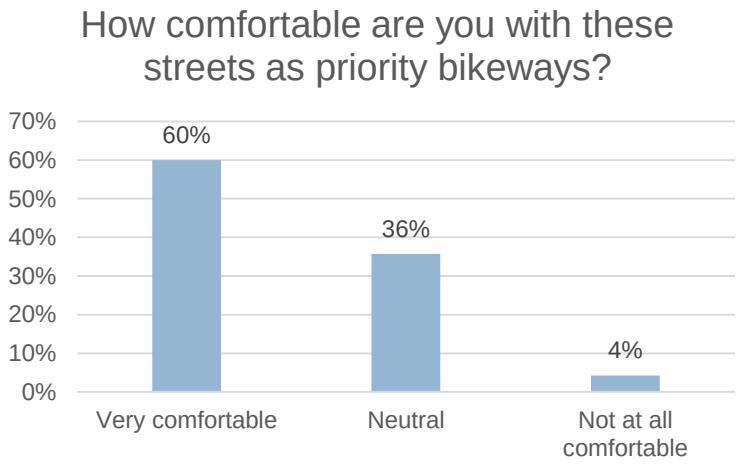


- Shared Streets Design

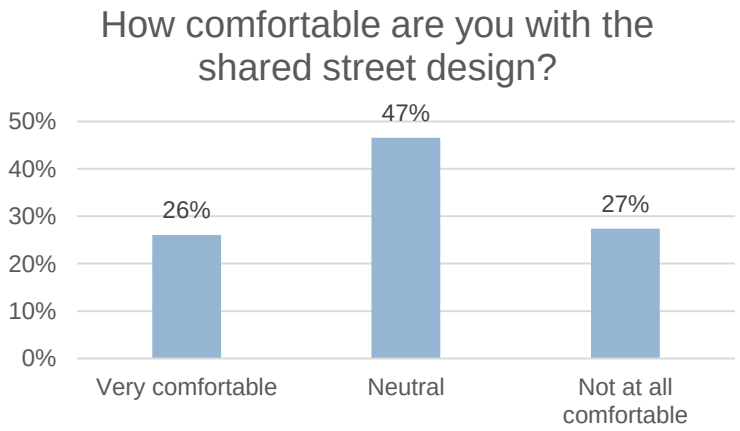


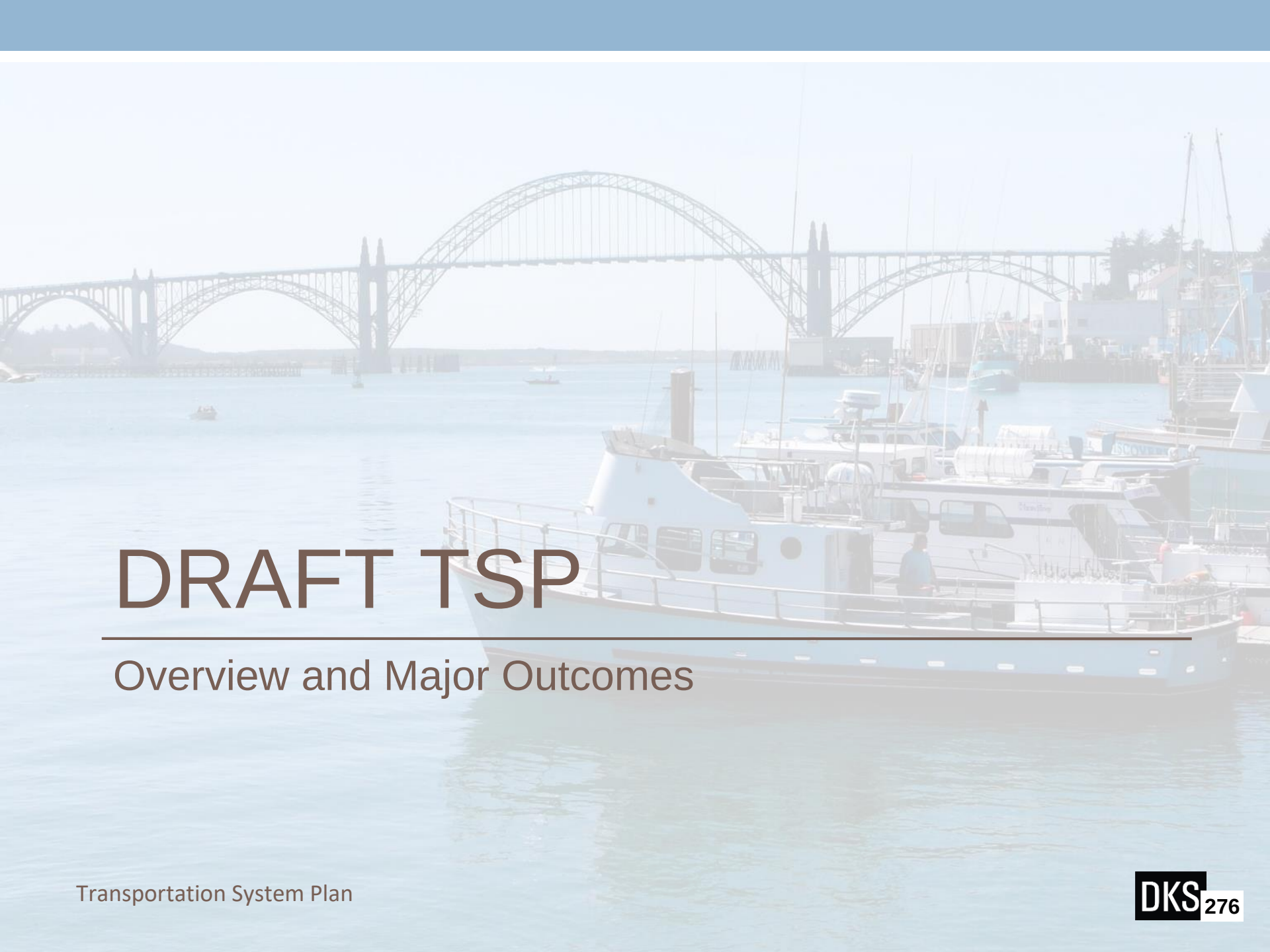
OTHER FEEDBACK WE HEARD

- Priority Bikeways



- Shared Streets Design





DRAFT TSP

Overview and Major Outcomes

DKS 276

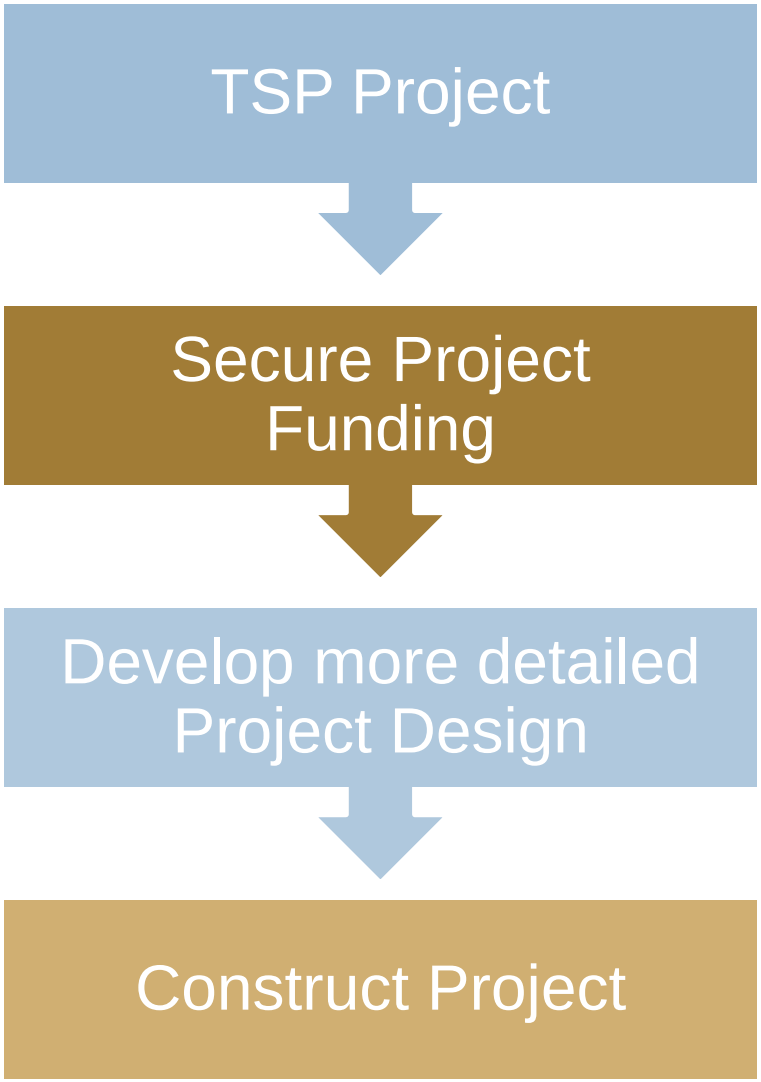
Highlights of TSP Document

- Goals & Objectives
- TSP Projects
- Project Funding
- TSP Improvement Packages
- Development review tools (updated/new standards and policies)

Goals & Objectives > > Investments

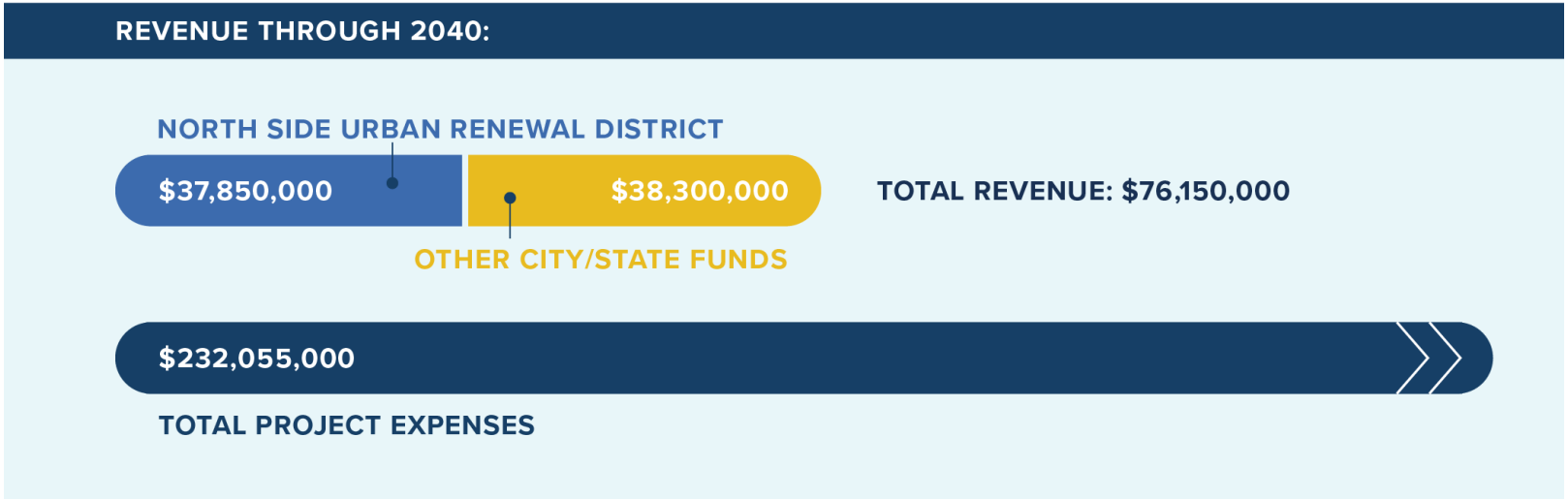
TSP Projects

- 113 projects, totaling over $232 million in investments
- Construction will not start tomorrow- each project will first need to be funded and then have a separate design process.



Project Funding Available

- $37.8 million from North Side Urban Renewal District
- $38.3 million from other City and State funding sources

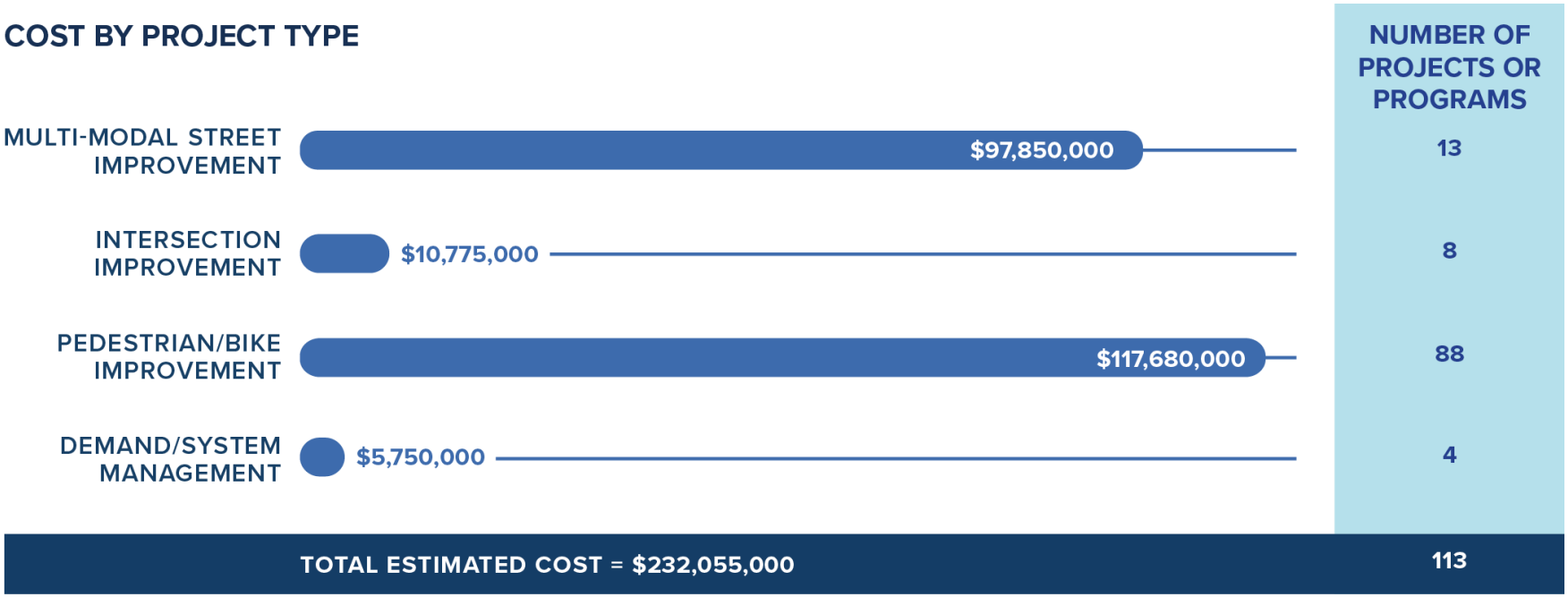


Project Improvement Packages

Basic Concept

- Lead agency identified
- Grouped by project type
- Evaluated and ranked using a set of evaluation criteria
- Two packages
  - Financially Constrained- $76 M
  - Unconstrained- $156 M

TSP Project Types

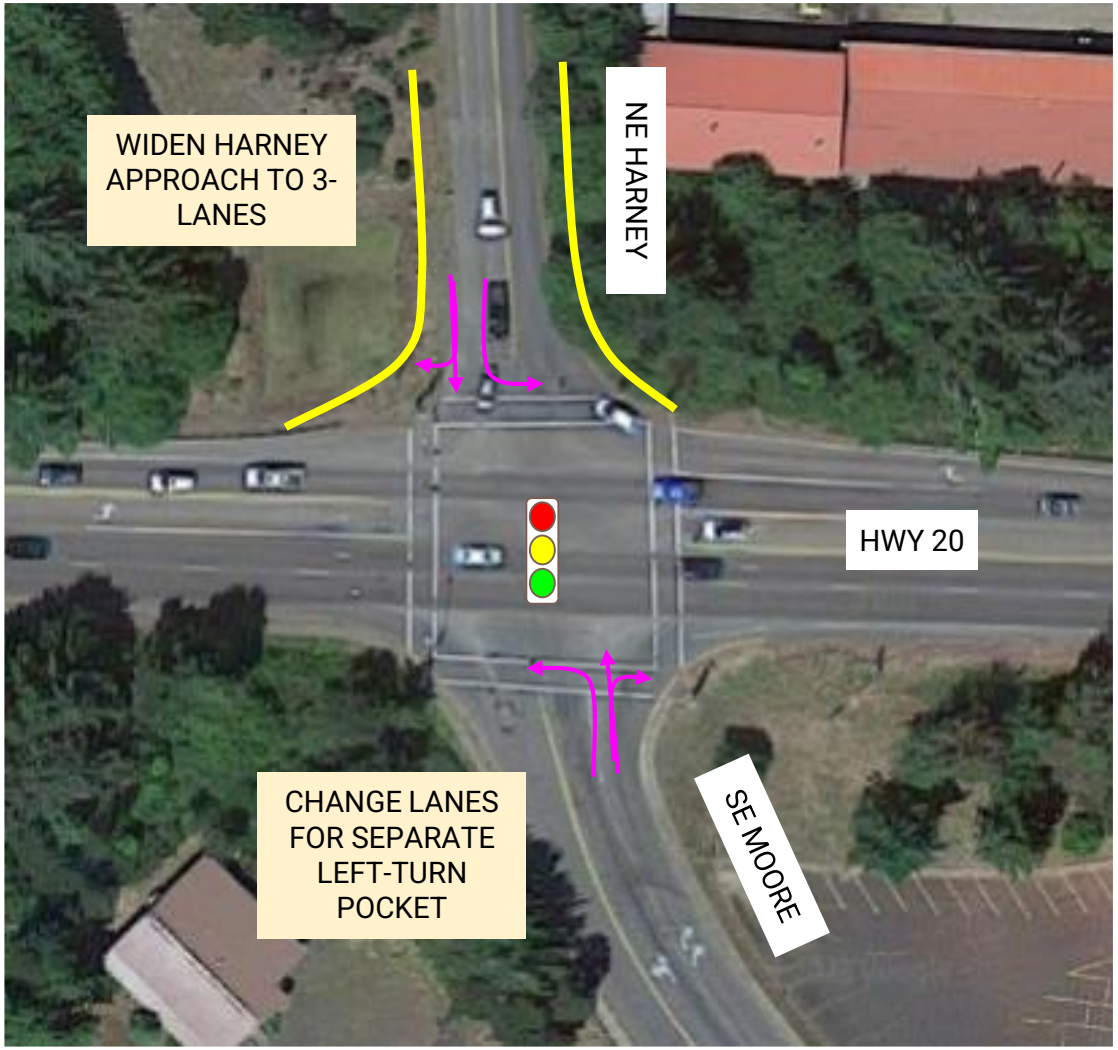


TSP Project Highlights

- US 20/SE Moore Drive/NE Harney Street
- US 101/US 20
- US 20 Circulation Improvements
- US 101 Circulation Improvements
- Harney Street Extension
- Oceanview/Nye Improvements

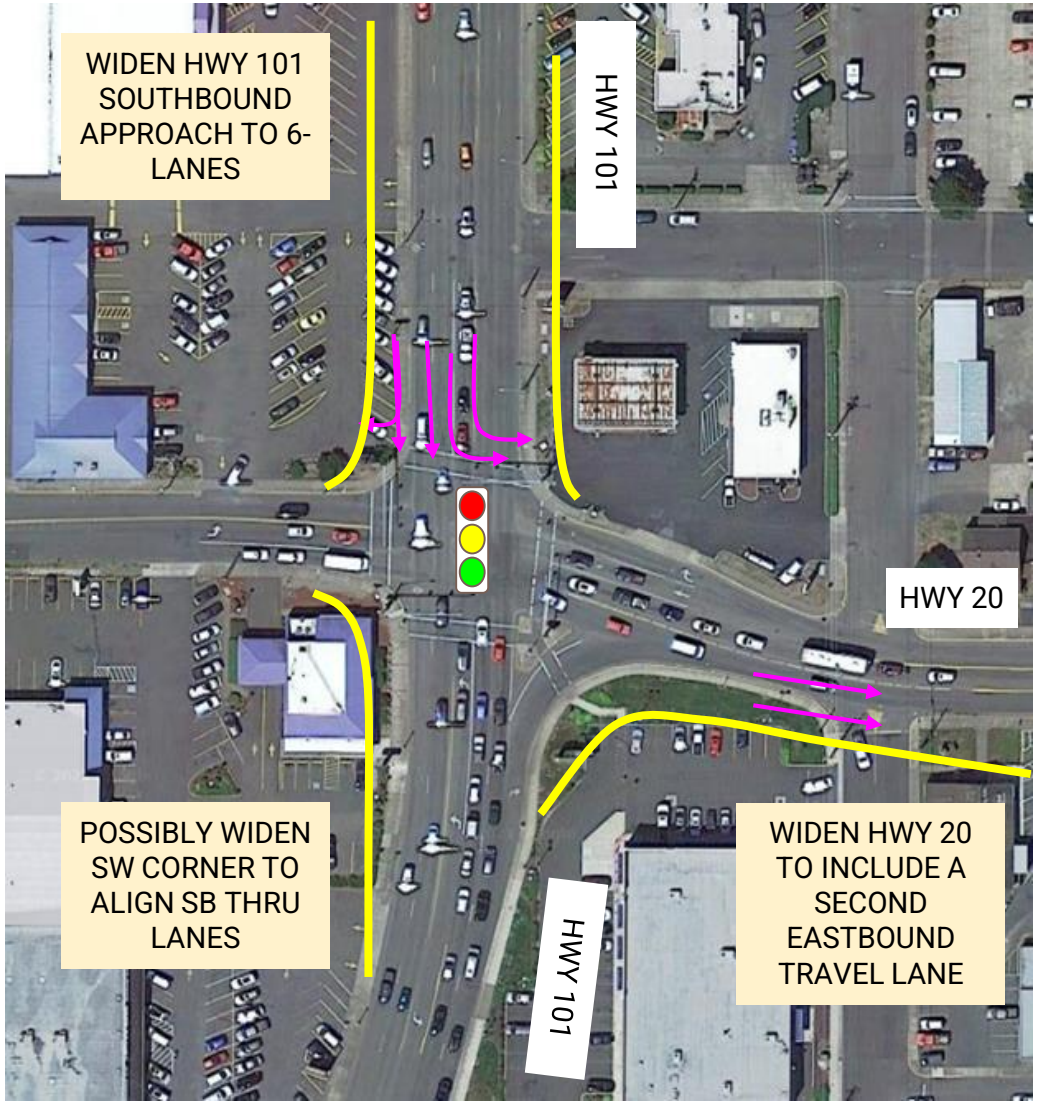
US 20 AT HARNEY - MOORE (Project ID: INT6)

- Modify existing signal to add side street left-turn pockets
- Requires widening of Harney Street approach (SB)
- Minor change on Moore approach
- Cost: $475,000
- Package: Financially Constrained



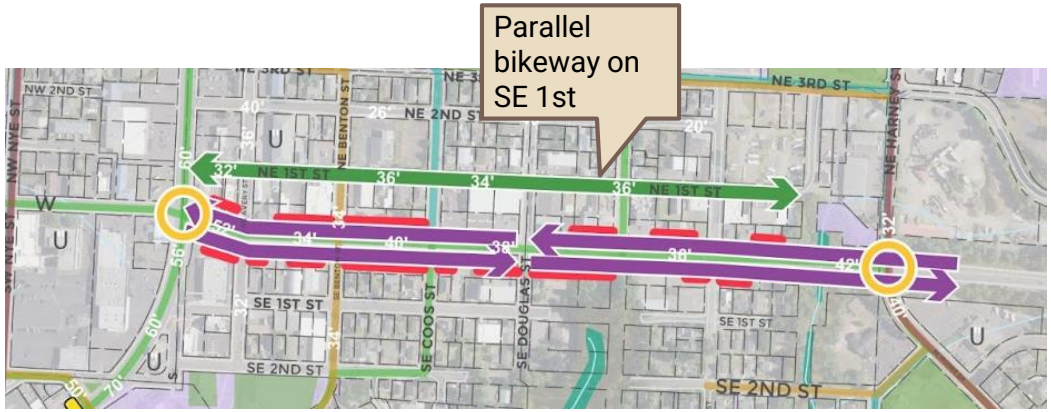
US 101 AT US 20 (Project ID: INT10)

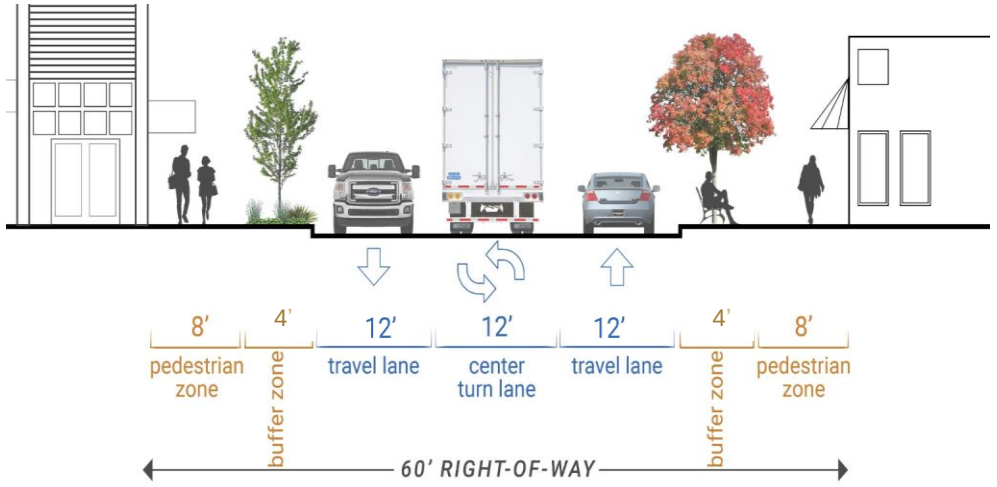
- Add 2nd Southbound left turn lane
- Requires widening on both sides of Hwy 101 approach (SB) and south side of Hwy 20
- Could impact SW corner to align SB thru traffic
- Cost: $3 to $5 million
- Package: Unconstrained



US 20 Circulation Improvements (Project ID: REV7)

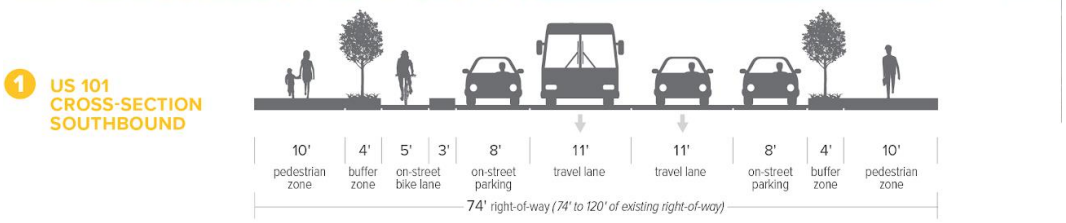
- Widens sidewalks and provides landscaping
- Requires parallel route bikeway
- Lane widths require further coordination with ODOT freight
- Cost: $6.5 million
- Package: Unconstrained

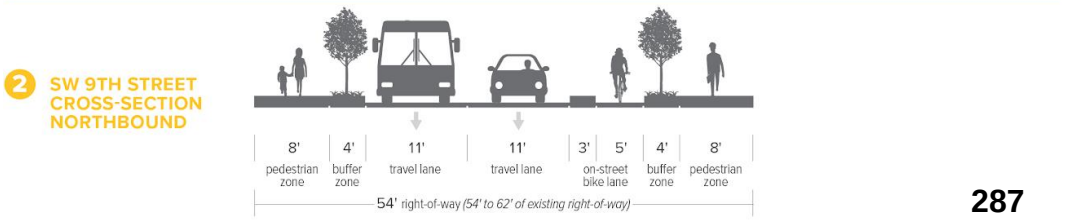




US 101 Circulation Improvements (Project ID: REV6)

- Northbound shifts to SW 9th
- Improves/adds walking and biking facilities
- Cost: $11.7 million
- Package: Financially Constrained



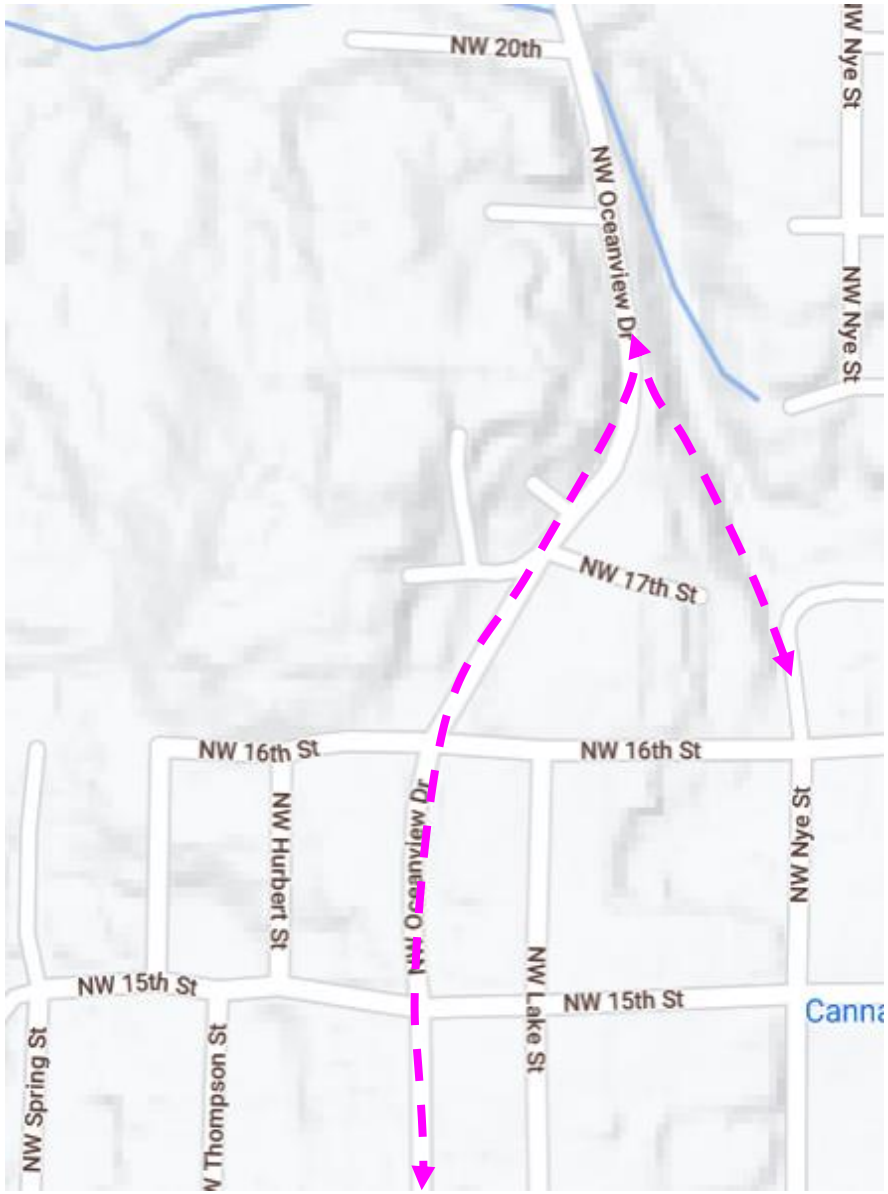


Harney Street Extension (Project ID: EXT4)

- 2-lane major collector with limited walking and bicycle facilities
- Largely serves regional traffic
- Would help relieve traffic at US 101 / US 20
- Cost: $58.6 million
- Package: Unconstrained

Oceanview / Nye Street Improvements (Project ID: EXT12, BR19)

- Nye Street extension to NW Oceanview
- Convert NW Oceanview to one-way southbound between Nye/Oceanview Street connection and SW 12th Street to make room for bike/pedestrian improvements
- Cost: $2 million
- Package: Financially constrained



Alternate Mobility Targets & Code Implementation Tech Memos #11 and 12

Key Elements of Steps Ahead to Implement Updated TSP Recommendations

Alternate Mobility Targets | TM #11

- Why AMT? - Allows Higher Congestion Levels to Reduce Major Capacity Expanding Investments
- South Beach already has Alternate Targets

- Tech Memo #11 recommends matching the South Beach Targets on US 101 north of the bridge

Code Changes | TM #12

Development Code Updates to Incorporate latest TPR requirements and changes from the TSP Update

- Adjusted threshold for Traffic Impact Assessment
- Update to address transit amenities and bike parking
- Clarified ODOT coordination on highway improvements
- Update to revised street standards, block lengths and accessway requirements
- Develop a new “transportation mitigation procedure”
- Identify city authority and process for Traffic Calming

PUBLIC COMMENT

Opportunity for Input from the General Public

Upcoming PAC Meetings

- **PAC Meeting #7** – January 13, 2022

  Discuss potential revisions to Draft TSP

- **PAC Meeting #8** – January 27, 2022

  Confirm Adoption Draft TSP Document

- **Planning Commission Hearings**
- **City Council Hearings**