



# Sunset Empire Transportation District Long-Range Comprehensive Transportation Plan Volume I

September 2016



SUNSET EMPIRE  
TRANSPORTATION  
DISTRICT



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### Transportation Project Advisory Committee

Madora Bahr, ADA Paratransit user	Patrick Preston, SETD Senior & Disabled Advisory Committee
Mark Barnes, City of Cannon Beach	Melissa Johnstone, Northwest Senior & Disabilities Services
Nathan Crater, City of Astoria	Michael Summers, Clatsop County
Don Johnson, City of Seaside	Kevin Widener, SETD Board of Commissioners
Bill Johnston, ODOT Region 2	Patrick Wingard, Oregon Department of Land and Conservation Development
Don Snyder, City of Warrenton	

### Oregon Department of Transportation Representatives

Naomi Zwerdling, ODOT Senior Region Planner/Lead Grant Manager for Transportation/ Land Use	Jamey Dempster, ODOT Rail and Public Transit Division Regional Transit Coordinator
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### SETD Board of Commissioners

Kathy Kleczek, Board Chair	Tracy MacDonald	Kevin Widener
Paul Lewicki, Vice Chair	Rae Goforth	Jim Servino
Carol Gearin, Secretary/Treasurer		

### SETD Project Team

Jeff Hazen, Executive Director & Project Manager	Mary Parker, Executive Assistant & Outreach Support
--	---

### Consultant Team

DKS & Associates	Nelson\Nygaard Consulting Associates	Angelo Planning Group
Chris Maciejewski, P.E., PTOE, Project Lead	Stephanie Wright, Project Manager	Matt Hastie, AICP, Land Use & Code Lead
Ray Delahanty, AICP	Oren Eshel Scott Chapman	Shayna Rehberg, AICP

# 1 WHY A LONG-RANGE PLAN?

The Sunset Empire Transportation District (SETD) sits at a major opportunity point in its history. After a financial collapse in 2011, SETD has since stabilized with steadily rising ridership and new leadership. Having regained its footing, the agency can now embark on a strategic planning effort to understand transit's role in the community and plot a course for transit's evolution during the next 20 years.

SETD serves the main population centers of Clatsop County along the U.S. 30 and U.S. 101 corridors, and also provides connections to Columbia and Tillamook Counties. SETD operates five fixed routes, ADA paratransit, and Dial-A-Ride service. The agency also houses the Medicaid brokerage for the region, provides travel training, and supports implementation of the Oregon Transportation Options plan by staffing a TO coordinator tasked with promoting commute options.

The current ridership market primarily consists of “transit-dependent” people who do not have another form of transportation. Key goals of this project include making service more convenient for existing riders, understanding community transportation needs to expand the ridership base, and connecting people both within Clatsop County as well as throughout the region.

Several transportation, demographic, and economic trends make transit a particularly meaningful public investment for Clatsop County at this time:

- Growth along the U.S. 101 corridor, especially in Warrenton and Seaside, continues to add density levels supporting public transportation. A Walmart development in Warrenton will have major impacts on travel demand.
- The county already exhibits a fairly high percentage of commuters traveling by transit compared to neighboring counties, showing both interest in bus service as well as potential for more ridership.
- Parking crunches in Cannon Beach and, to a lesser extent, in Seaside, have community and business leaders interested in promoting transit as a way of maintaining access.
- The county has a high percentage of low-income people who do not have alternate transportation options. While jobs, especially in the tourism market, are growing, affordable housing is becoming scarce. People who work in Cannon Beach or Seaside are increasingly finding housing in Warrenton or Hammond. This housing-jobs geographic separation is especially challenging for low-income residents.
- The summer tourism season continues lengthening into the “shoulder season” of spring and fall, meaning increased tourism-based employment year-round and a need for regional transportation to Clatsop County's coast.
- SETD joined a regional alliance called Northwest Connector focused specifically on reaching the tourism market and linking the Portland region to the coast via transit.

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Stakeholders and the public generally agree that current routes match *where* major population centers and trip patterns are today; however, bus service may not be running *when* people need it (such as in late evening or weekends) or at a frequency that can attract more riders.

The Plan focuses on Clatsop County, addresses a 20-year planning horizon and incorporates the following process:

- Existing conditions analysis including documenting background conditions, travel patterns, and demographic trends.
- Transit network assessment including ridership and productivity levels. A peer review of similar systems was used to help benchmark SETD's performance.
- Extensive community outreach including community surveys, transit rider surveys, and mobile outreach events.
- Creation of goals and objectives with input from the Transportation Project Advisory Committee and the public.
- Drafting of service opportunities based upon outreach and technical analysis.
- Validation of goals and objectives by creating an evaluation framework to assess efficacy of service opportunities.
- Final recommendations for immediate, short, medium, and long-term service changes that will meet the community's vision for transit in a fiscally reasonable way.

All technical memorandum documenting the project process in detail can be found in Volume II of the Long-Range Comprehensive Transportation Plan.

## 2 THE CLATSOP COUNTY COMMUNITY & REGION

Clatsop County’s previous planning efforts, demographics, employment, and economic characteristics paint a picture of the community and the market for public transportation.

### PLANNING CONTEXT

#### Documents Reviewed

- Previous planning efforts provide background information on trends and priorities for the state, county, and communities within SETD’s service area. The following documents were reviewed:
- Sunset Empire Comprehensive Transportation Plan, 2001
- Clatsop County Comprehensive Plan, 2012
- Astoria Comprehensive Plan, 2010
- Seaside Transportation System Plan, 2010
- Transportation Planning Rule (TPR) (OAR 660-012)
- Sunset Empire Transportation District Coordinated Human Services Transportation Plan, 2011
- Astoria Transportation System Plan, 2013
- The North by Northwest Connector Plan, 2013
- Sunset Empire Public Involvement Plan, LEP, Title VI, 2014
- Clatsop County Transportation System Plan, 2015
- Sunset Empire Strategic Prioritization Plan, 2012 (strategies updated 2015)

For additional demographic, travel pattern, and community destinations maps, see Volume II, Section A.

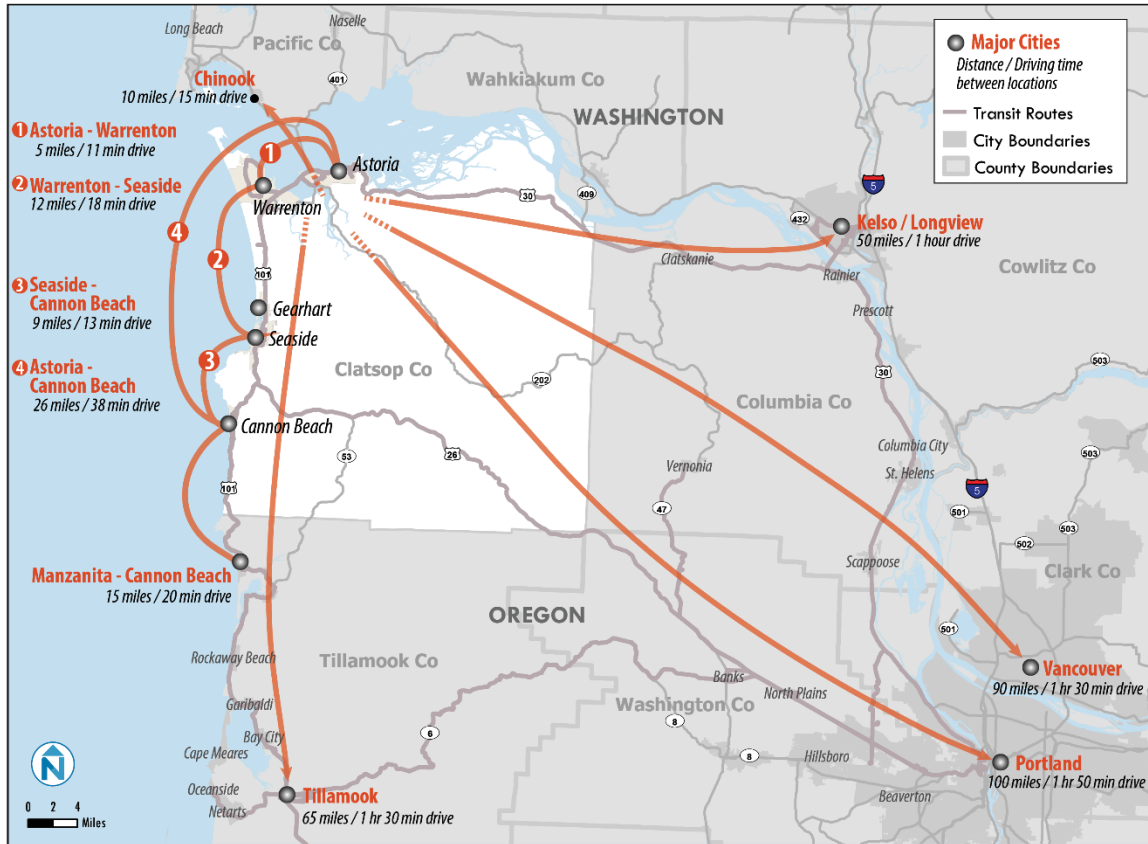
### CLATSOP COUNTY COMMUNITIES

Clatsop County lies in the northwest corner of Oregon, covering 1,084 square miles (Figure 2-1). Much of the county is rural and heavily forested, with an overall average population density of 45 persons per square mile (less than a tenth of a person per acre). The relative proximity to Portland (approximately 100 miles from Astoria and 80 miles from Seaside) attracts many tourists and visitors to the popular coastal communities. The City of Astoria also provides the only crossing of the Columbia River for nearly 60 miles, creating an important connection to Washington State via the Astoria-Megler Bridge.

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Many of the coastal cities in Clatsop County are known for their tourism, arts, and outdoor recreation. As a result, during the summer months U.S. 30, U.S. 101, and the Youngs Bay Bridge experience spikes in traffic resulting in congestion and bus delays.

Figure 2-1 Clatsop County in Regional Context



## MARKET ANALYSIS

Successful fixed-route public transportation (service running on a set path with time points) achieves highest efficiency levels in communities where clusters of people and destinations exist. Population and employment are key factors that make transit financially efficient.

## Population Today and Tomorrow

- Incorporated communities comprise about 65% of Clatsop County's population, while 35% of residents live in unincorporated areas. Between 2010 and 2015, Clatsop County grew at an average annual rate of 0.4%, less than the statewide rate of growth of 1% annually. Annual growth within the county was uneven, with Warrenton and Seaside growing at slightly higher rates (0.7% and 0.4%, respectively) than Astoria, Cannon Beach, and Gearhart (0.2%). Nearly a quarter of the County's growth occurred in Warrenton. Population in unincorporated communities grew at the same rate as incorporated communities, which presents challenges for public transportation as customers are more widely dispersed. None of the incorporated communities lost population.

- Figure 2-3 shows Clatsop County’s population density. Density matters because public transportation operates more effectively and cost-efficiently when serving clusters of people and destinations. Oregon’s Office of Economic Analysis 2013 projections estimate that Clatsop County’s population will grow to 40,521 by 2035, a 7% increase. This is much smaller than the statewide prediction of a 24% increase.

## Transit-Dependent Population

In rural places like Clatsop County, transit service often carries a large share of persons who are “transit-dependent,” or have no personal transportation options. Transit provides this population with a crucial lifeline to jobs, services, family and friends, and medical providers. Analyzing concentrations of the transit-dependent – older adults (65+), youth under 17, people with low incomes, people with disabilities, those with limited English proficiency, and households without a vehicle – reveals places where transit would likely find customers, or a market for transit.

Clatsop County is, on average, both older and poorer than the statewide and national averages. The county has a greater proportion of persons with disabilities, but fewer residents with limited English-speaking ability. More than 25% of Cannon Beach residents are older adults. Astoria, Seaside, and Warrenton have high levels of low-income individuals. Seaside contains a high percentage of zero-vehicle households (Figure 2-2).

**Figure 2-2 Demographic Information on Clatsop County Communities, 2013**

Geography	Total Population	% of County	Older Adults (65+)	Youth (10-17)	Low-Income Population [1]	Zero-Vehicle Households	Population with Disabilities [2]	Population with Limited English [3]
United States	311,536,594	-	13%	11%	32%	9%	15%	4.5%
Oregon	3,868,721	-	14%	10%	33%	8%	16%	3.5%
Clatsop County	37,157	-	18%	9%	36%	9%	21%	1.7%
<b>Incorporated Communities</b>								
Astoria	9,518	26%	17%	9%	41%	9%	18%	2.8%
Seaside	6,455	17%	18%	8%	39%	18%	26%	1.3%
Warrenton	5,057	14%	12%	11%	42%	8%	23%	0.3%
Cannon Beach	1,553	4%	26%	4%	37%	12%	23%	4.4%
Gearhart	1,513	4%	22%	12%	22%	2%	17%	0.3%

Note: The table presents data from all cities within Clatsop County. Low-Income populations are defined by households making up to 185% of the poverty level. This definition is consistent with Oregon WIC Policy 612. [1] Percentage of population for which poverty status is determined. [2] Age 18 or older. [3] Age 5 or older who speak English “less than well”.

Source: U.S. Census Bureau, 2009-13 American Community Survey 5-year Estimates

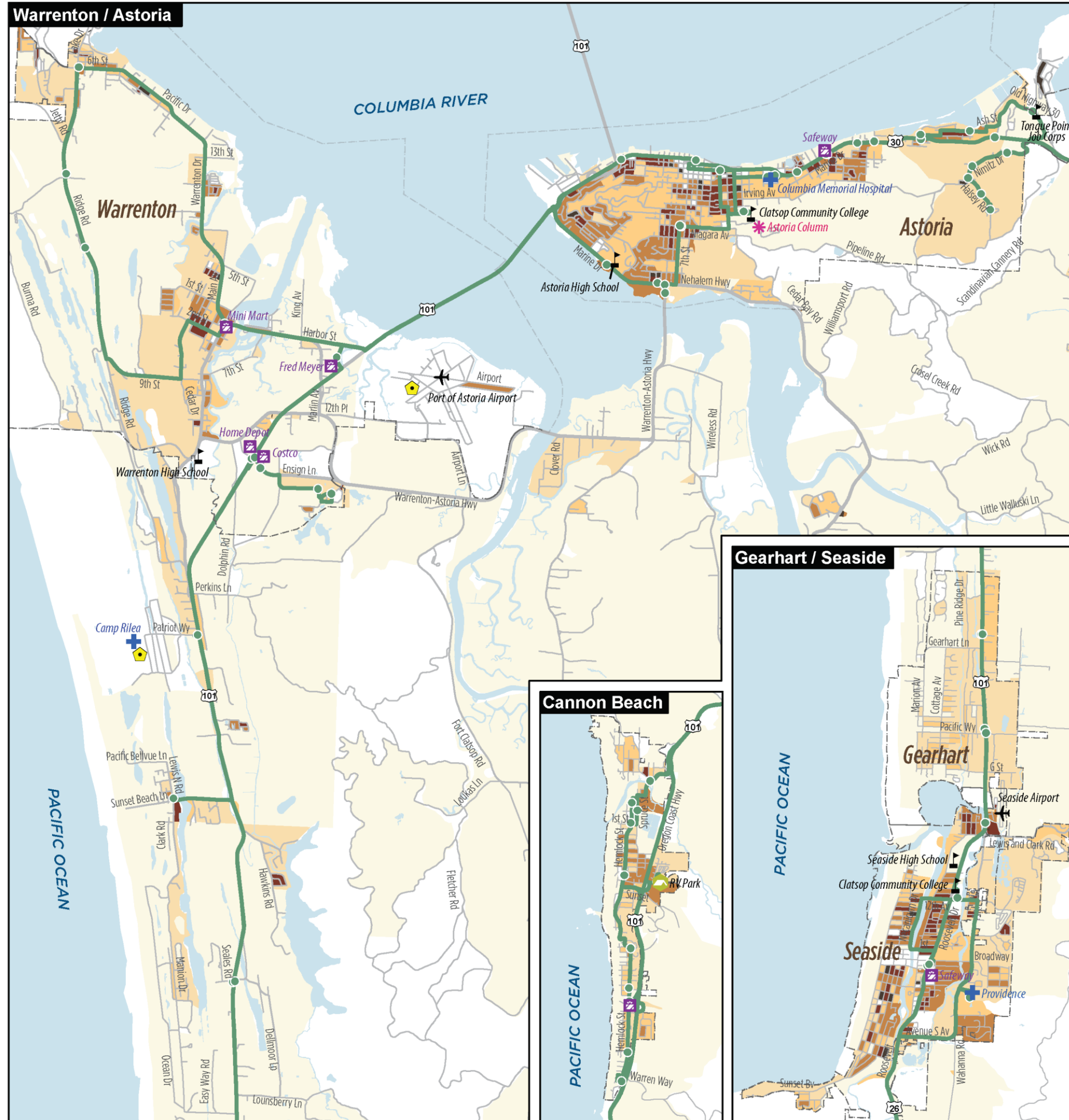
## Transit Propensity Index

A transit propensity index of these demographic factors was created to understand aggregate need by Census Block Group (Figure 2-4). These segments of the population classified as “high” on the index are more likely to depend on transit for their transportation needs, and the map shows where the highest densities of these populations are located in Clatsop County. The locations with the highest propensity to use transit are found in northwest Astoria and southeast Seaside. These

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populations tend to be located near social services and multifamily housing. Moderate to high transit propensity exists in the rest of Seaside and the western and eastern portions of Astoria. This tool does not mean that other areas of the county do not need transit; rather, it provides a way of understanding the types of public transportation that could meet needs in different parts of the county.

Figure 2-3 Population Density



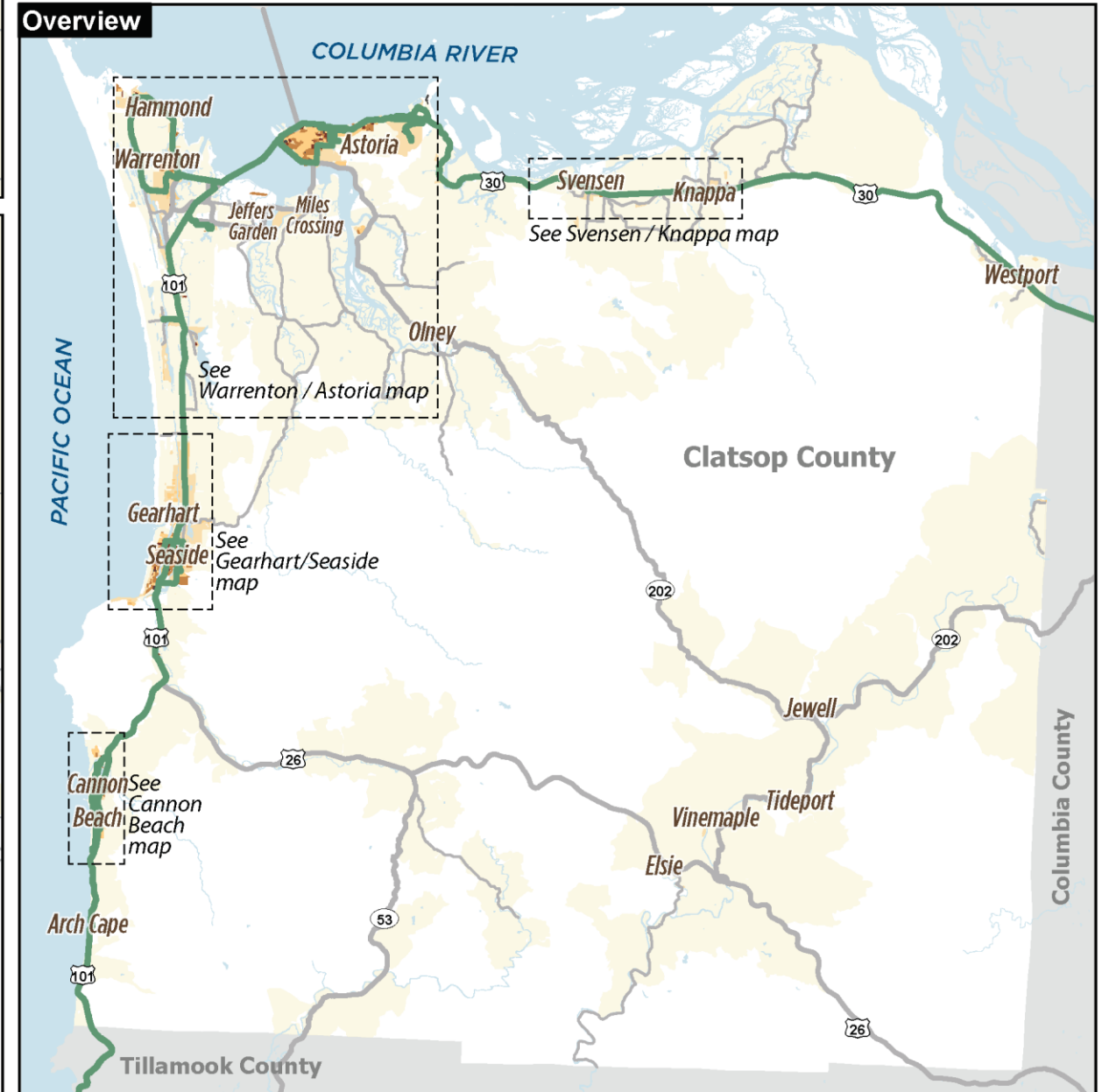
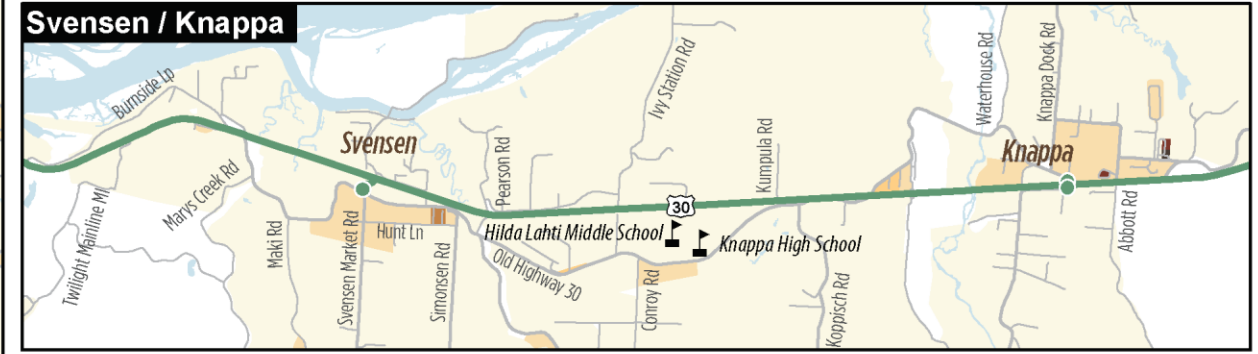
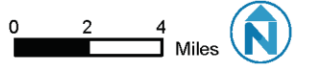
**Population Density (2010)**

Persons per Acre, by Census Block

- Less than 1.0
  - 1.1 - 2.5
  - 2.6 - 5.0
  - 5.1 - 10.0
  - 10.1 - 20.0
  - 20.1 - 59.7
- Source: Census 2010

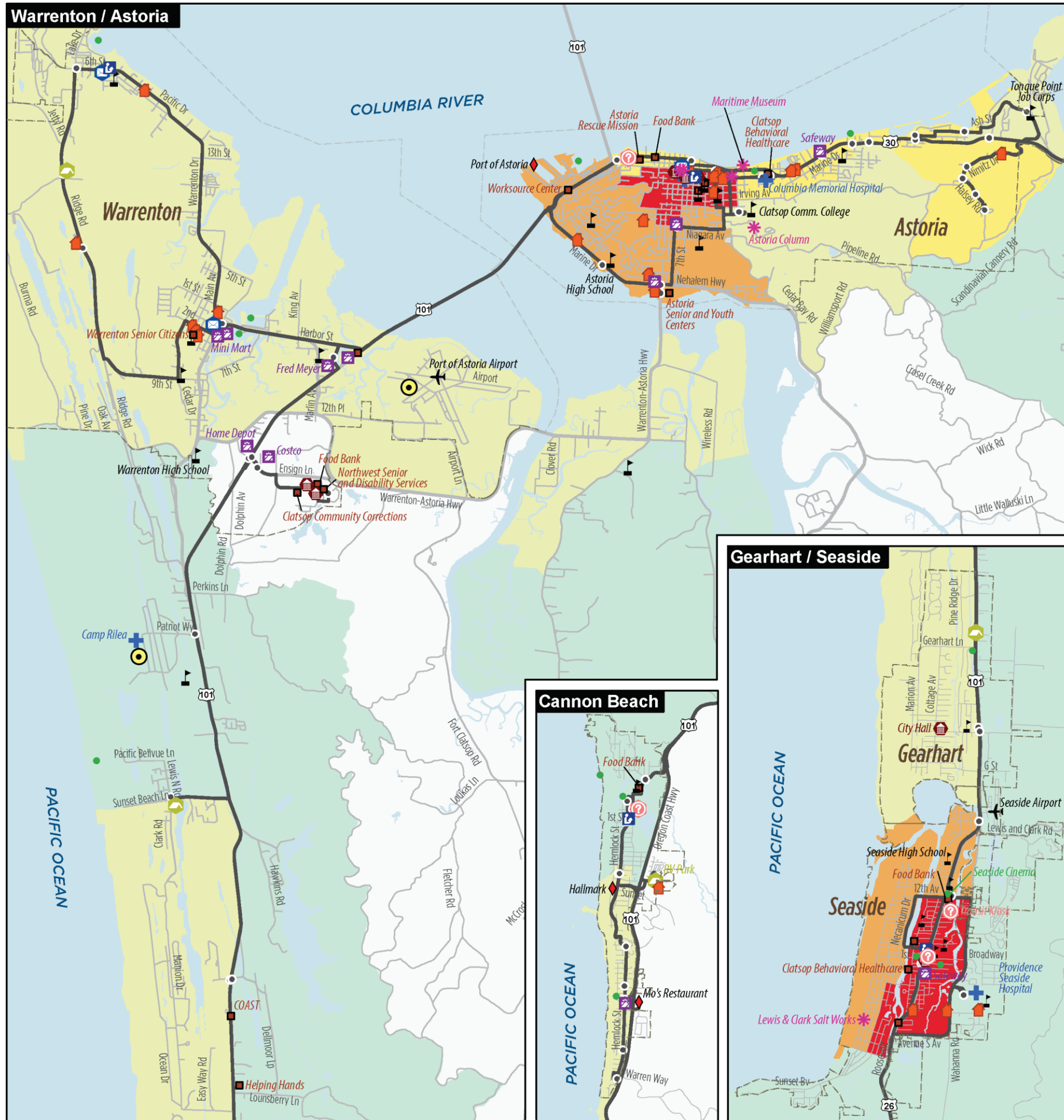
Landmarks

- Attractions
- Education
- Airport
- Medical
- Shopping
- Coast/National Guard
- Sunset Empire Transportation District Routes and Stops
- City Boundaries



Source: U.S. Census Bureau, 2010

Figure 2-4 Transit Propensity Index Results

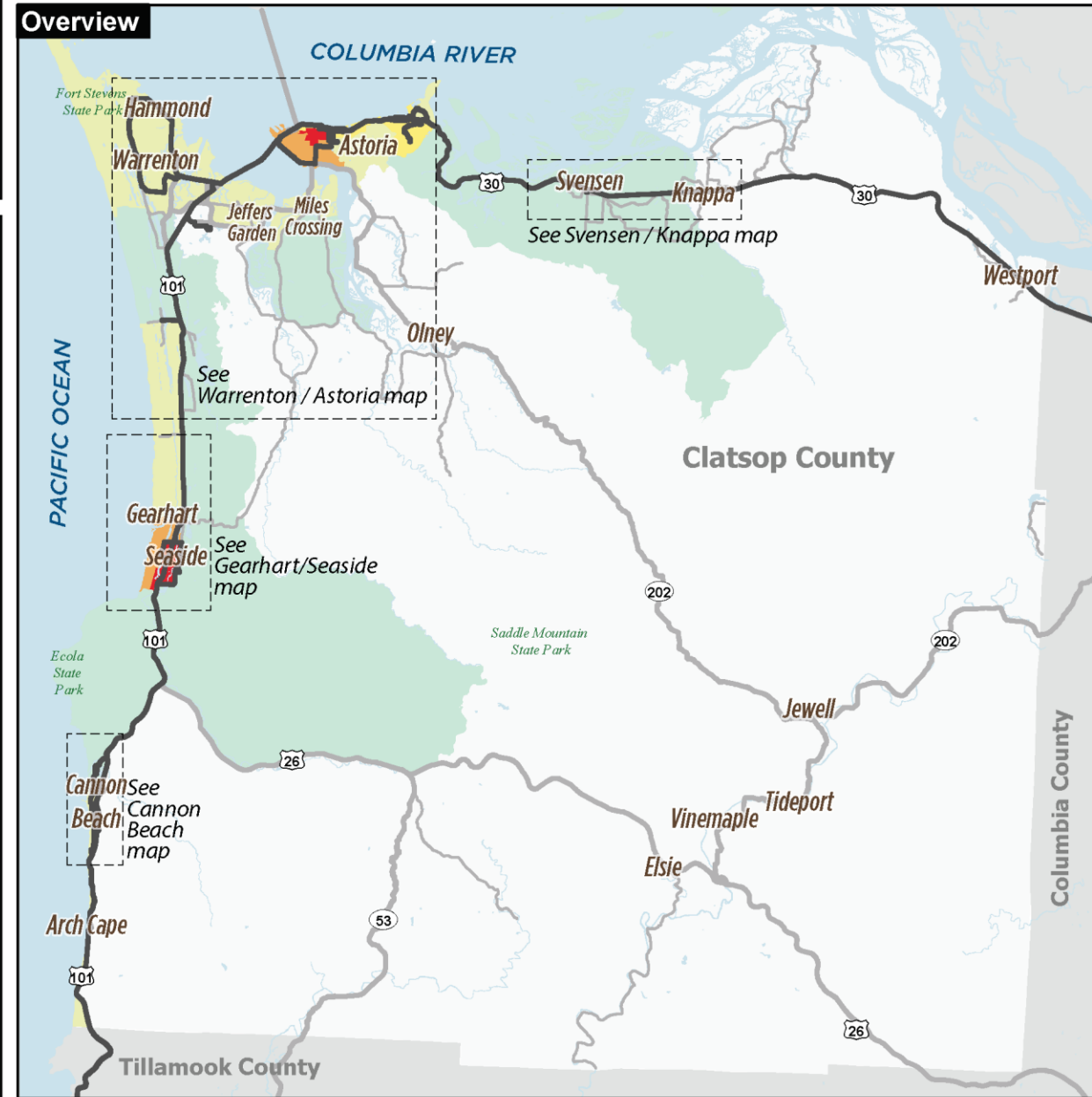
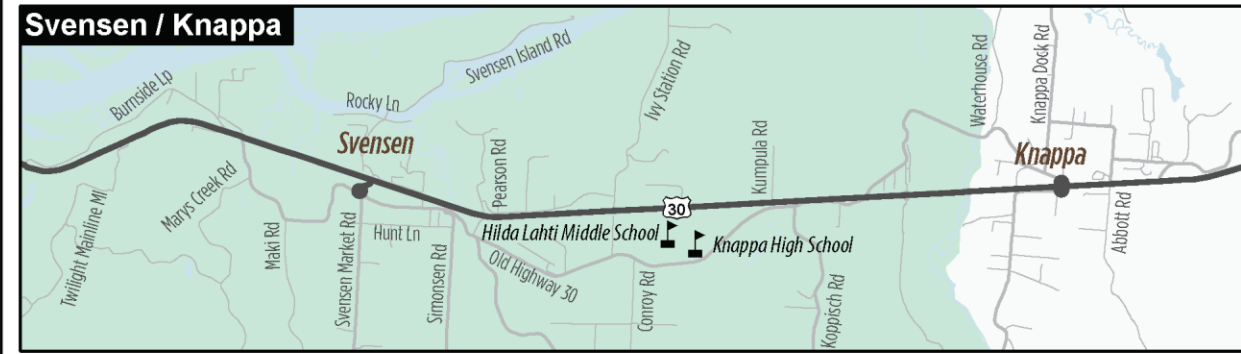


### Transit Propensity Index (2009 - 2013)

Low  
High

\*Transit Propensity Index is based on combined densities of households whose income is less than 185% of poverty line, persons with disabilities, older adults aged 65+, youth aged 10 through 17, and zero vehicle households.  
Data Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

✈ Airport	♦ Major Employer	🏕 Campground
🎓 Education	👤 Coast/National Guard	🌳 Recreation
🏛 Government	📖 Library	🌸 Attraction
🏠 Social Services	🏥 Medical	📍 Information
🛒 Grocery/Shopping	📧 Post Office	—●— Transit Routes and Stops
🏠 Multifamily/Senior Housing		▭ City Boundaries



## TRAVEL PATTERNS

### General Flows

Travel demand model data provide information about the overall size of travel markets. Figure 2-5 provides trip origin-destination data from the Astoria-Warrenton Travel Demand model for the average weekday in a future year of 2035. It indicates that:

- Most of the travel in the Astoria-Warrenton area is either within or between Astoria and Warrenton.
- The U.S. 101 corridor, serving south Clatsop County, is a significantly larger travel market than the U.S. 30 corridor east of Astoria.
- Nearly 3,900 round trips occur between Pacific County and the Astoria/Warrenton area.

In addition, the model projects 2,150 projected round trips between the Miles Crossing area along US 101 Business and Astoria/Warrenton in the peak summer season, with the Astoria end of the corridor carrying approximately 1.5 times as many trips as the Warrenton end.

**Figure 2-5 Trip Origin-Destination Pairs, Average Weekday, 2035**

From   To	Astoria	Warrenton	U.S. 101 South	Astoria-Megler (WA) Bridge	U.S. 30 East
Astoria	30,812	7,171	1,645	3,150	1,608
Warrenton	7,175	11,744	3,278	737	278
U.S. 101 South	1,645	3,278	-	1,299	1,333
Astoria-Megler (WA) Bridge	3,150	737	1,299	-	272
U.S. 30 East	1,608	278	1,341	268	-

Source: Astoria-Warrenton Travel Demand Model

### Work Flows

According to U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) data, nearly half of Clatsop County residents work within the county (46%), and relatively few travel to adjacent coastal counties for work. Approximately 8% of county residents work in Portland, 2.2% work in Salem, and almost 2% work in Hillsboro. Approximately 56% of Clatsop County workers live outside the county. The largest concentrations of commuters from outside the county travel from Portland (2.1%) and Longview (1.1%).

Many of the county’s largest employers are located in the northern part of the county and within city limits. Large employers listed in Figure 2-6 represent a range of industries, including logging, medical services, higher education, and government. Although not represented among the largest employers, tourism is a major industry in the county, particularly in coastal areas. The retail and leisure/hospitality sectors are both the largest and the fastest growing employment categories.<sup>1</sup>

<sup>1</sup> Oregon Employment Department, <https://www.qualityinfo.org/northwest-oregon>

**Figure 2-6 Large Employers in Clatsop County**

Employer	Location	Employer	Location
Georgia Pacific/ Wauna Mill	Clatskanie	Tongue Point Job Corps Center	Astoria
Columbia Memorial Hospital	Astoria	Clatsop Community College	Astoria
Providence Seaside Hospital	Seaside	City of Astoria	Astoria
Clatsop County	Astoria	Clatsop Care Center	Astoria
Fred Meyer	Warrenton	Bornstein Seafoods	Astoria

Source: NW Oregon Transit Alliance Regional Transit Program, Market Analysis Report, May 2012

The major concentrations of employment in the county are generally located in proximity to transit. However, transit hours of operation and schedules may not be matched to employee shift times. A cluster of large retailers are located in Warrenton (including Costco, Fred Meyer, Home Depot, and a future Walmart location) which is both an employment and retail destination. Existing transit service, however, ends at 10 p.m. while stores like Fred Meyer are open until 11 p.m., meaning schedules do not match employee shift times. At the same time, providing public transportation in a small community later than 10 p.m. is fairly rare, and the community must weigh the cost of providing service with potential ridership served.

**Clatsop County Mode Share**

A total of 1.6% of Clatsop County workers take public transit to work. This is about a quarter of the statewide average, but compared to other counties in the Northwest Connector alliance, Clatsop Counties transit mode share is higher than Columbia and Tillamook Counties (0.9%), about the same as Lincoln County (1.7%), and slightly lower than more urban Benton County (2.4%).

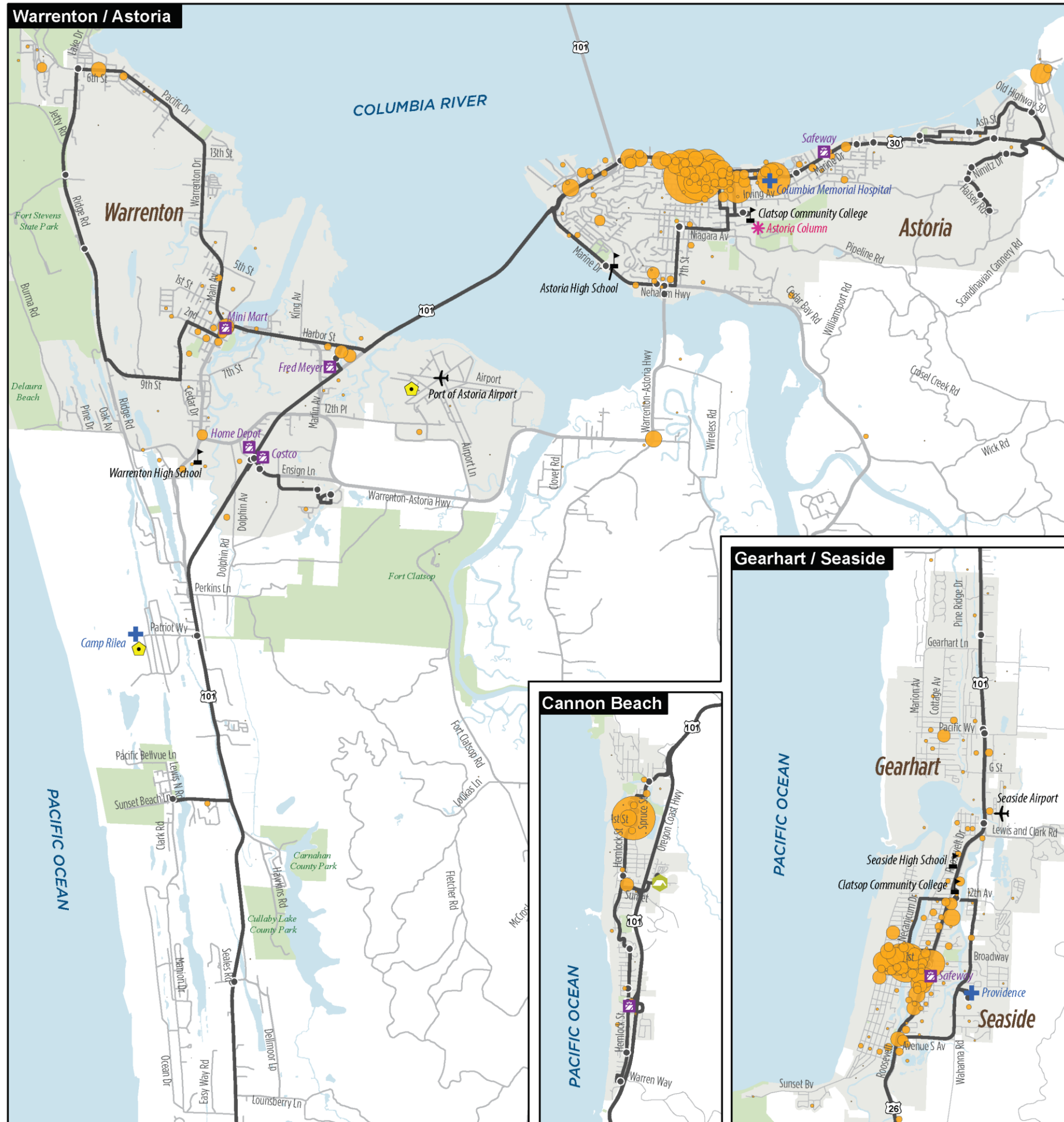
A slightly smaller share of Clatsop County residents drive alone to work than the statewide average (71% versus 72%), but higher than average shares of workers carpool (13% versus 10%) and walk to work (7% versus 4%). This may indicate that workers would be willing to consider and use transit for commuting if it served workers at the times and locations they need. Clatsop County also has a slightly larger than average percent of the population who works from home, particularly in Cannon Beach – 14% versus the statewide average of 6%.

**Employee Work and Home Locations**

Figure 2-7 and Figure 2-8 show the more detailed work and home locations of those employed in Clatsop County to see if transit can serve local employment needs. Figure 2-7 shows that Clatsop County jobs are located primarily in the communities along U.S. 30, U.S. 101, and in the Warrenton area. Major employment centers and work locations are generally served by transit routes, although there are exceptions such as Miles Crossing, Warrenton High School, and west of U.S. 101 in Gearhart or Seaside.

Figure 2-8 shows that home locations of Clatsop County workers are generally clustered within communities and often near a transit line. The exception is along OR 202 (Nehalem Highway), where clusters of residents live, but currently lack transit service. In Seaside, many workers live several blocks west of the U.S. 101, beyond a convenient walk to transit.

Figure 2-7 Work Locations of Clatsop County Residents



Where Workers who Live in Clatsop County Work (2011)

**Workers per Acre by Census block**

1 5 10 50 100

**Landmarks**

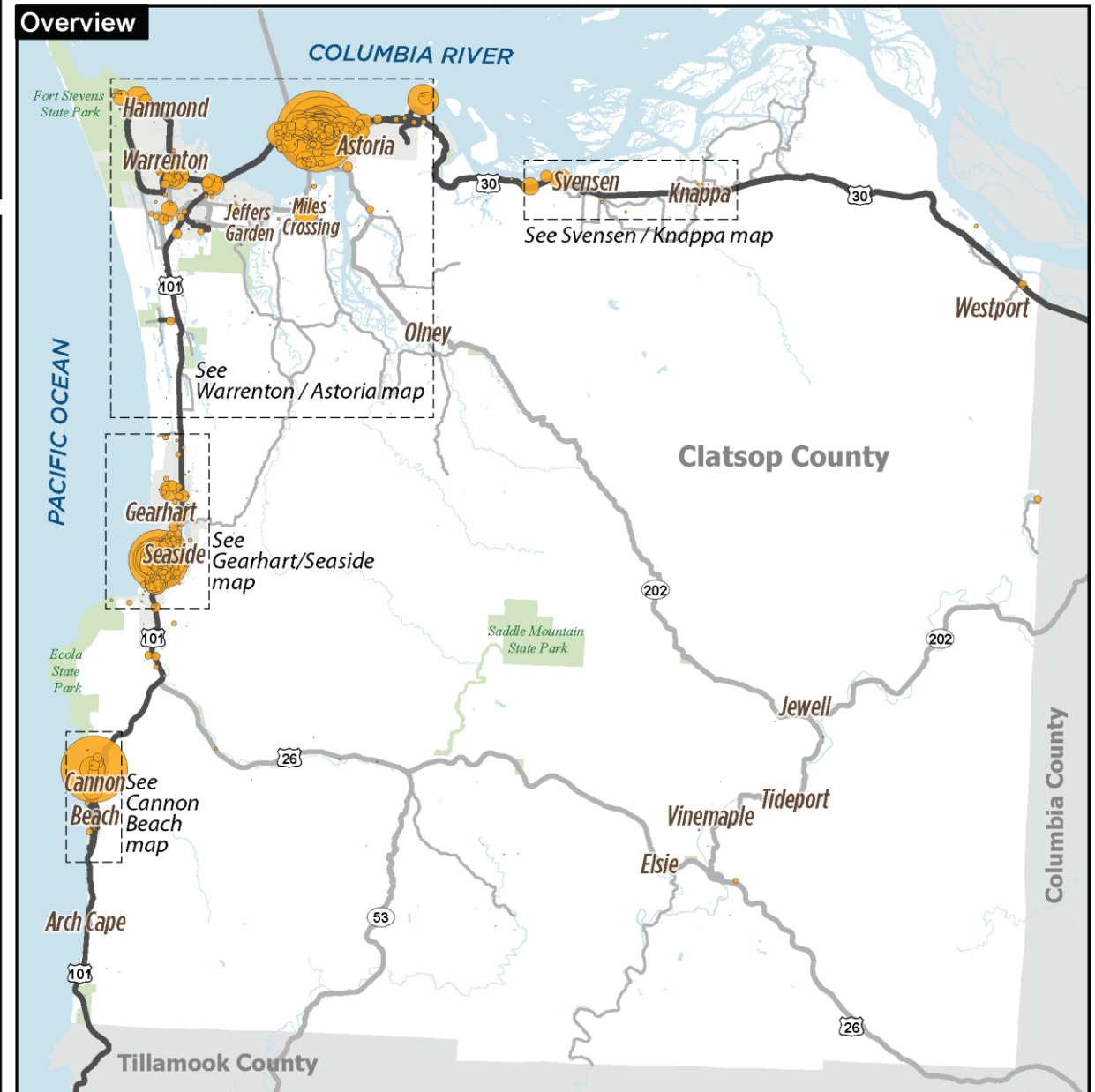
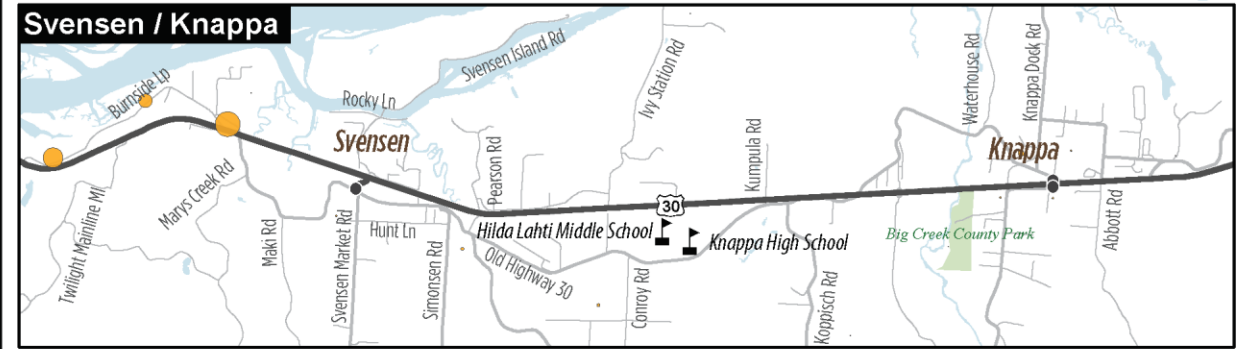
- Attractions (pink star)
- Medical (blue cross)
- Education (black graduation cap)
- Airport (black airplane)
- Shopping (purple shopping bag)
- Coast/National Guard (yellow pentagon)

— Sunset Empire Transportation District Routes and Stops

City Boundaries

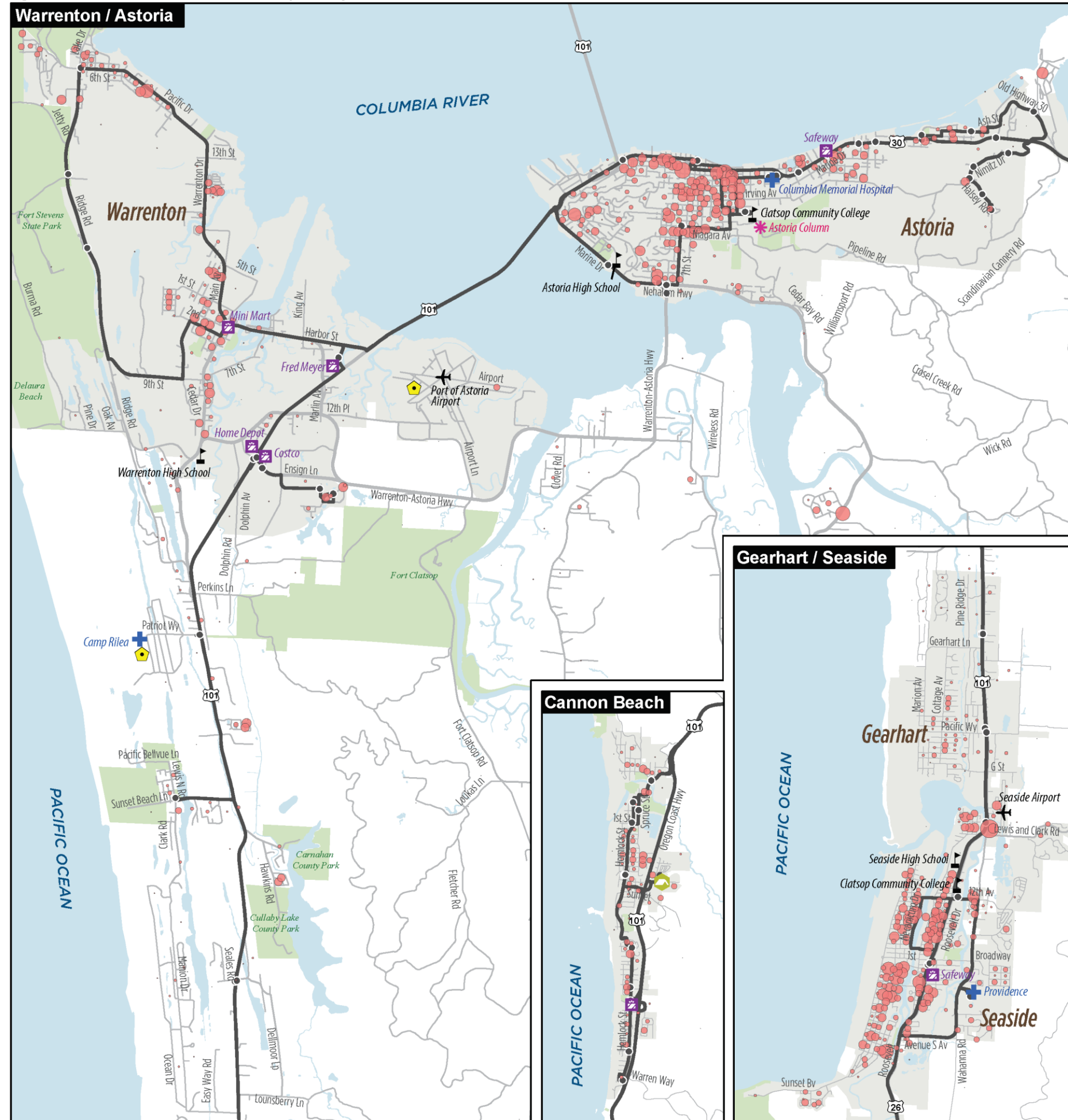
0 2 4 Miles

Source: LEHD 2011

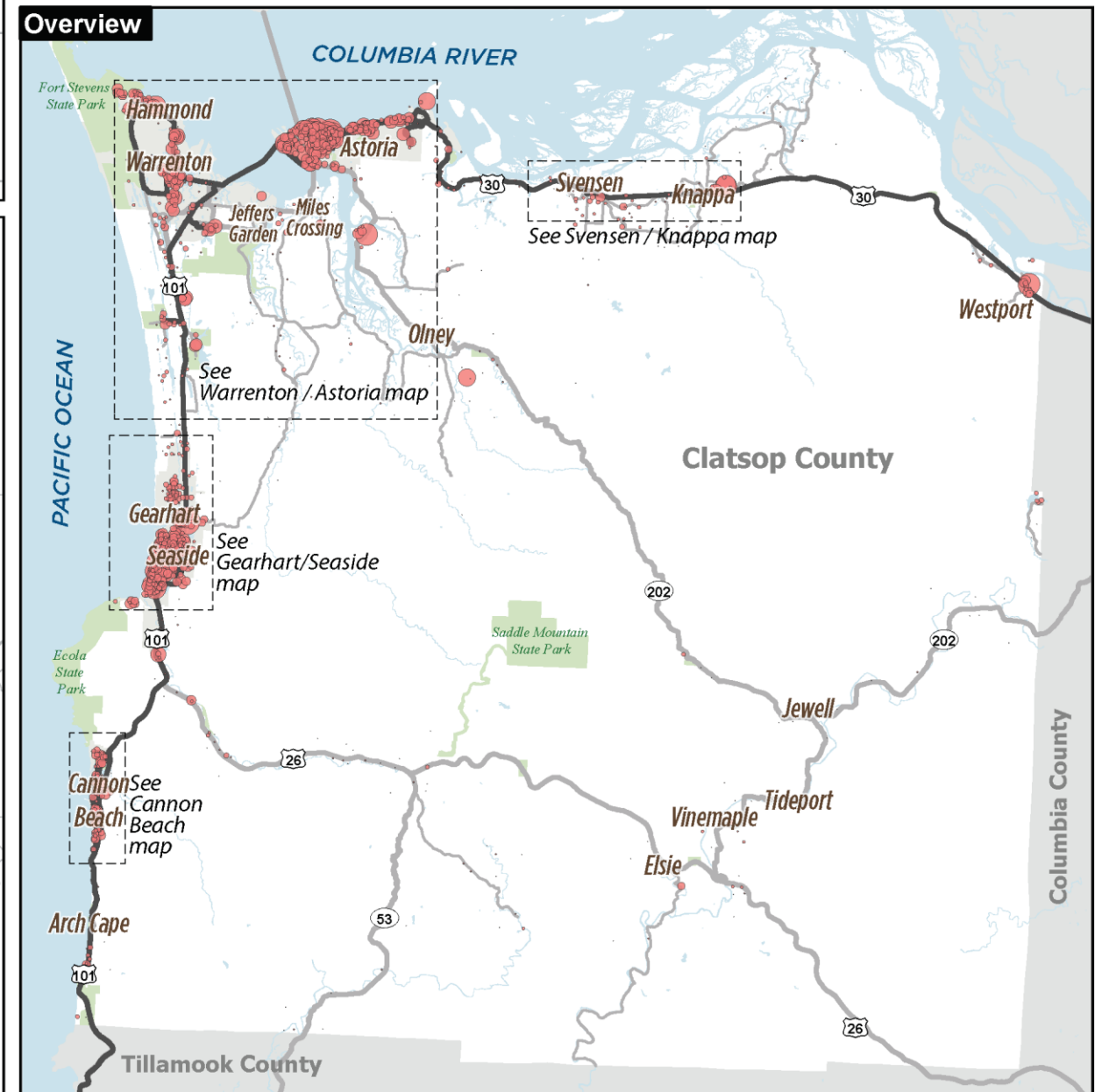
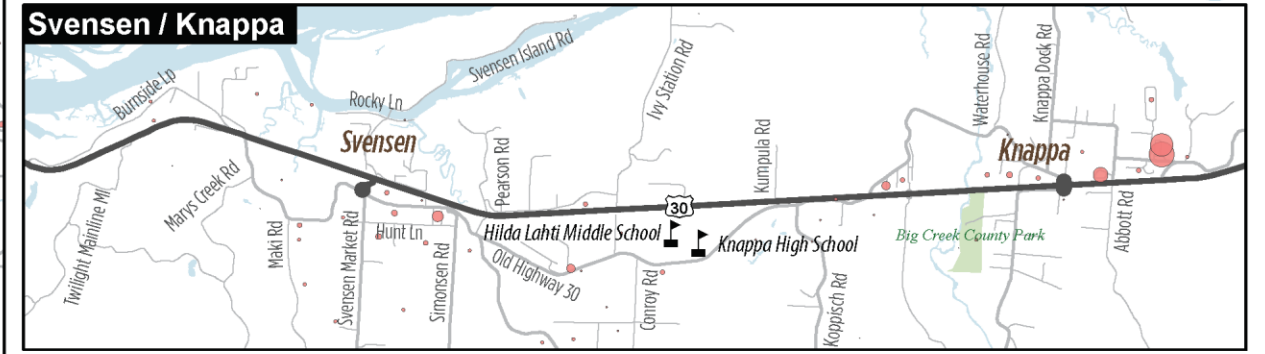
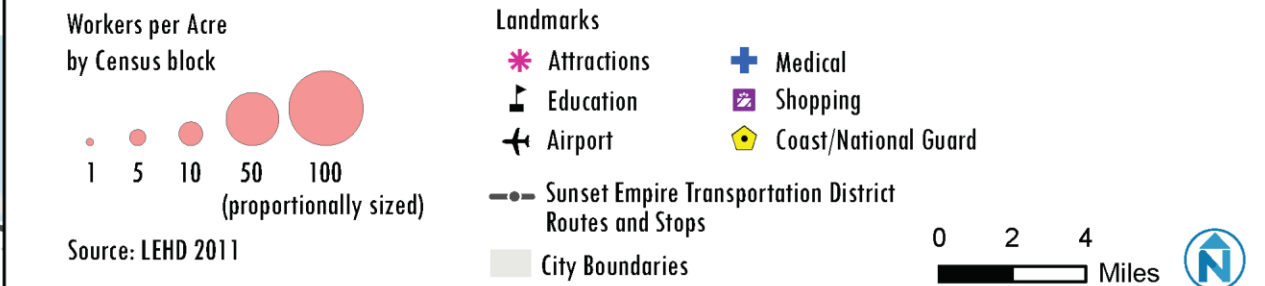


Source: U.S. Census Bureau, Longitudinal Household-Employer Dynamics (LEHD), 2011

Figure 2-8 Home Locations of Clatsop County Workers



**Where Workers who Work in Clatsop County Live (2011)**



Source: U.S. Census Bureau, Longitudinal Household-Employer Dynamics (LEHD), 2011

## COMMUNITY DESTINATIONS

Major destinations in Clatsop County attract all users for daily or occasional needs. These include educational institutions (e.g., Clatsop Community College, Tongue Point Job Corps, MERTS), recreational parks and historic landmarks, medical services, jobs, shopping, and housing.<sup>2</sup>

### Community Survey

An initial survey of the overall community was conducted to understand travel patterns. A total of 144 responses were collected during this first survey effort. Respondents were asked to list their top three destinations and current mode of access to these places (Figure 2-9). While most of the destinations in Astoria lie along the fixed-route network, several destinations in the interior of the city are not currently covered by transit. In Seaside, destinations south of 1<sup>st</sup> Avenue and west of U.S. 101 are not served by transit. In Warrenton, stretches of the Fort Stevens Highway south of the Mini Mart to Warrenton High School are currently not served.

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<sup>2</sup> Data sources include ESRI, Clatsop County, an inventory compiled for the Clatsop County TSP, and additional activity centers compiled by the project team from websites and other sources.



## TRANSIT RIDER FLOWS

SETD staff conducted a survey of current riders aboard buses in May and July 2015 to capture a typical weekday and weekend schedule during both the year-round and summer tourist season. In addition, SETD staff tracked boardings and alightings by stop and tracked on-time performance.

### Trip Origins and Destinations

Passengers were asked where they started and will end their trip. Figure 2-10 illustrates travel patterns between and within communities. Trips starting and ending in Astoria comprised the highest share of trips. Aside from trips between Warrenton and Astoria, few respondents from outside Astoria named Astoria as their final destination; however, numerous regional trips started in Astoria. Trips within Seaside and Cannon Beach—as well as trips between Seaside and Cannon Beach—also comprised a high share of trips. Some respondents reported traveling as far as Kelso, Ilwaco, and Tillamook.

A handful of people used SETD to travel just within Cannon Beach, where most destinations are clustered along Hemlock Street west of U.S. 101. The town's 3-mile length makes Cannon Beach well-suited for use of transit in-town, since destinations may be too far to walk between. Cannon Beach also has a high percentage of older adults.

Figure 2-11 shows origin and destination locations in more detail for the May survey. In most cases, passengers are starting or ending their trips fairly close to the bus routes. The exception is in Gearhart and Seaside, where some respondents reported going to destinations well off of U.S. 101.

Taken together, these travel pattern data reveal common destinations shared by all users (Safeway Astoria, Fred Meyer, Downtown Astoria, Downtown Seaside, Clatsop Community College, Costco, and Downtown Cannon Beach) as well as destinations unique to transit riders (Emerald Heights, Tongue Point, Astoria Transit Center, Peter Pan, Downtown Warrenton, Hammond, Sunset Beach, Short Stop).

Figure 2-10 Transit Rider Origin and Destination Pairs by Community (May 2015)

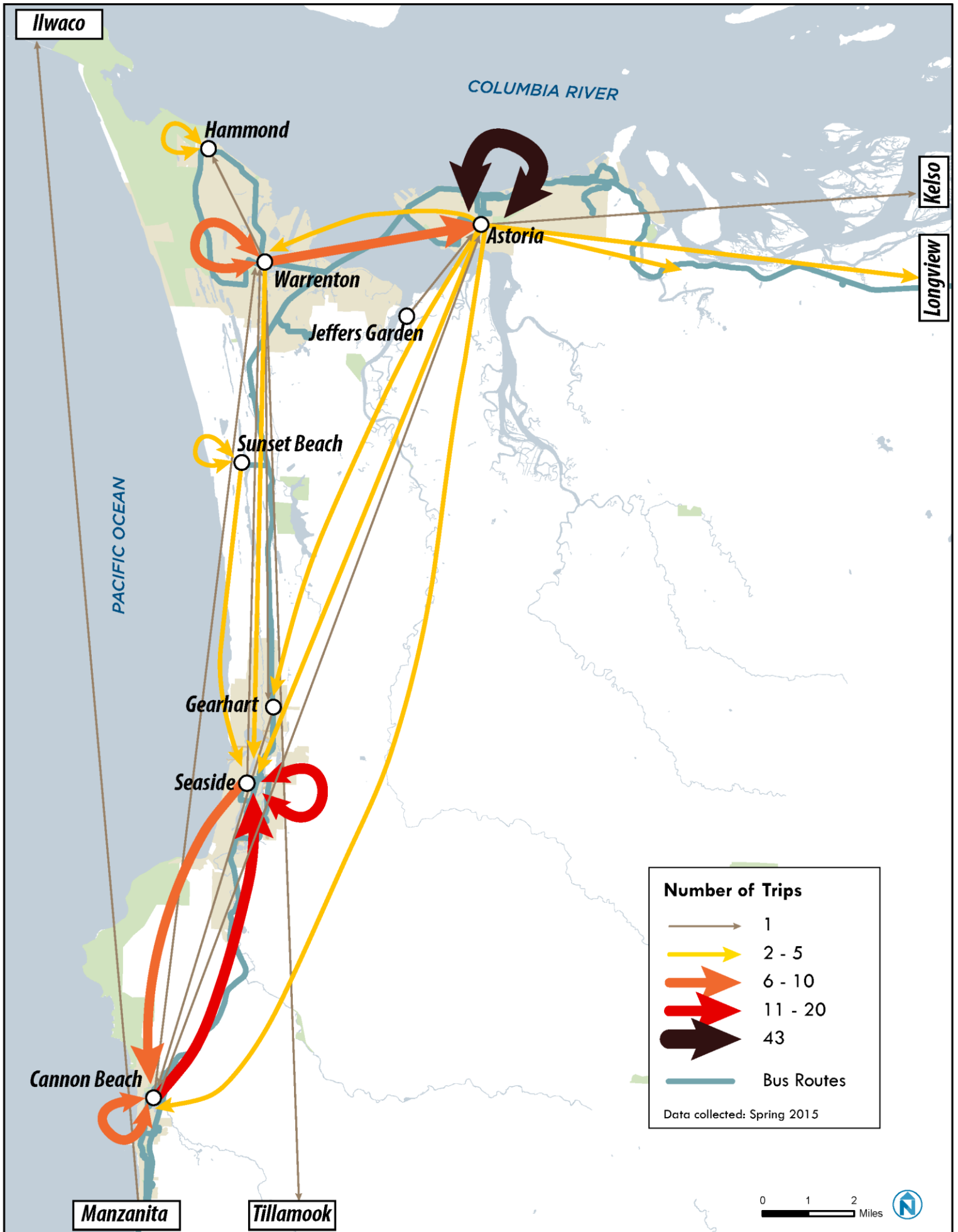
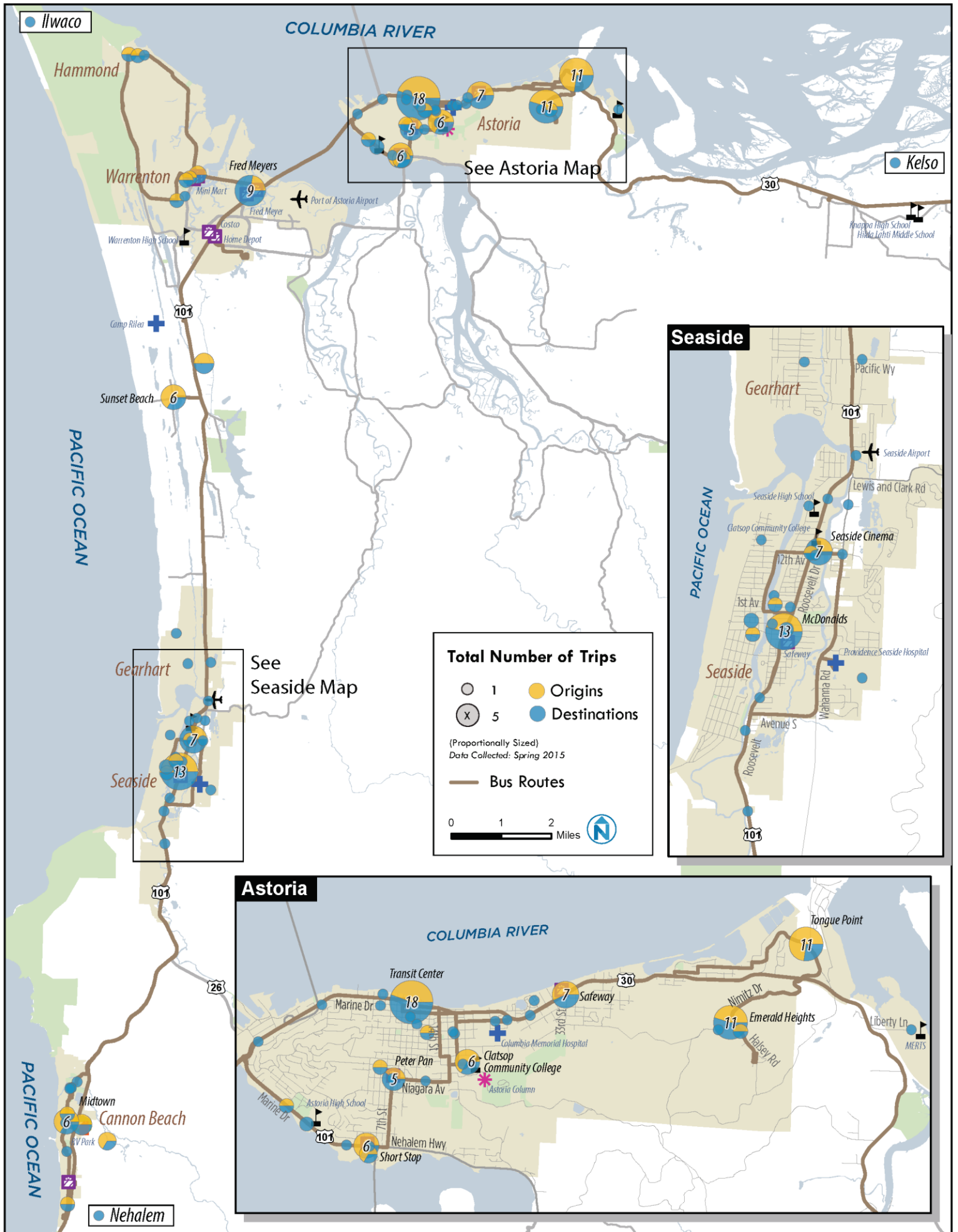


Figure 2-11 Transit Rider Origins and Destinations (May 2015)



## LAND USE

The best transportation plan is a land use plan. Transit cannot succeed without a concentration of residents, jobs and/or customers, and how population moves itself is based entirely on land use. The location of homes, jobs, grocery stores, shopping malls, and other destinations determines how easily a person can access places, the length of the trip, and the directness of the route. Greenfield development, destinations far from main roads, and low-density zoning all inhibit transit’s success. The zoning code, comprehensive plan language, and development review process ultimately have the power to link land use and transportation. See Volume II Section E for more details on land use codes and policies.

**Figure 2-12 Density and Level of Transit Service Supported**



## Zoning

Clatsop County’s Comprehensive Plan guides land use and development in coordination with the community plans of each urban area. Each city’s Comprehensive Plan and associated zoning code create zoning text and maps that identify land uses and an Urban Growth Boundary (UGB). The UGB demarcates land appropriate for annexation and urban development based upon a 20-year population projection.

Local development codes describe the characteristics of the zoning categories throughout Clatsop County. Broad categories include several types of residential zones, non-residential zones such as commercial or industrial, and mixed-use zones allowing both residential and non-residential uses to be combined on a site. As a county with several parks and oceanic resources, zoning for aquatic conservation and wetlands is also common. In general, the largest communities of Clatsop County include some high-density residential, commercial areas, retail districts, and low-density housing.

Figure 2-13 shows residential densities allowed in the zoning codes. Astoria’s density metrics all meet or exceed thresholds for 60-minute service, as do most of the moderate or higher density metrics in other jurisdictions (the exception is the intermediate-density zone in Warrenton).

Figure 2-13 Residential Land Use Types by City (Clatsop County)

City	Residential Land Use Type	Density
<b>Astoria</b> <sup>3</sup>	R1 – Low Density Residential Zone	8 units / acre
	R2 – Medium Density Residential Zone	16 units/acre
	R3 – High Density Residential Zone	26 units/acre
	CR – Compact Residential Zone	24 units/acre
<b>Warrenton</b> <sup>4</sup>	R-40: Low Density Residential	>10,000 sq ft/lot [approx 4 units/acre]; >40,000 sq ft/lot (with on-site sewage)
	R-10: Intermediate Density Residential	>10,000 sq ft/lot [approx 4 units/acre]
	R-M: Medium Density Residential	>7,000 sq ft/single-family detached; [approx. 6 units/acre] >2,500 sq ft/single-family attached [approx. 17 units/acre]
	R-H: High Density Residential	5 units/acre
<b>Seaside</b> <sup>5</sup>	R-1: Residential Low Density	5 units/acre
	R-2: Residential Medium Density	10 units/acre
	R-3: Residential High Density	20 units/acre
<b>Cannon Beach</b> <sup>6</sup>	RVL: Residential Very Low Density Zone	1 unit/acre
	RL: Residential Lower Density Zone	4 units/acre
	R1: Residential Moderate Density Zone	8 units/acre
	R2: Residential Medium Density Zone	11 units/acre
	R3: Residential High Density Zone	15 units/acre

## Transit-Supportive Code

Linking land use and transportation requires folding transit considerations into business as usual – development review, zoning update, and comprehensive plan policies.

## Zoning

A scan of zoning codes reveals little support for transit in current land use policies. No mention of transit is included in Seaside or Cannon Beach codes. Astoria code includes transit integration in Article 7, related to parking:<sup>7</sup>

- In lieu of providing on-street parking, a development could pay the city (\$180 per year) that the city could put toward transit

<sup>3</sup> City of Astoria Development Code, Article 2, Use Zones.

<sup>4</sup> City of Warrenton Development Code, Title 16.

<sup>5</sup> Code of Ordinances of the City of Seaside, Chapter 158, Zoning Ordinance. Updated September 2004.

<sup>6</sup> Zoning Ordinance of the City of Cannon Beach. As amended through January 2011.

<sup>7</sup> City of Astoria Development Code / Zoning Ordinances.

- Off-street parking reductions if adjacent to bus stop served by 15-min or better service

Additional code language presents opportunities to fully integrate all modes into land use decisions. Strategies such as shared parking (to allow for park and ride), bike parking, street-fronting design, mixed-uses, and others can be explored.

### **Comprehensive Plan Policies**

An assessment of comprehensive plan policies was conducted to determine how well planning documents meet the following three best practices for transit-supportive policies:

- Reflect the objectives and recommendations from the SETD Transportation Plan;
- Provide consistency with State transportation planning rules related to transit; and
- Generally support and promote transit in communities within the SETD service area.

The assessment includes the primary jurisdictions in the SETD service area, including Clatsop County, Astoria, Warrenton, and Seaside. Guidance for recommended policy language is also applicable to smaller communities throughout the county. Gearhart, for example, has just begun an update to its Transportation System Plan (TSP), and incorporate recommended policies into that process. Existing policies were compared against 11 recommended policies drawn from the Oregon Transportation Planning Rule (TPR) and other local TSPs. The number of goals and objectives addressing each recommended policy was noted to understand policy consistency across jurisdictions (Figure 2-14).

Overall, some degree of consistency exists between jurisdictions' existing policies and the policies recommended in Figure 2-14; however, in most cases policy language offers general rather than direct guidance supporting transit.

In the larger jurisdictions (Clatsop County, Astoria, Warrenton), policies are more comprehensive than smaller jurisdictions. Even so, existing policies do not provide the level of specificity and direction that the recommended policies provide. Clatsop County and Astoria completed updates of their TSPs in 2015 and 2013, respectively, Warrenton is in the process of updating its TSP, and Gearhart has just begun the process.

Seaside and Cannon Beach have less extensive transit-related policies. Seaside policies are broad and general regarding multimodal transportation and transit, while Cannon Beach policies are minimal overall. Seaside's TSP was updated in 2010, and may possibly undergo an update in the next five years. Cannon Beach has been seeking funding for a TSP update.

Sunset Empire Transportation District

Figure 2-14 Assessment of Policy Consistency

Recommended Policy	Clatsop County <sup>8</sup>	Astoria <sup>9</sup>	Warrenton <sup>10</sup>	Seaside <sup>11</sup>	Cannon Beach <sup>12</sup>
1. The [City/County] will facilitate provision of transit service to its community members, with special attention to members who may be classified as “transit dependent” due to factors such as age, income, or disabilities.	Goal 4 Policy 4b Policy 9d	Goal 1, Objective 2 Goal 2 Goal 2, Objective 5 Goal 5 Goal 5, Objective 1	Goal 1 Goal 1, Objective 5 Goal 4 Goal 4, Objective 2 Goal 6 Goal 6, Objectives 1, 2, and 3	Goal 2 Goal 3 Goal 3, Policy 2	Policy 9
2. The Sunset Empire Transportation District Long Range Comprehensive Transportation Plan provides the policy and implementation direction for [City/County] transit planning, which includes route development, financing, and physical improvements necessary to maintain and improve public transit service for [City/County] residents, businesses, and visitors.	Goal 4 Policy 4b Goal 9 Policy 9d	Goal 7 Goal 7, Objective 2	Goal 1 Goal 4 Goal 4, Objective 2 Goal 6 Goal 6, Objective 3	Goal 2 Goal 3 Goal 3, Policy 2 Goal 4, Policy 3	Policy 10
3. The [City/County] will work with Sunset Empire Transportation District to appropriately site new transit stops and park-and-ride lots within the [city/county] in support of the district-wide public transit system, with an emphasis on sites that are safe and convenient for riders. Transit improvements within the [city/county] shall be guided by the findings and recommendations of the Sunset Empire Transportation District Long Range Comprehensive Transportation Plan.	Goal 4 Policies 4a and 4b Goal 9 Policy 9d	Goal 2 Goal 5 Goal 5, Objective 4 Goal 7 Goal 7, Objectives 1 and 2	Goal 3, Objective 2 Goal 4 Goal 4, Objectives 1 and 2 Goal 5, Objective 11 Goal 11	Goal 1 Goal 3 Goal 3, Policy 2 Goal 4, Policy 3	Policy 10
4. The [City/County] will work to Improve safety for transit riders through measures such as providing enhanced		Goal 1	Goal 4	Goal 1	Policy 2

<sup>8</sup> Goals and policies from the Clatsop County Comprehensive Plan, Goals and Policies (Last Amended 2015) currently govern and were referred to.

<sup>9</sup> Goals and objectives from the 2013 Astoria Transportation System Plan, Volume 2, Section D: Memo 3 – Goals, Objectives, and Evaluation Criteria currently govern and were referred to.

<sup>10</sup> Goals and policies from the 2004 City of Warrenton Transportation System Plan currently govern and were referred to. Transportation policies from the City of Warrenton Comprehensive Plan (Last Amended 2011) also govern, but were not found to be relevant to this assessment.

<sup>11</sup> Goals and policies from the 2010 City of Seaside Transportation System Plan currently govern and were referred to. Transportation policies from the City of Seaside Comprehensive Plan (Adopted 1983, Last Amended 1996) also govern, but were not found to be relevant to this assessment.

<sup>12</sup> Policies from the City of Cannon Beach Comprehensive Plan (Last Amended 2012) currently govern and were referred to.

Sunset Empire Transportation District

Recommended Policy	Clatsop County <sup>8</sup>	Astoria <sup>9</sup>	Warrenton <sup>10</sup>	Seaside <sup>11</sup>	Cannon Beach <sup>12</sup>
<i>roadway crossings, restricting transit stops from being sited where there are existing driveways, and restricting driveways from being located near an existing or planned transit stop.</i>		Goal 1, Objective 2	Goal 4, Objective 2 Goal 11 Goal 11, Objectives 2 and 3	Goal 1, Policy 2	Policy 10
<i>5. The [City/County] will participate in Sunset Empire Transportation District's efforts to promote and implement rideshare (e.g., carpool/vanpool) programs for reducing commuter vehicular travel demand on US 101. The [City/County] will establish development requirements that provide preferential parking for ridesharing and allow parking areas to be used for park-and-ride/rideshare facilities.</i>	Goal 4 Policy 4a Goal 9 Policy 9d	Goal 2 Goal 5 Goal 5, Objectives 1 and 4 Goal 7 Goal 7, Objectives 1, 2, and 3	Goal 4 Goal 4, Objective 1 Goal 8, Objective 1	Goal 3 Goal 3, Policies 1 and 2 Goal 4	Policy 10
<i>6. The [City/County] will support increased opportunities for local and regional public transit routes and facilities.</i>	Goal 4 Policies 4b and 4c Goal 5 Policy 9d	Goal 2 Goal 5 Goal 5, Objectives 1 and 4 Goal 7 Goal 7, Objectives 1, 2, and 3	Goal 1, Objective 5 Goal 4 Goal 4, Objectives 2, 3, and 4 Goal 6, Objective 1 Goal 8, Objective 1	Goal 3 Goal 3, Policies 1 and 2 Goal 4 Goal 4, Policy 3	Policy 1 Policy 10
<i>7. The [City/County] will invite transit service providers to participate in the review of land use applications that may have implications for transit service.</i>	Goal 9 Policy 9d	Goal 7 Goal 7, Objectives 1 and 2	Goal 8, Objective 1	Goal 3, Policy 2	None
<i>8. The [City/County] will provide or will require development to provide improvements such as pedestrian and bicycle connections, shelters, and/or lighting to complement transit service and encourage higher levels of transit use. Transit stop improvements shall be coordinated with the transit service provider.</i>	Policy 3e Goal 4 Policy 4c Goal 5 Policy 5a	Goal 2 Goal 3, Objective 7 Goal 5, Objective 4 Goal 7 Goal 7, Objective 2	Goal 7, Objective 2 Goal 8, Objective 1 Goal 11, Objectives 2 and 3	Goal 3 Goal 3, Policy 2 Goal 4 Goal 4, Policies 2 and 3	Policy 10
<i>9. The [City/County] will target improvements to the [City's/County's] pedestrian environment, including lighting, landscaping, public art, marked and protected crossings, and curb ramps, to improve conditions for and encourage walking and to promote transit.</i>	Goal 3 Policies 3a and 3c Goal 4 Policy 4c	Goal 2 Goal 3, Objectives 6 and 7 Goal 4, Objectives 4 and 5	Goal 5, Objective 11 Goal 8, Objective 1 Goal 11, Objectives 2 and 3	Goal 3 Goal 3, Policy 2 Goal 4 Goal 4, Policies 2 and 3	Policy 10

Sunset Empire Transportation District

Recommended Policy	Clatsop County <sup>8</sup>	Astoria <sup>9</sup>	Warrenton <sup>10</sup>	Seaside <sup>11</sup>	Cannon Beach <sup>12</sup>
<p><i>10. The [City/County] will support higher-density and mixed land use around transit stops to make transit service more feasible and effective.</i></p>	<p>Policy 7d</p>	<p>Goal 3, Objective 5 Goal 5, Objectives 1 and 4</p>	<p>Goal 1, Objective 7 Goal 7, Objective 2 Goal 8, Objective 2</p>	<p>Goal 3, Policy 2</p>	<p>Policy 10</p>
<p><i>11. In lower-density areas, the [City/County] will support park-and-ride/rideshare facilities, demand-responsive transit services, and other facilities and services that are appropriate where it is less feasible to serve the area with fixed-route transit.</i></p>	<p>Policy 4a</p>	<p>Goal 3, Objective 5 Goal 5, Objectives 1 and 4</p>	<p>Goal 7, Objective 2 Goal 8, Objective 2</p>	<p>Goal 3, Policy 2</p>	<p>Policy 10</p>

## Development Code

Development code requirements can support transit-related improvements in several areas such as:

- Coordination with transit agencies. The transit agency needs to be “at the table” during all stages of the development review process.
- Access to transit & Transit-supportive facilities. Every bus passenger is a pedestrian or a bicyclist at some point during the trip. Access to bus stops supports transit but also makes walking and bicycling safer and more comfortable for all Clatsop County residents.
- Multimodal elements (vehicle parking, bicycle parking, urban form). Every community strives to find the balance between providing space for access (e.g. parking, staying) and space for mobility (movement). Access elements must also be balanced between modes. A comprehensive approach to transit must include consideration of how other modes of transportation access a development site.

An assessment of each jurisdiction’s development code language in terms of consistency with recommended language (yes – addressed; partial – somewhat addressed; no – not addressed) highlights opportunities to achieve TPR transit-related benchmarks. Recommended language was pulled from the State of Oregon Transportation and Growth Management Model Development Code for Small Cities, 3<sup>rd</sup> Edition, and language from peers. The assessment is organized by the four topic areas listed above. Specific code language adaptable to each jurisdiction is provided in Volume II, Section F and G.

**Figure 2-15 Assessment of Development Code Consistency**

	Recommended Code	Clatsop County <sup>13</sup>	Astoria <sup>14</sup>	Warrenton <sup>15</sup>	Seaside <sup>16</sup>	Cannon Beach <sup>17</sup>
Coordination with Transit Agencies						
1.	Pre-application conference – Include SETD at development pre-application conference.	Partial	Yes	No	No	No
2.	Application review – Specifically call out transit agency among list of agencies notified about application review.	Partial	Partial	Partial	No	No
3.	Hearing notice – Send hearing notices regarding development applications to SETD.	No	Yes	Partial	No	No
Access to Transit and Supportive Facilities						

<sup>13</sup> Clatsop County Land and Water Development and Use Ordinance and Clatsop County Standards Document:  
[http://www.co.clatsop.or.us/sites/default/files/fileattachments/land\\_use\\_planning/page/612/zoning\\_Ordinance\\_80-14\\_codified\\_11-14-15.pdf](http://www.co.clatsop.or.us/sites/default/files/fileattachments/land_use_planning/page/612/zoning_Ordinance_80-14_codified_11-14-15.pdf)  
[http://www.co.clatsop.or.us/sites/default/files/fileattachments/land\\_use\\_planning/page/612/standards\\_document\\_codified\\_11-14-15.pdf](http://www.co.clatsop.or.us/sites/default/files/fileattachments/land_use_planning/page/612/standards_document_codified_11-14-15.pdf)

<sup>14</sup> City of Astoria Development Code:  
<http://www.astoria.or.us/default.asp?pageid=115&deptid=1>

<sup>15</sup> City of Warrenton Municipal Code, Title 16 (Development Code)  
<http://qcode.us/codes/warrenton/>

<sup>16</sup> City of Seaside Zoning Ordinance and City of Seaside Subdivision and Land Partitioning Ordinance  
[http://www.cityofseaside.us/sites/default/files/docs/ZONINGORDINANCE%20MASTER2004\\_0.pdf](http://www.cityofseaside.us/sites/default/files/docs/ZONINGORDINANCE%20MASTER2004_0.pdf)  
<http://www.cityofseaside.us/sites/default/files/docs/Land%20Division%20Ord.%2074-36.pdf>

<sup>17</sup> City of Cannon Beach Municipal Code, Title 16 (Subdivisions) and Title 17 (Zoning)  
<http://www.qcode.us/codes/cannonbeach/>

**Sunset Empire Transportation District**

	<b>Recommended Code</b>	<b>Clatsop County<sup>13</sup></b>	<b>Astoria<sup>14</sup></b>	<b>Warrenton<sup>15</sup></b>	<b>Seaside<sup>16</sup></b>	<b>Cannon Beach<sup>17</sup></b>
<i>Site Access</i>						
4.	Access between the site and the street – Connect developments to the street with sidewalks.	Yes	Yes	Yes	Partial	No
5.	Access to transit stop and supportive facilities – Provide direct access from development to transit. This speaks to building entrance orientation, for example (beyond the sidewalk itself).	Partial	Partial	Partial	No	No
<i>Area Access</i>						
6.	Access to transit stops from beyond the site – This addresses the larger access network including connectivity from beyond the development site.	Yes	Yes	Yes	Partial	No
<i>Multimodal Elements</i>						
<i>Vehicle Parking</i>						
7.	Transit facilities in parking areas - Allow bus stops and park-and-ride in the SETD service area.	Partial	No	No	No	No
8.	Preferential parking for employee ridesharing – Dedicate carpool or vanpool parking spaces.	Yes	Partial	No	No	No
9.	Maximum parking requirements – Establish parking maximums.	No	Partial	No	No	No
10.	Reduced parking requirements – Reduce parking requirements when development is near transit.	Yes	Yes	No	No	No
11.	Parking area landscaping – Shield parking lots and integrate landscaping and walking provisions.	Partial	Yes	Yes	No	Partial
<i>Bicycle Parking</i>						
12.	Minimum requirements – Require bicycle parking.	Yes	Yes	Partial	No	No
<i>Urban Form</i>						
13.	Maximum building setbacks – Establish maximums to enhance walkability.	No	Partial	Partial	Partial	Partial
14.	Pedestrian amenities in front yard setbacks – Allow development to build pedestrian amenities in front yard setback.	No	Partial	Partial	No	No
15.	Parking between the building and the street – Parking lots degrade the walking environment; require placement away from the street (e.g. behind the development).	Partial	Yes	No	No	Partial
16.	Maximum block length – Short blocks foster walkability and visual interest; establish maximums.	Partial	Yes	Partial	Partial	No

## Proposed Development

The major development coming to the region is a Walmart in the North Coast Business Park at US 101 and Ensign Lane (see Figure 2-16).

In general, Walmart stores are major transit attractors. The area already contains several trip generators, including Costco, Goodwill, and Home Depot. Farther east along on Ensign Lane, the Northwest Senior and Disability Services office, Food Bank, and probation office (which will be relocated in 2016) also make this area of Warrenton a major draw.

Lastly, a multi-family development in Miles Crossing has been proposed and will be built contingent upon zoning changes.

Figure 2-16 North Coast Business Park Site Plan



## 3 TRANSPORTATION NETWORK

The network of transportation services available to Clatsop County includes public transportation, as well as the roadway network for walking, bicycling, and driving. Transportation infrastructure guides where and when public transportation can operate.

### SETD TRANSIT SERVICE

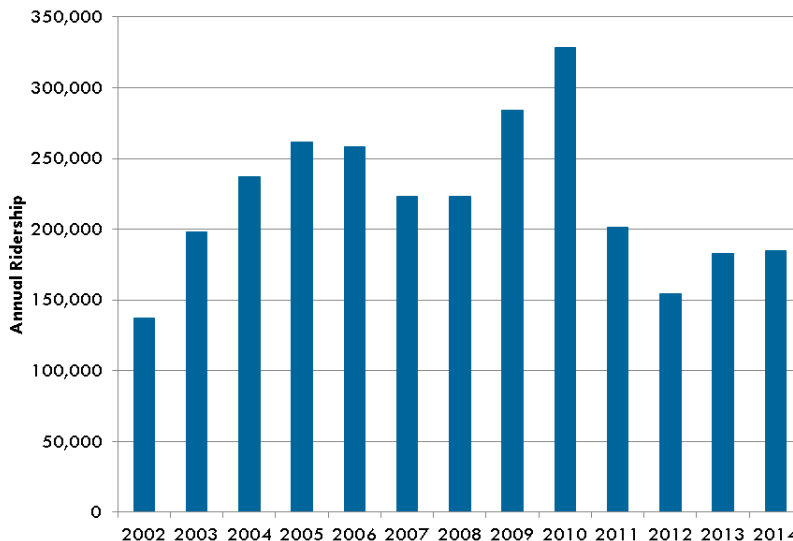
SETD provides public transportation throughout Clatsop County with a combination of fixed-route, ADA Paratransit, and demand-response services. SETD also houses a three-county Medicaid brokerage called RideCare and promotes multimodal transportation options such as carpooling. For detailed information about SETD services, see Volume II, Section B.

#### Fixed-Route

SETD’s fixed bus routes operate on a set schedule and alignment. Transit corridors encompass the Astoria to Warrenton/Hammond Area, U.S. 30 east to Rainier, and U.S. 101 south to Cannon Beach. SETD operates five weekday and four weekend routes year-round. During the summer, community transportation needs change drastically, with an influx of tourists along the U.S. 101 corridor and cruise ships that dock in Astoria. SETD adds seasonal routes serving this seasonal market. Figure 3-2 summarizes all the fixed-route services.

SETD overall fixed-route ridership (Figure 3-1) fluctuated during the past 12 years due to financial challenges. Ridership climbed to 330,000 per year in 2010, but after the agency’s financial crisis SETD cut service back and ridership dropped. Since then, ridership has climbed back to 180,000 trips per year.

Figure 3-1 Total Annual Fixed-Route Ridership, 2002-2014



Source: Sunset Empire Transportation District

**Sunset Empire Transportation District**

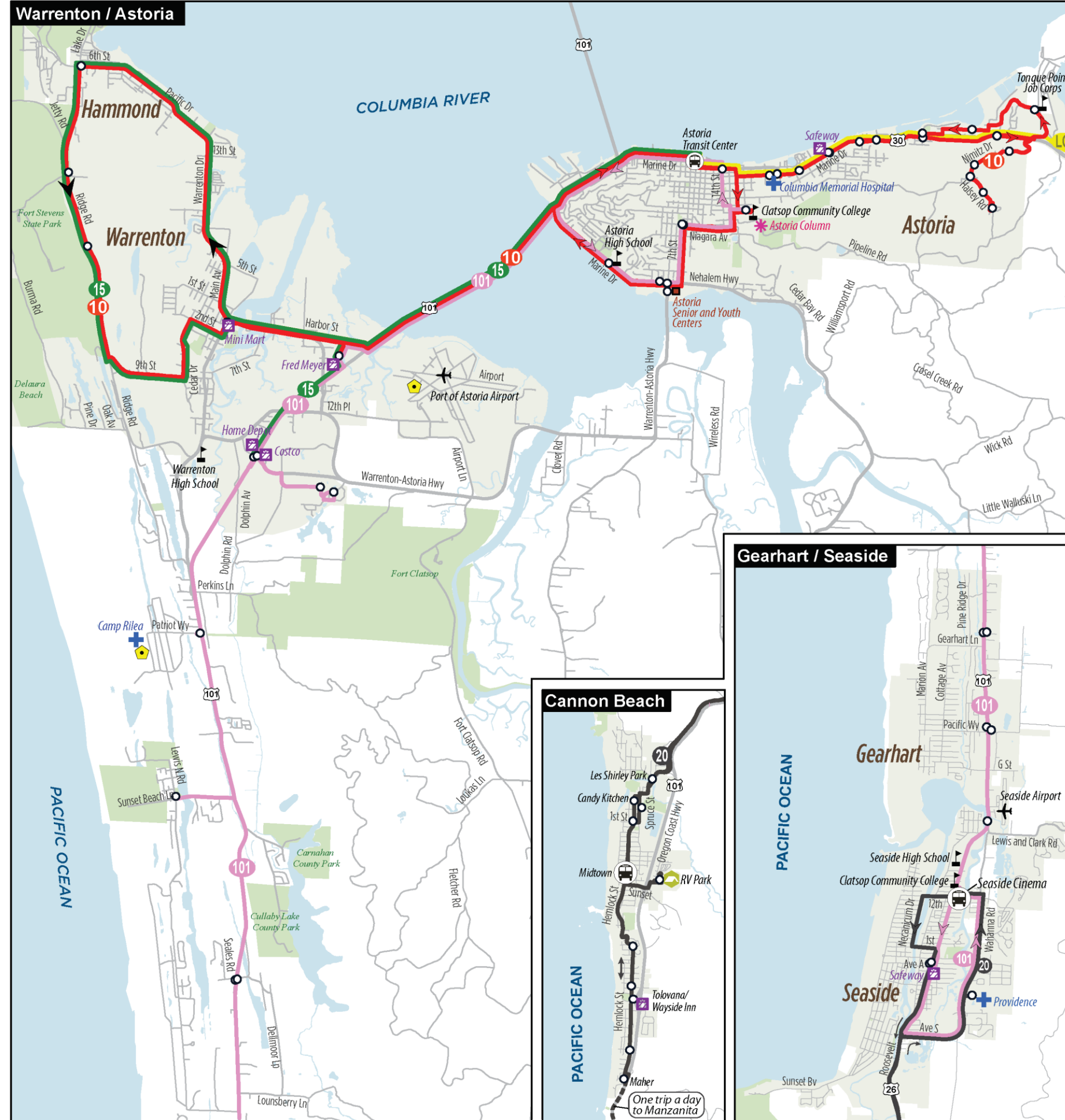
**Figure 3-2 Fixed Route Service Overview**

Route Number or Name	Days of Operation	Span of Service	Frequency or Number of Daily Trips	Fare (One-Way)	Communities Served
<b>Year-round Service</b>					
10	Monday-Friday	5:45 a.m. – 9:12 p.m.	60 minutes	\$1	Astoria, Hammond, Warrenton
15	Monday-Sunday	6:00 a.m. – 6:00 p.m.	6 times per day	\$1	Warrenton, Hammond, Astoria
20	Monday-Friday	6:00 a.m. – 8:55 p.m.	60 minutes	\$1	Seaside, Cannon Beach, Manzanita [1]
21	Saturday-Sunday	9:00 a.m. – 12:30 p.m.; 3:00 p.m. – 6:20 p.m.	30-60 minutes	\$1	Cannon Beach, Seaside
101	Monday-Friday	6:00 a.m. – 9:50 p.m.	60 minutes (except 10 am-12 pm; 12-2 pm; 6-8 pm)	\$1-\$3 depending on distance	Astoria, Warrenton, Gearhart, Seaside, Cannon Beach
Lower Columbia Connector	Monday-Sunday	6:45 a.m. – 5:40 p.m.	2 trips	\$1-\$8 depending on distance	Astoria, Svensen, Knappa, Westport, Clatskanie, Rainier (Transfer to CC Rider)
Pacific Connector	Saturday-Sunday	8:30 a.m. – 5:30 p.m.	3 trips	\$1-\$4 depending on distance	Astoria, Warrenton, Gearhart, Seaside, Cannon Beach, Manzanita [1]
<b>Seasonal Service (<i>summer only</i>)</b>					
11	Select dates	Based on cruise ship schedules		Free	Astoria
21	Monday-Friday	11:00 a.m. – 6:00 p.m.	30 minutes	\$1	Cannon Beach, Seaside
12	Select dates	Based on cruise ship schedules		Free	Astoria, Warrenton; Serves cruise ships but open to general public
Seaside Streetcar Trolley	Saturday-Sunday	11:00 a.m. – 8:00 p.m.	60 minutes	\$1	Seaside

Notes: [1] One trip per day on Route 20 serves Manzanita. Two trips per day are possible with a transfer to Tillamook County Transportation District (TCTD) service

Figure 3-3, Figure 3-4, Figure 3-5, and Figure 3-6 display maps of SETD’s weekday, weekend, seasonal weekday, and seasonal weekend routes.

Figure 3-3 Weekday Year-Round System Map



**Transit Service (Weekday)**

- |  |                      |
|--|----------------------|
| <b>Sunset Empire Transportation District</b> | <b>Landmarks</b>     |
| Route 10                                     | Attractions          |
| Route 15                                     | Education            |
| Lower Columbia Connector                     | Airport              |
| Route 20                                     | City Boundaries      |
| Route 101                                    | Medical              |
| Bus Stops                                    | Shopping             |
| Transfer Locations                           | Coast/National Guard |

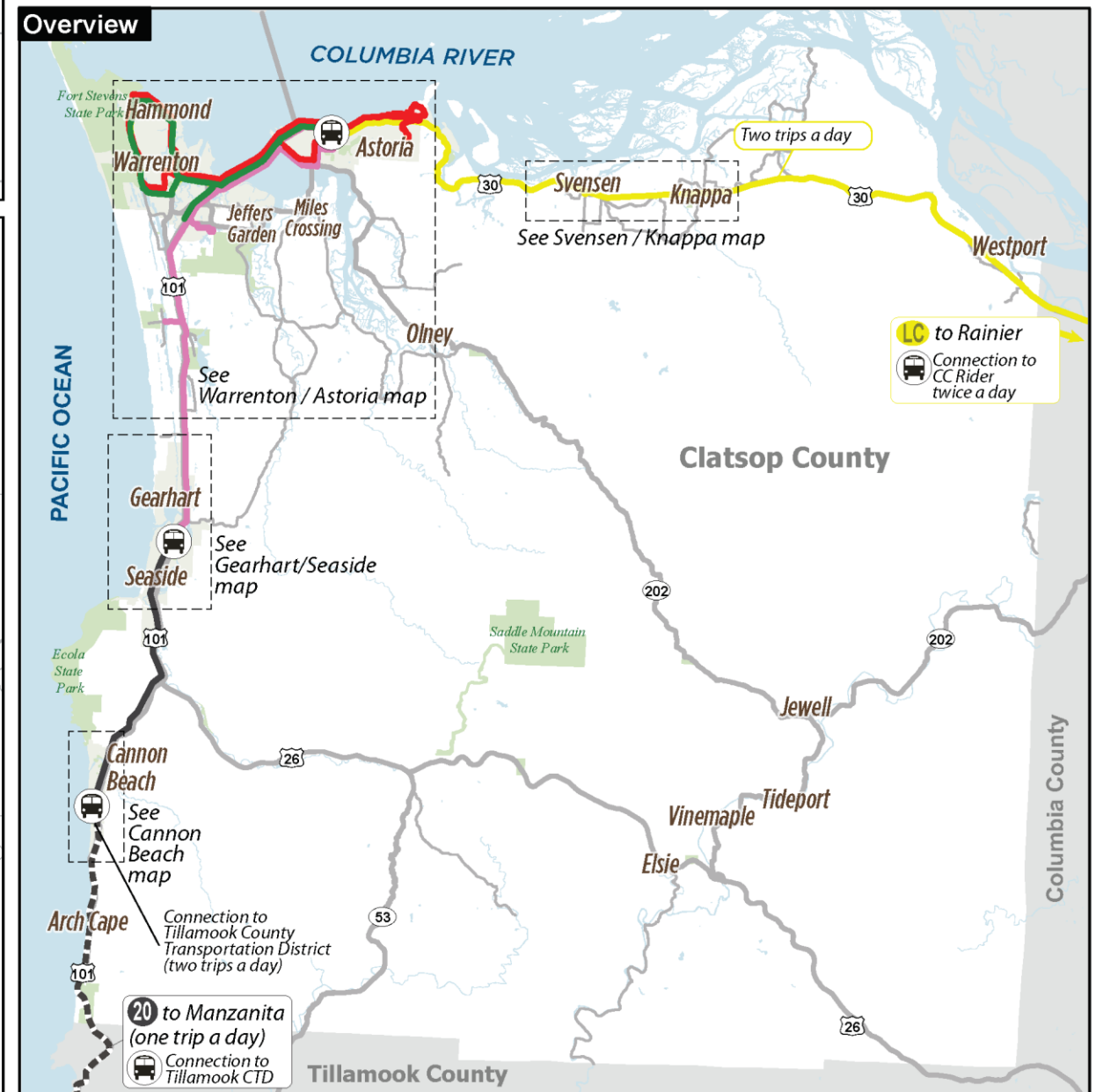
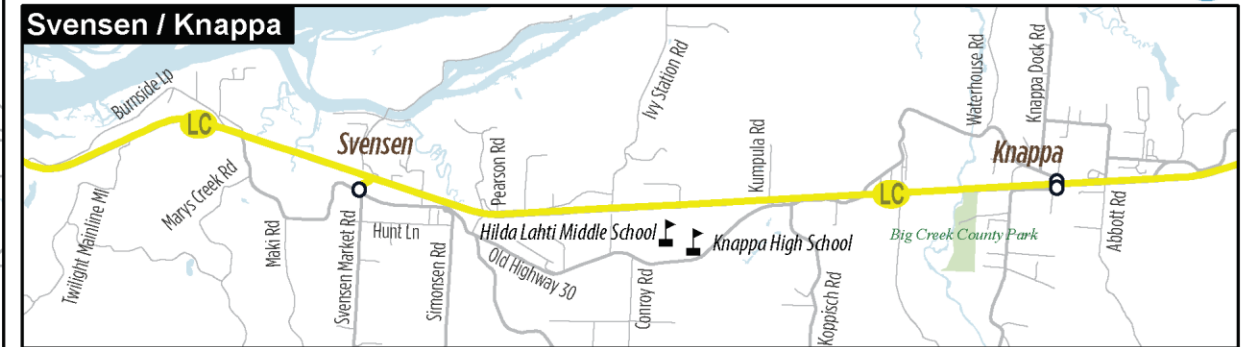
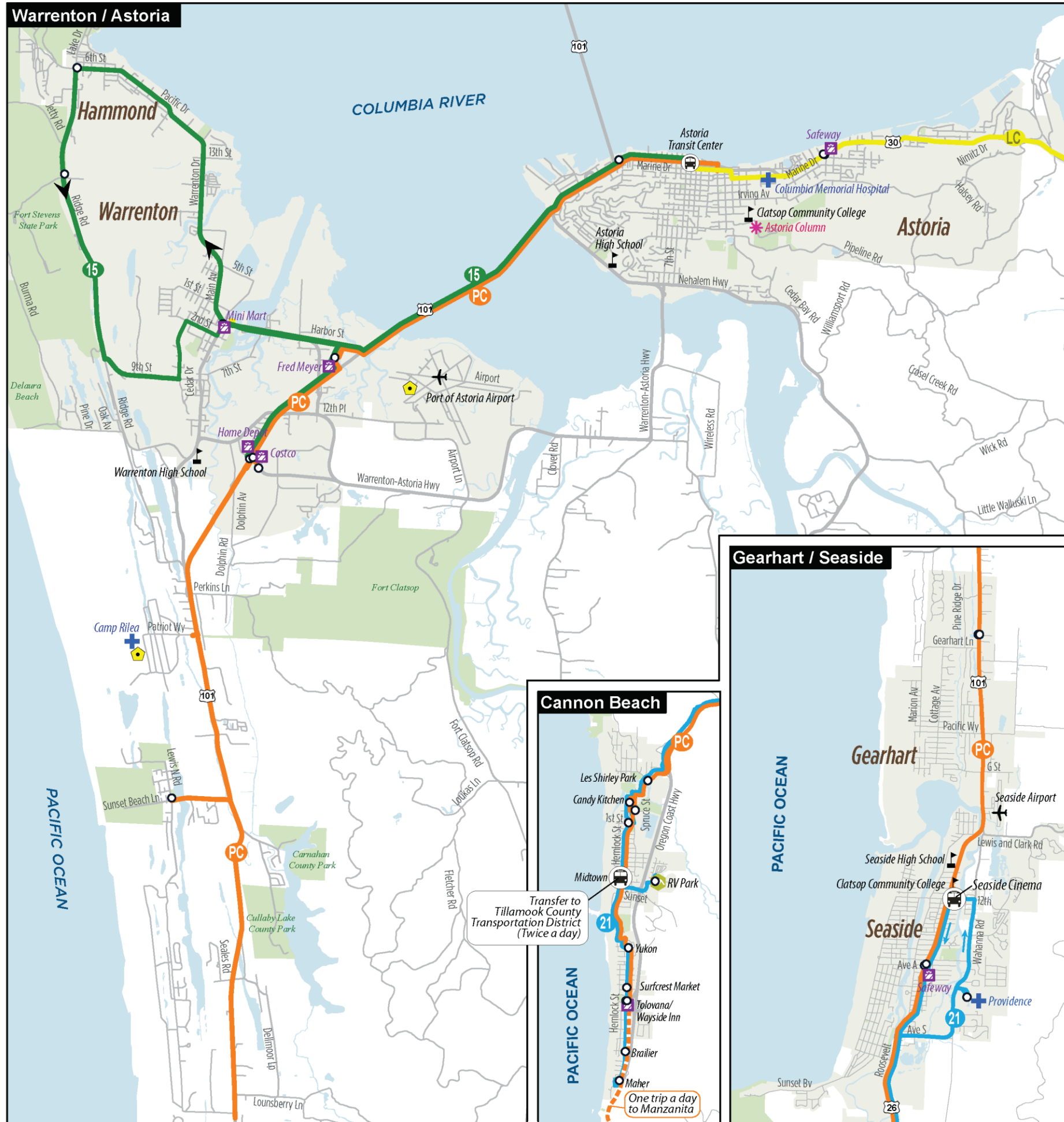


Figure 3-4 Weekend Year-Round System Map



**Transit Service (Weekend)**

- |  |                        |
|--|------------------------|
| <b>Sunset Empire Transportation District</b> | <b>Landmarks</b>       |
| — Pacific Connector (PC)                     | * Attractions          |
| — Route 15                                   | 🎓 Education            |
| — Lower Columbia Connector (LC)              | ✈️ Airport             |
| — Route 21                                   | 🏥 Medical              |
| ○ Bus Stops                                  | 🛒 Shopping             |
| 🚏 Transfer Locations                         | 🛖 Coast/National Guard |
|  | 🏙️ City Boundaries     |

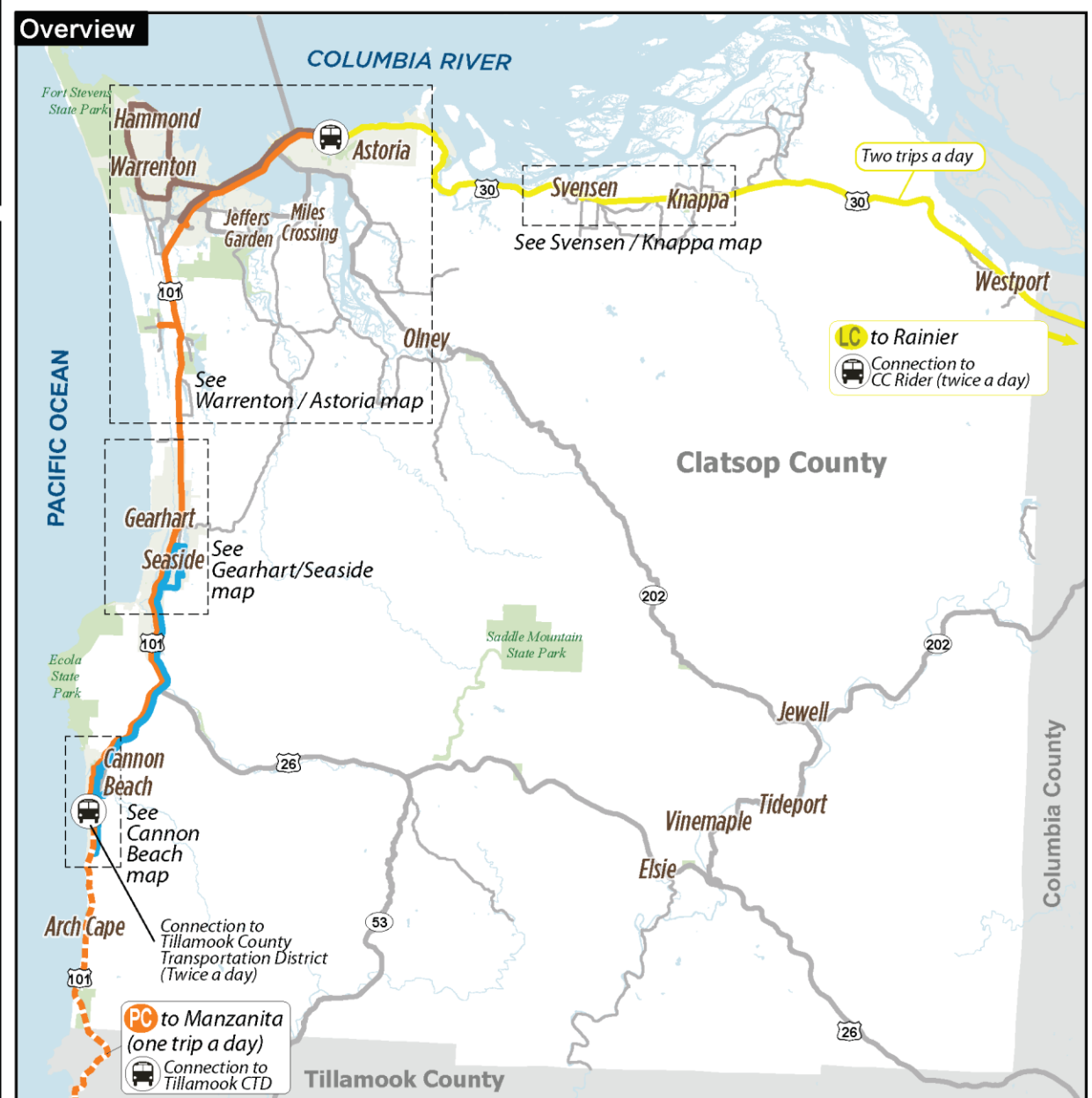
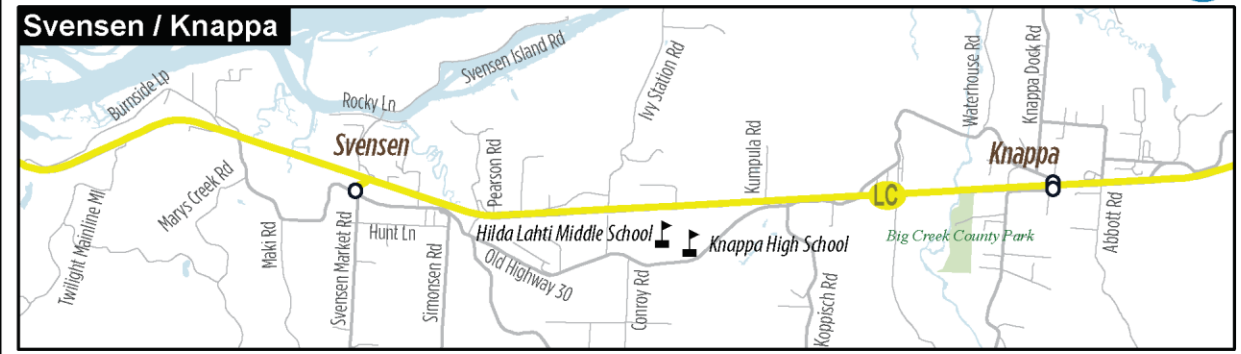
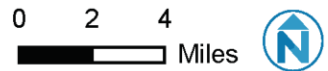
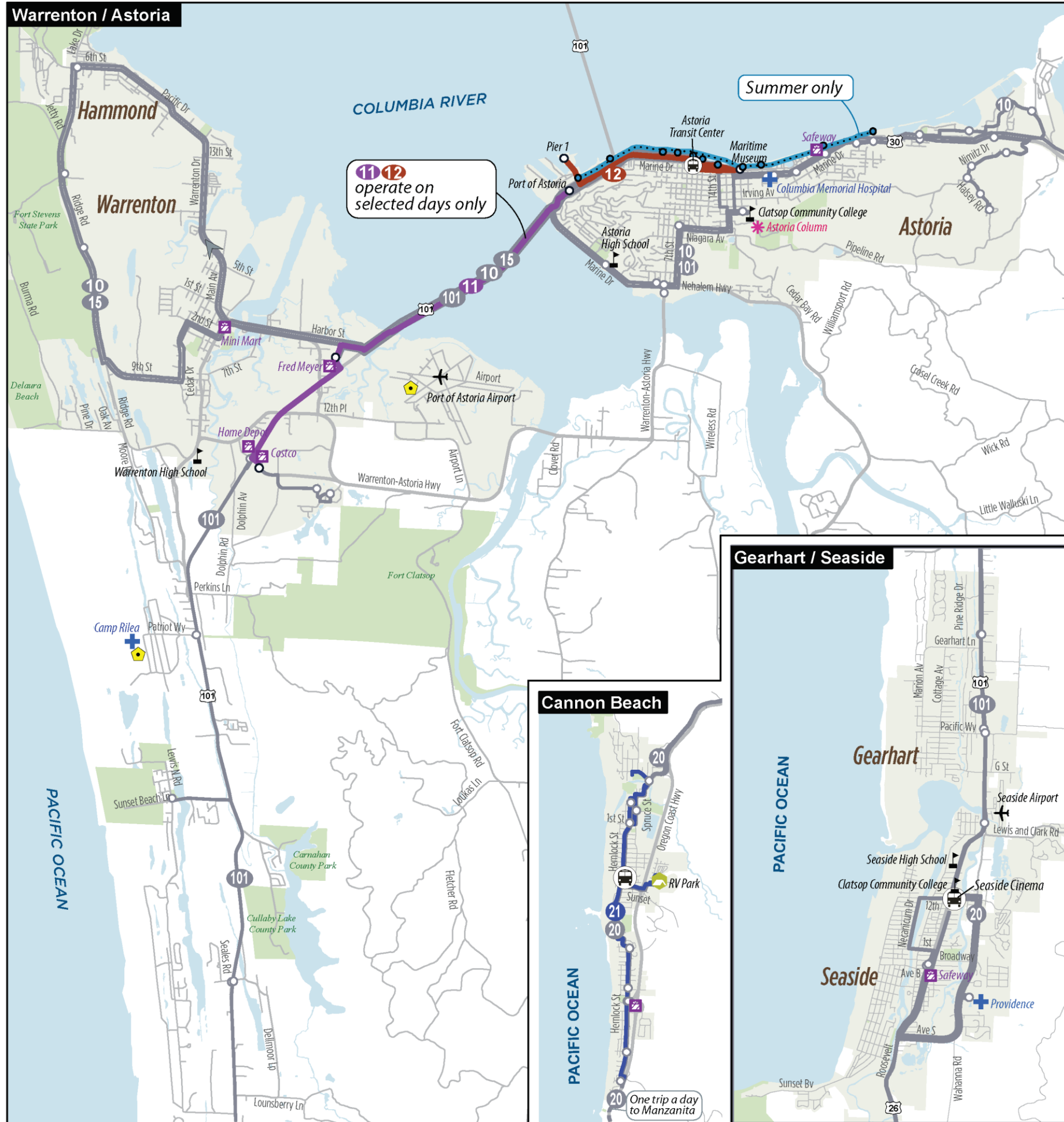


Figure 3-5 Weekday Seasonal System Map



**Transit Service - Seasonal (Weekday)**

**Seasonal Routes**

- Route 11
- Route 12
- Route 21
- Astoria Trolley\*
- All-year Routes (10, 15, 20, 101, Lower Columbia Connector)

**Transfer Locations**

**Landmarks**

- Attractions
- Education
- Airport
- Medical
- Shopping
- Coast/National Guard

City Boundaries

0 2 4 Miles

\*Not operated by SETD

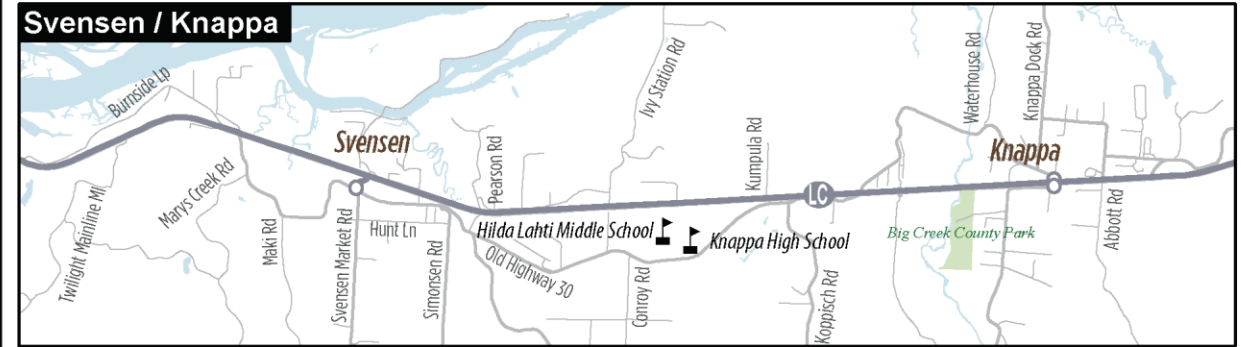
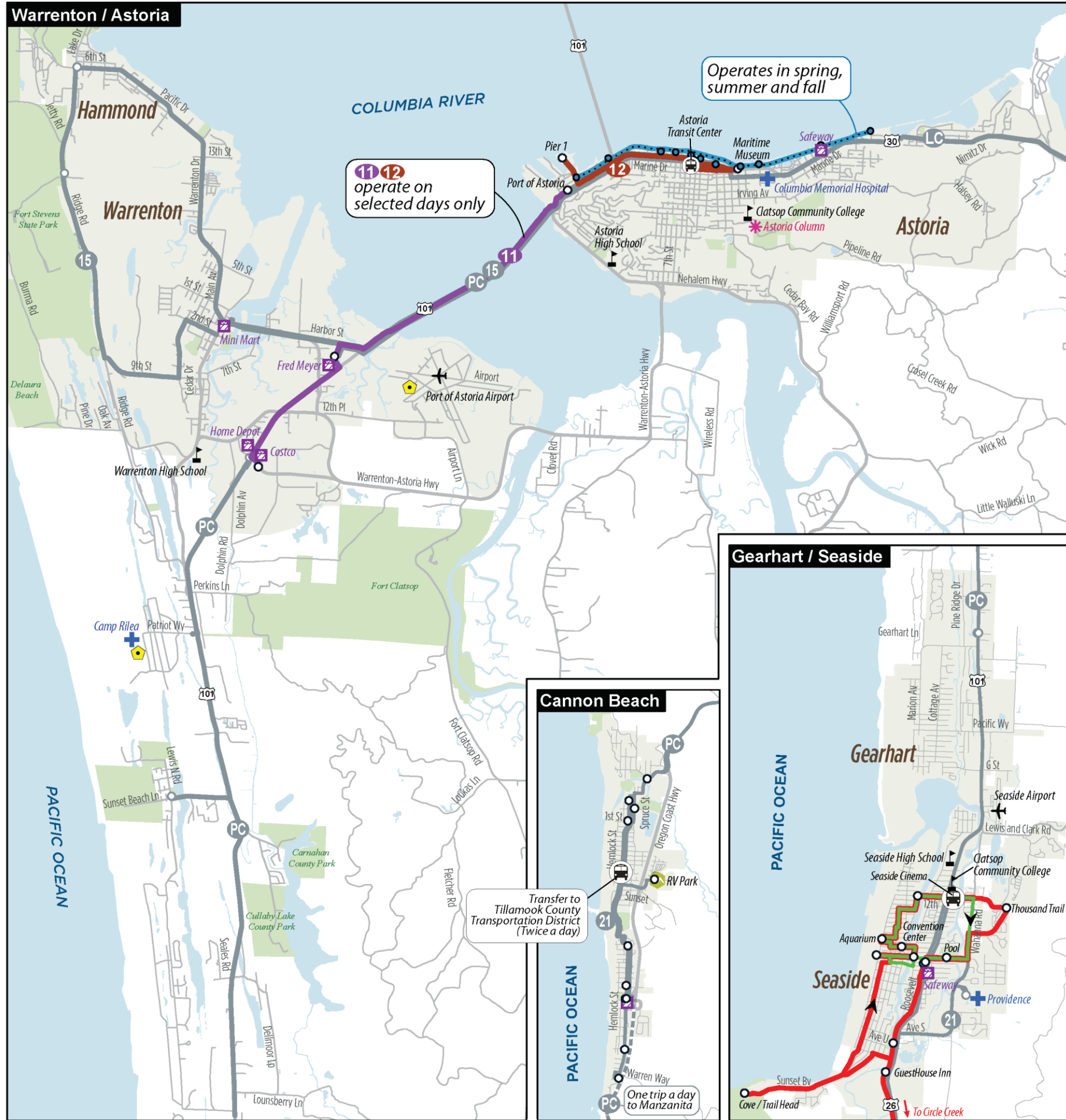


Figure 3-6 Weekend Seasonal System Map



**Transit Service - Seasonal (Weekend)**

**Seasonal Routes**

- Route 11 Purple Seal
- Route 12 Brown Deer
- Seaside Streetcar Trolley
- Astoria Trolley\*
- All-year Routes (Route 15, 21, Lower Columbia Connector, Pacific Connector)

**Landmarks**

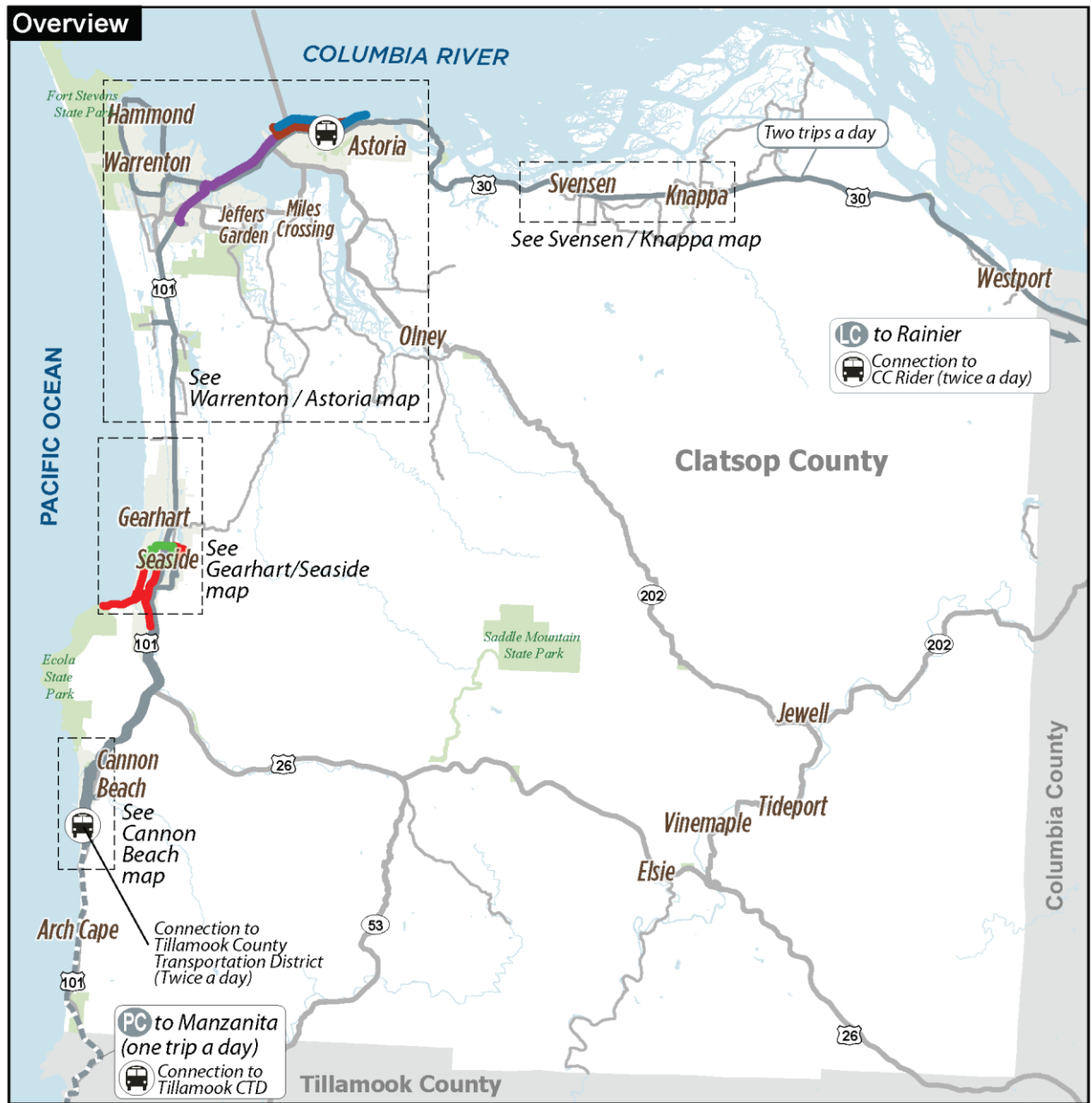
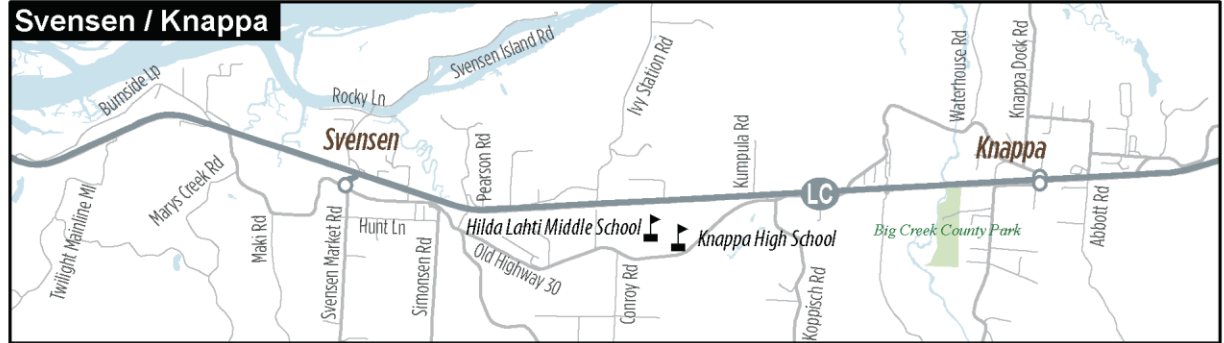
- Attractions
- Education
- Airport
- Medical
- Shopping
- Coast/National Guard

**Transfer Locations**

**City Boundaries**

0 2 4 Miles

\*Not operated by SETD



## Route Descriptions

**Route 10** has the highest ridership of SETD services (in 2014), carrying 62,800 passengers or 34% of all fixed-route ridership. The route follows two different patterns:

1. Loops around Warrenton/Hammond and serves Fred Meyer, then travels to the Astoria Transit Center, east on Marine Drive to Emerald Heights/Tongue Point, and west back into Astoria and turns south to serve Clatsop Community College (CCC), traveling along the south side of the city past Astoria High School and back to the Astoria Transit Center
2. Same alignment as above, but does not serve Warrenton/Hammond

Route 10's two operators (making AM and PM runs) start and end the day from the Warrenton garage, which is why Route 10 serves Warrenton-Hammond at the beginning, middle, and end of the day (six times per day).

**Route 15** serves Warrenton/Hammond, including Fred Meyer, the Warrenton Mini Mart, and Costco. This route runs six times per day at irregular intervals because the Route 15 vehicle also operates as the Lower Columbia Connector. Twice per day, the bus travels to the Transit Center in Astoria, switches head signs, and operates as the Lower Columbia Connector to Rainier.

**Route 20** links Seaside and Cannon Beach with hourly service. Starting from the Seaside Cinema, Route 20 travels west to Necanicum Drive and then rejoins U.S. 101 at Broadway and travels south. At Cannon Beach, the bus takes the first exit into downtown and travels via Hemlock Street. South of Tolovana Park, the bus travels through a residential area then turns around at Maher Street. Northbound, the bus turns right on 1<sup>st</sup> Avenue then north on Spruce Street past the visitor center and back onto U.S. 101. Entering Seaside, the bus turns right at Avenue S and travels via Wahanna Road, deviates into Providence Seaside Hospital, then runs back to the Cinema. Three times per day, passengers can transfer to Tillamook County Transportation District vehicles – twice in Midtown in Cannon Beach (at 9:20 a.m. and 4:20 p.m.) and once in Manzanita (at 11:10 a.m.). The 10:00 a.m. Route 20 trip provides the midday connection in Manzanita; as a result there is no 11:00 a.m. Route 20 departure in Seaside.

**Route 21** operates on weekends year-round, and on weekdays during the summer. On weekends, Route 21 is very similar to Route 20. Service starts at the Seaside Cinema and travels south to Cannon Beach and back. Route 21, however, does not serve Seaside on every trip. On the 9:55 am trip leaving Seaside, the bus travels through Cannon Beach southbound and northbound, but at the Candy Kitchen rather than continuing to Seaside, the bus does another loop through Cannon Beach and does not get back to the Cinema until 11:25 am. A similar pattern occurs in the afternoon. The Route 21 driver operates a split shift, with no service operated between 12:20 pm-3 pm. Route 21 is funded by the City of Cannon Beach through an inter-governmental agreement that enhances summer service. During summer weekdays, Route 21 supplements Route 20 and only runs back and forth in Cannon Beach.

**Route 101** has the second highest ridership, and links Astoria, Warrenton, the retail area near Costco, Gearhart, and Seaside. Service runs hourly except for three gaps – there is no 11 a.m., 1 p.m., or 7 p.m. departure from Astoria. Southbound, after leaving the transit center, the route travels to Fred Meyer, then turns at Costco/Home Depot onto Ensign Lane. This approximately 5-minute deviation from U.S. 101 serves the quickly developing area that contains the Northwest Seniors and Disabilities Services office, the Probation office, Food Bank, and multi-family housing. A Walmart will open south of Costco in fall 2016, and is expected to increase shopping traffic and demand for access to this area. Route 101 makes deviations upon request to Camp Rilea, which houses a veteran's clinic. Route 101 also deviates to serve the Sunset Beach community. This location is served on both northbound and southbound trips; northbound, the bus must often wait more than a minute to make a left turn onto U.S. 101. During the summer, this turn can take many minutes. A planned "jughandle" turn south of the Sunset Beach turn

would allow the northbound Route 101 bus to make a right-turn onto southbound U.S. 101 and use the jughandle turn to access northbound U.S. 101.

In Seaside, Route 101 stops at the Seaside Cinema, then travels clockwise via Wahanna Road back to U.S. 101 using Avenue S, past McDonald’s, and back to the Cinema, then travels northbound.

Within Astoria, Route 101 travels counterclockwise along Marine Drive (Route 10 serves Marine Drive in the clockwise direction). The 10/101 loops are quite long, meaning a passenger can experience significant travel savings by transferring depending upon their destination. For example, from Fred Meyer in Warrenton, a passenger heading to Clatsop Community College would have the fastest trip aboard the 101, which enters town and travels via the south side of Astoria directly to the college. Aboard Route 10, the passenger would end up going out to Emerald Heights and Tongue Point before coming back to the college. Alternately, Route 101 passengers wishing to go to a destination along Marine Drive near the Transit Center would have the fastest trip on Route 10. The Route 10 and 101 operators communicate with each other by radio and transfer passengers either at Fred Meyer (if it happens to be a time when Route 10 serves Fred Meyer) or in downtown Astoria around 14<sup>th</sup> and Exchange Streets (if Route 10 is not serving Fred Meyer).

Similarly, in Seaside Route 20 and Route 101 operate in opposite loops around Wahanna Road, Avenue S, U.S. 101, and 12<sup>th</sup> Street.

**Lower Columbia Connector (LCC)** links Astoria to Rainier, OR two times per day. This route also serves the Clatsop County communities of Svensen, Knappa, and Westport as well as Clatskanie in Columbia County. From Rainier, passengers can transfer to Longview, WA or to Portland via CC Rider. Passengers can also transfer to Amtrak service in Longview.

**Pacific Connector** runs on weekends following a route similar to a combined Route 101 and Route 20. The route operates three round trips per day from the Transit Center in Astoria to Fred Meyer, Seaside, and Cannon Beach. Two trips run in the morning (8:30 a.m. and 10:40 a.m.), then there is a break in service until the third trip from 3:20-5:30 pm. Similar to Route 20, passengers have three opportunities to transfer to Tillamook County service in Cannon Beach (two times) and in Manzanita (one time).

## RideAssist

RideAssist is the federally-required ADA paratransit (curb-to-curb) service offered to people with disabilities who are unable to access or use fixed-route service. Passenger origins and destinations must be within a ¾-mile buffer of fixed-route service. RideAssist service is offered during the same days and times as fixed-route service.

Reservations for RideAssist can be made from 1 day to up to 2 weeks in advance. RideAssist ridership has increased during the past three years (Figure 3-7). This trend is similar to the experience of many transit agencies, given the demographic trend of an aging population that is more likely to have a disability.

**Figure 3-7 Rides Provided by RideAssist between 2012 and 2014**

	2012	2013	2014
Total	3,306	3,076	3,734
Average monthly	276	256	311

Source: Sunset Empire Transportation District

## Dial-A-Ride

Curb-to-curb Dial-a-Ride (DAR) service is open to anyone residing within two areas:

## Sunset Empire Transportation District

- Miles Crossing/Jeffers Gardens and Warrenton/Hammond, Monday-Friday between 8 am-5 pm
- John Day/Svensen and Knappa, on Tuesdays and Thursdays with a morning pick-up and an afternoon return

Riders must reserve trips at least two days in advance. Fares are based on distance; a one-way fare for a 0-10 mile trip costs \$8, and \$12 for an 11-20 mile trip.

Figure 3-8 lists DAR ridership from 2012-2014. Due to budget constraints, DAR service was cut for a time in 2014, and ridership after service was reinstated has remained extremely low.

**Figure 3-8 Rides provided by DAR between 2012 and 2014**

	2012	2013	2014
Total	854	669	27
Average monthly	71	56	2

Source: Sunset Empire Transportation District

## RidePal & NWTO

Through the RidePal program, SETD’s mobility manager operates both individualized and group travel training and provides a “how to ride the bus” orientation throughout the community.<sup>18</sup>

ODOT promotes Transportation Options (TO) as a way of providing policy support for and programs linking people to available services such as vanpools, carpools, transit, walking, and bicycling. The Northwest Transportation Options (NWTO) is a partnership of Clatsop, Columbia, and Tillamook Counties for promoting these options.<sup>19</sup>

## ROADWAYS

The major transportation routes through the county include U.S. 26, U.S. 30, and U.S. 101. U.S. 26 and U.S. 30 run east-to-west, connecting the county to the Portland metropolitan area. U.S. 101 parallels the coast running north-to-south, providing a connection between U.S. 30 and U.S. 26. These roadways, part of the National Highway System, serve the highest volume of traffic in the county. Average annual daily traffic (AADT) volumes range from 6,000 to 8,000 along U.S. 26 and U.S. 30, up to 20,000 along portions of U.S. 101 north of U.S. 26, and around 5,000 south of U.S. 26. Other Statewide Highways in the county include U.S. 101 Business, OR 53, OR 103, OR 104, OR 104S, and OR 202. These highways serve less traffic, with AADT volumes generally less than 5,000 each.

Motor vehicle conditions in the county vary based on the time of year. During the summer peak (typically in August), traffic volumes are much higher than during the average weekday (typically in May and September) and, therefore, roadways are relatively more congested.

The Clatsop County TSP compared intersections in the county to mobility targets intended to maintain a minimum level of efficiency for motor vehicle travel. Intersection operations in the county are monitored through volume-to-capacity (v/c) ratios. A v/c ratio is a decimal representation (between 0.00 and 1.00) of the proportion of capacity of the roadway that is being used. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given turn movement, approach leg, or intersection. A lower

<sup>18</sup> <http://www.ridethebus.org/RIDEPal.aspx>

<sup>19</sup> <http://www.ridethebus.org/RIDENext.aspx>

ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases and performance is reduced.

Most roadways in the county experience traffic volumes that utilize less than half of the available capacity during the summer (v/c ratio is less than 0.50). The exception is the segment of U.S. 101 between Astoria and Seaside, which has a v/c ratio of 0.70 during the summer. Drivers may experience some slowing in travel along this segment of the roadway system during times of peak travel demand, considered to be highest during the afternoon/evening in peak summer months (July-September). Also, drivers at many of the unsignalized side street approaches to the highway along this segment experience high delays (over 90 seconds per vehicle), while waiting for a clearing to enter the highway. By 2035, motor vehicle trips along this segment are projected to increase by 45%. Summer congestion greatly affects SETD services – primarily Route 101, which must cross the Youngs Bay Bridge almost every hour.

## ADDITIONAL TRANSPORTATION PROVIDERS

In addition to SETD, a number of service agencies, churches, and assisted living facilities provide transportation on a limited basis to their constituents, clients and/or parishioners.

### Transit Agencies

**Pacific Transit** provides four trips per day into Clatsop County from Pacific County, WA. According to the agency, most passengers arrive for shopping, and some transfer to SETD for access to Fred Meyer, Costco, and other destinations. Route 24 serving Astoria has moderate ridership levels and the agency does not plan to make any changes to the route in the near future.

**Northwest POINT** is an Amtrak through route (meaning passengers can buy tickets to connecting Amtrak service through an arrangement between Amtrak and ODOT) connecting Astoria, Seaside, Cannon Beach, and Portland’s Union Station with two round trips per day. Buses are coach style with Wi-Fi and restrooms. Fares between Astoria and Portland are \$18 each way.

**Columbia County (CC) Rider** connects Portland to St. Helens and to Rainier. CC Rider routes meet SETD routes twice per day, seven days per week, at the new Rainier transit center. A fare from Astoria to Portland via SETD and CC Rider costs \$15 (\$29 round trip).

**Tillamook County Transportation District (TCTD)** links with SETD three times per day. Clatsop County residents reported accessing TCTD routes for travel to destinations in Manzanita and Nehalem in Tillamook County, while Tillamook County residents stated a need to get to medical destinations in Clatsop County, especially the Veteran’s Clinic at Camp Rilea.

SETD and four other transit partners, including CC Rider and TCTD, joined in a coalition called the **Northwest Connector Alliance**. The organization’s purpose is to better facilitate regional connections between systems to connect people from Portland to the coast and across county lines. Through outreach and public workshops, the Alliance came up with the name Northwest Connector to brand all four transit systems. A system map of the Connector network is on the front of SETD’s brochures, and many bus stops bear the OXO signage representing Connector. The OXO design is a graphic representation of “north by northwest.”

### Other Providers

**MEDIX** is a private ambulance service for specialized transportation. The Medix fleet in Clatsop County includes six vans, all of which are wheelchair and lift equipped. The vast majority (90%) of their business entails non-emergency medical transportation, and the primary clientele are older adults, people with disabilities, and Medicaid recipients. MEDIX averages 400 one-way trips per month, and will travel to

## Sunset Empire Transportation District

Tillamook County, Pacific County in Washington State, Portland, and occasionally Columbia County. SETD contracts with MEDIX to provide RideAssist Medicaid service.

**Coast Rehabilitation** is the largest residential and vocational program serving individuals with disabilities with its own fleet of vehicles: 1 full-sized van or 1 minivan for each residential home. The primary geographic area served by Coast Rehabilitation is Seaside to Astoria. To cover other areas of the county, the Center collaborates with SETD.

**Taxis** are an expensive but sometimes last-resort option for transportation in rural areas. Several operators provide taxi service within Clatsop County. Taxis can become excellent transit agency partners through programs such as Guaranteed Ride Home, in which a transit rider may be reimbursed for a taxi fare a certain number of times per year in case of an emergency.

**Private assisted living facilities** in Astoria, Gearhart, and Seaside own vans/buses for transporting their residents. These facilities primarily transport their residents on regularly scheduled weekly trips—shopping, prescription pick-ups, and church and social outings.

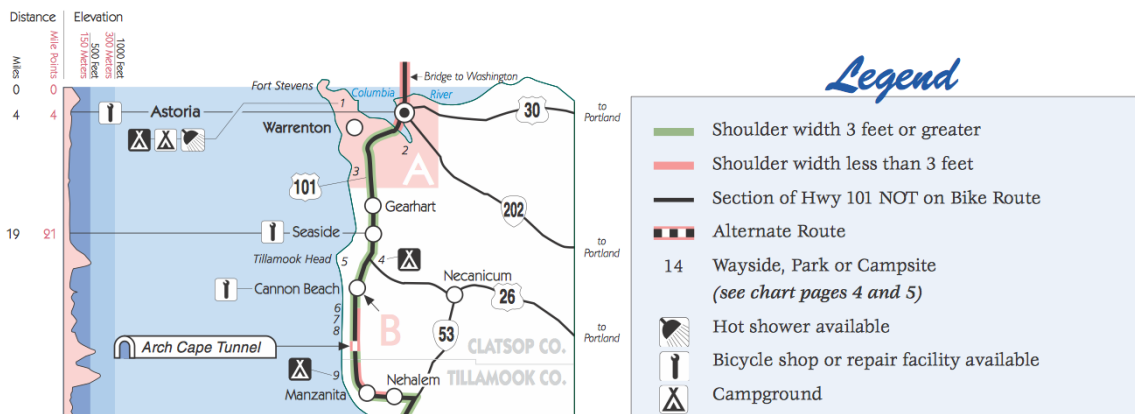
The U.S. Department of Veterans Affairs owns one van operated by the **Disabled American Veterans** to transport veterans to medical appointments in Portland.

Finally, the largest transportation providers in the County are the school systems, including **Astoria, Warrenton-Hammond, and Seaside School Districts**. While excess capacity exists midday, school buses are not necessarily a good fit for populations with special transportation needs because most of their buses do not have wheelchair lifts and the widths of the aisles are narrower than a standard public transportation bus.

## WALKING & BICYCLING

Every transit rider is a pedestrian at some point. In some cases, transit riders are also bicyclists. Non-motorized infrastructure may be linked to land use policies – for example, often times a developer must build sidewalk and curb and gutter as part of a new project. In general, the population centers of Clatsop County contain sidewalks. ADA-compliant curb ramps and frequent safe street crossings are not as prevalent, which inhibit walking in general (and walking to transit). The Clatsop County TSP recommends pedestrian crossings every 330 feet. Bicycle lanes are present in some areas of Astoria and along U.S. 101; this highway is designated as part of the Oregon Coast bicycle route (Figure 3-9).

**Figure 3-9 Oregon Coast Bike Map showing Clatsop County**



Source: Oregon Department of Transportation Coast Bike Route

## 4 SETD SYSTEM PERFORMANCE & ASSESSMENT

A more detailed look at SETD’s performance at the route and segment level reveals opportunities to strengthen service. An assessment of system and route-level performance, along with a review of the transit agency as an organization, show the system’s strengths and weaknesses.

For complete route profiles including boardings by stop, on-time performance, and ridership by trip for year-round and summer service, see Volume II, Section C.

### FIXED ROUTE

“Productivity” is a term used in the transit industry to help understand a service’s efficiency and effectiveness. Productivity metrics are typically expressed as a ratio of a unit of service to an outcome – for example, cost per revenue hour, passengers per revenue mile, and service hours per capita are all common metrics used to assess an agency’s return on investment. The targets for each of these metrics, however, is a decision made by the individual transit system and broader community.

During the past three calendar years, ridership has increased (Figure 4-1), and so has the level of service output (revenue miles and hours). The productivity metrics shows that passengers per mile and per hour peaked in 2013, and dipped very slightly in 2014; however, the overall trend shows increased productivity.

Figure 4-1 Annual Fixed Route Performance, 2012-2014

Metric	2012	2013	2014
Total passengers	154,622	182,836	183,268
Total revenue miles	322,612	351,159	372,437
Total revenue hours	14,686	16,034	16,224
Passengers per revenue mile	0.48	0.52	0.49
Passengers per revenue hour (productivity)	10.53	11.40	11.30

Source: Data from Sunset Empire Transit District

### Route-Level Performance

Routes 10, 101, and Pacific Connector (the weekend version of Route 101) achieve good productivity in terms of passengers per hour. Route 20 performs decently given the lower densities of Seaside and Cannon Beach (Figure 4-2). Lower Columbia Connector performs poorly, with less than three passengers per revenue hour. Productivity of Route 21 is also relatively low. Route 11 is an outlier because it serves a very specialized market, often cruise ships, with a limited number of coordinated trips and thus carries a large number of customers per revenue hour. In terms of cost, Route 10 and Route 101 cost per passenger

are low given high ridership, whereas Lower Columbia Connector has the highest cost per passenger, followed by Route 21. These figures are based on a standard fixed-route cost per hour of \$54.66.<sup>20</sup>

**Figure 4-2 Average Monthly Performance Data by Route, 2014**

Route	Monthly Passengers	Monthly Revenue Hours	Passengers per Revenue Hours	Monthly Revenue Hours	Passengers per Revenue Mile	Cost per Passenger
Route 10	5,234	312.8	16.7	5,630	0.98	\$3.28
Route 11	4,400	87.8	50.1	795	5.54	\$1.09
Route 20	2,248	253.2	8.9	6,454	0.35	\$6.18
Route 21	589	109.4	5.4	2,294	0.26	\$10.09
Route 101	4,161	293.3	14.2	7,515	0.55	\$3.87
Lower Columbia Connector	644	62.7	2.9	7,725	0.08	\$21.79
Pacific Connector	686	62.7	11.0	1,727	0.40	\$4.95
Seaside Streetcar	362	64.0	5.7	813	0.45	\$9.66
<b>OVERALL</b>	<b>18,801</b>	<b>1,569</b>	<b>11.3</b>	<b>37,919</b>	<b>0.49</b>	<b>\$4.74</b>

Source: Data from Sunset Empire Transit District

## Ridership by Stop & by Route

SETD staff recorded the boarding and alighting location of passengers in May and July 2015. Figure 4-3 and Figure 4-4 show ridership by stop. In Seaside, stop activity is concentrated at the Cinema, McDonald’s, and Avenue A, whereas people’s final origins or destinations (based on the on-board survey data) are more scattered throughout the community. This indicates that Seaside riders may walk long distances to and from bus stops.

The major ridership generators in Astoria are mostly in the eastern part of the city—Emerald Heights, the Job Corps (Tongue Point), Safeway, and Clatsop Community College. In the western part of Astoria, ridership activity along Marine Drive between the Transit Center and the Short Stop Market is steady but there are no major ridership attractors.

At Safeway, the predominant boarding pattern is at the eastbound stop and alightings comprise most of the ridership activity at the westbound stop. This may indicate that Safeway shoppers and employees live east of Safeway and take Route 10 from Emerald Heights and Tongue Point or other neighborhoods.

On weekends, Route 10 does not operate and there is no service to eastern Astoria except for the Lower Columbia Connector, which only operates two trips per day and is not convenient for activities such as shopping. The Pacific Connector does not run farther east than the Transit Center, meaning residents of western Astoria could not access activity centers such as Safeway on weekends. Residents of eastern Astoria would similarly have difficulty accessing destinations such as Safeway and Fred Meyer on weekends since Route 10 does not run.

Figure 4-5 and Figure 4-6 show boardings and alightings by route. Multiple routes serve many destinations, therefore this analysis shows which route passengers use to access destinations. At the time

<sup>20</sup> Data provided by SETD multiplies the cost of hours by \$54.66

## Sunset Empire Transportation District

of the data collection (May 2015), Route 101 still ran every 120 minutes. Still, a large percentage of riders heading to and from Clatsop Community College took Route 101. This points to either students arriving from regional origins (Seaside, for example), or to people arriving from Warrenton who realize Route 101 is the most direct route.

A fair amount of people used the Columbia Connector in Warrenton (which has been rebranded as Route 15 west of the Transit Center as of August 2015) to access the Warrenton Mini Mart and Fred Meyer, showing that people are aware that both Route 10 and Columbia Connector serve those destinations.

In Seaside, the vast majority of ridership occurs at the Cinema or at McDonald's. The portion along Wahanna Road sees very little activity. According to stakeholders, low-income housing is present along Wahanna Road; however, it may be that service is not known or needed along this area.

The next map series (Figure 4-7 and Figure 4-8) show data from the July survey effort just for routes affected most by seasonal demand (Routes 101, 20, 21, Pacific Connector, Seaside Trolley). The data shows 47 fewer stops at Clatsop Community College, as expected, but a handful of people are still taking the bus there for summer classes. The level of activity during weekdays in Seaside increased notably – for example, weekday 20/101 ridership carried 46 boardings and alightings at the Seaside Cinema while 70 people used the stop during summer. A similar uptick can be seen at Avenue A and the McDonald's. Activity in Cannon Beach increased slightly as well.

Figure 4-9 shows boardings by route during summer weekdays. The increase in ridership at the Seaside Cinema is primarily coming from Route 101, not Route 20, indicating that seasonal visitors to Seaside originate from the north. In Cannon Beach, ridership at most stops went up, but ridership on Route 21 is fairly small – people may not realize that the 20 and 21 serve similar routes, or perhaps there is less demand for in-town Cannon Beach travel than for travel from Seaside to Cannon beach. Figure 4-10 shows boardings by route for a summer weekend. In this case, the 21 shows good ridership within Cannon Beach, with some pick-ups in Seaside as well. The Pacific Connector serves more trips in Seaside than Cannon Beach.

The maps presented in Figure 4-3 to Figure 4-10 reflect the service design as of May 2015 or August 2015 (summer survey). Where possible, the maps were adapted to reflect more recent changes for consistency with the current service description, such as the rebranding of the Lower Columbia Connector as Route 15 where it provided local service in Warrenton.

Figure 4-3 Boardings and Alightings by Stop – Weekday

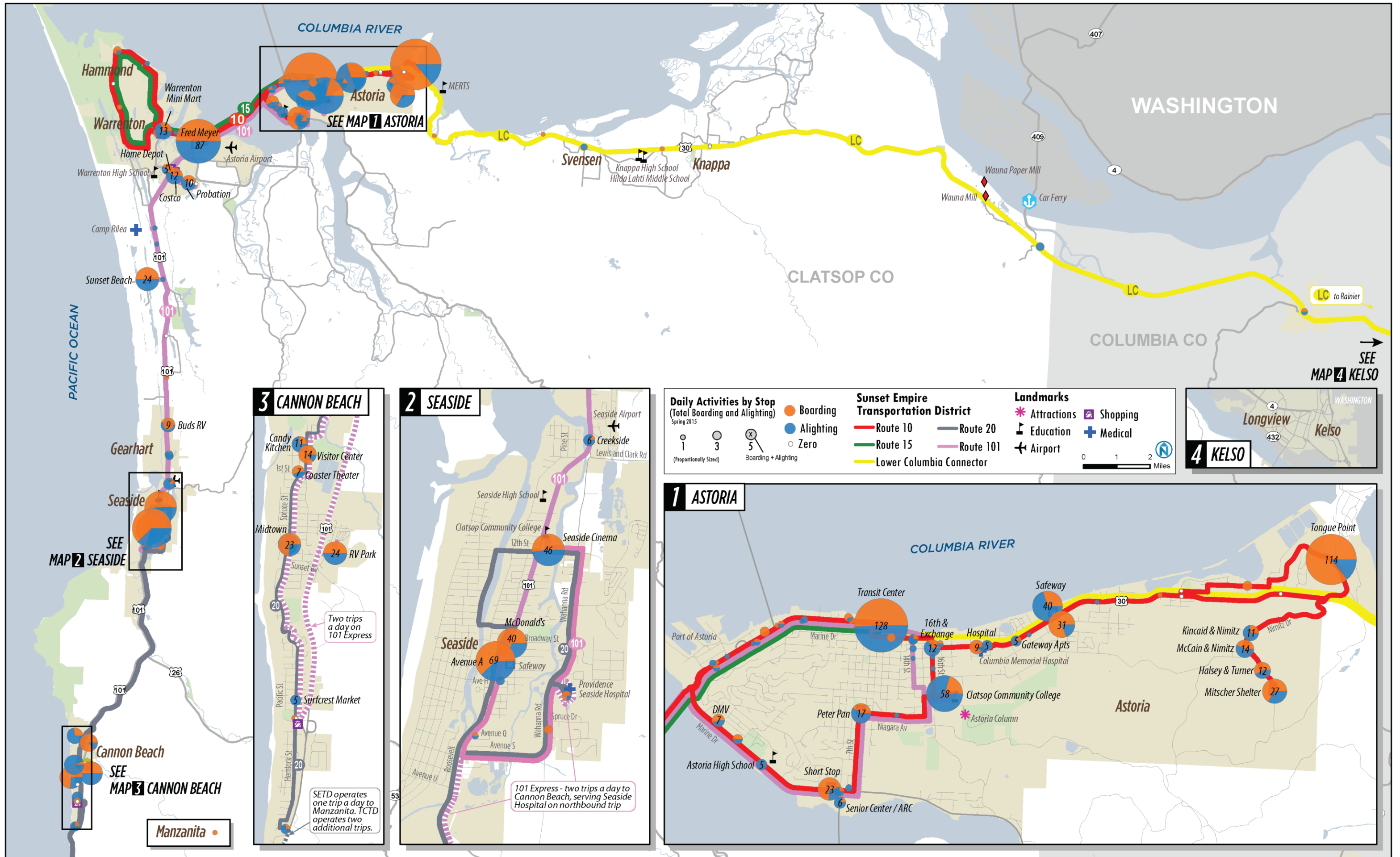




Figure 4-5 Boardings and Alightings by Route – Weekday

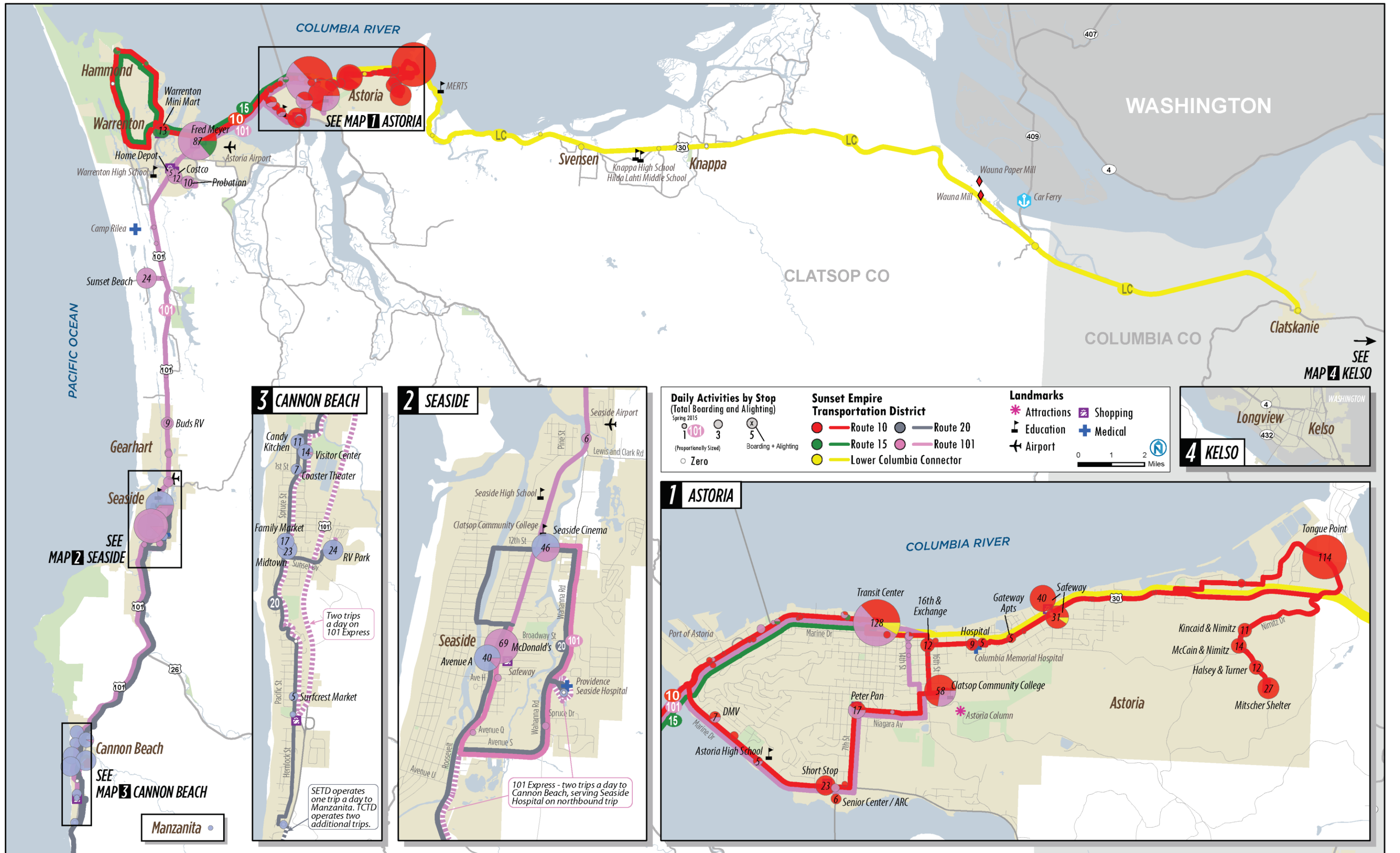


Figure 4-6 Boardings and Alightings by Route – Weekend

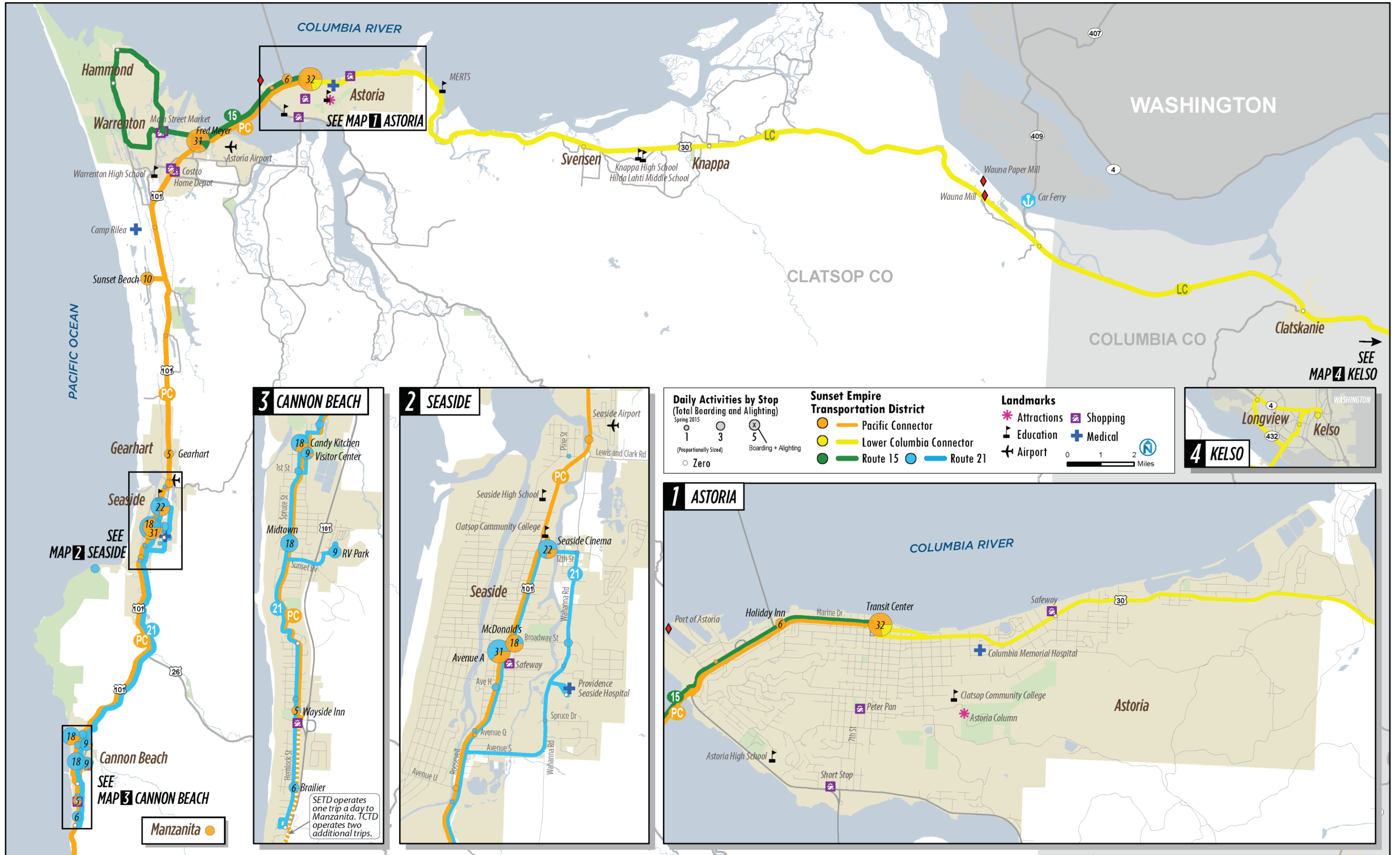


Figure 4-7 Boardings and Alightings by Stop – Summer Weekday (for routes serving seasonal market)

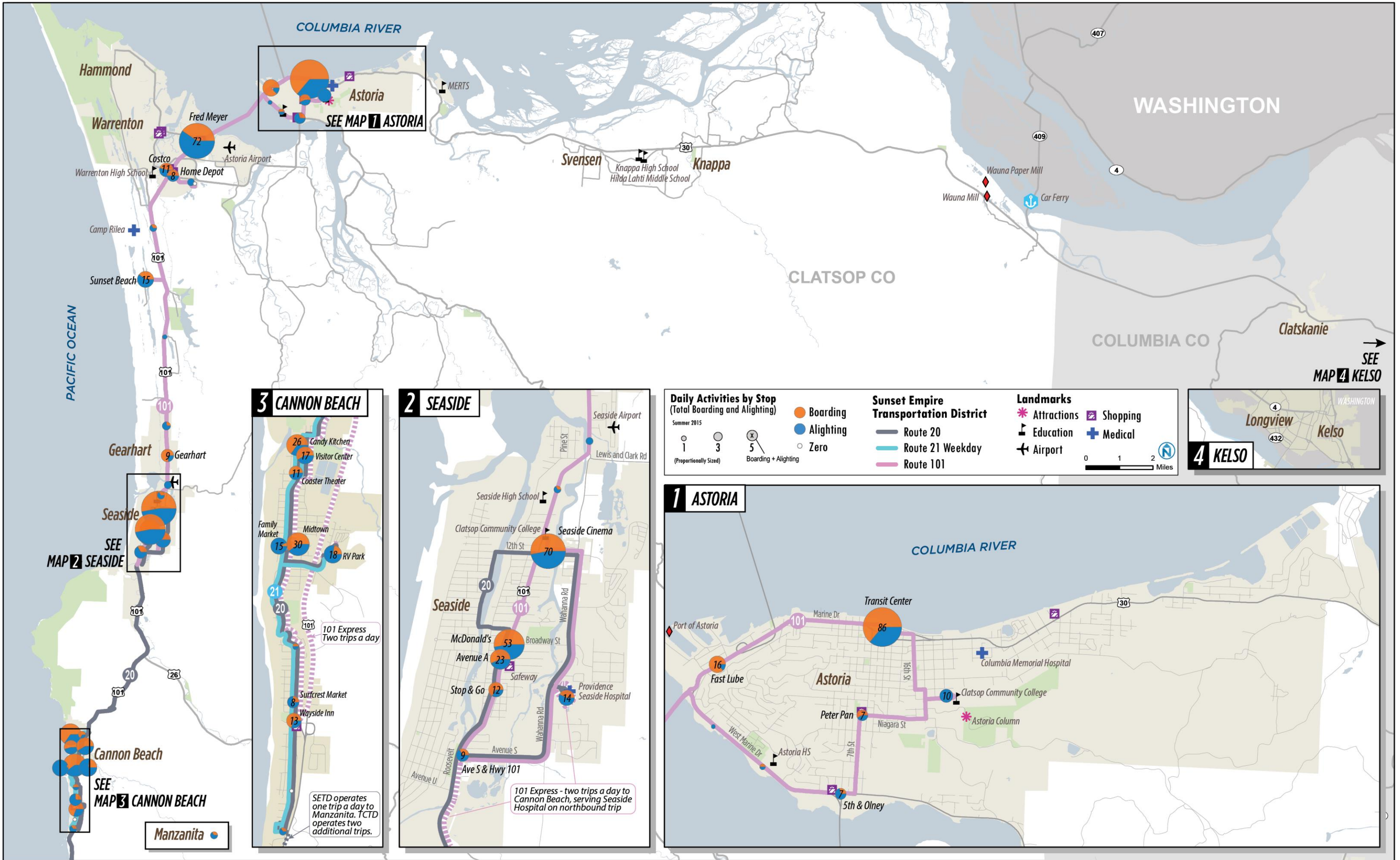


Figure 4-8 Boardings and Alightings by Stop – Summer Weekend (for routes serving seasonal market)

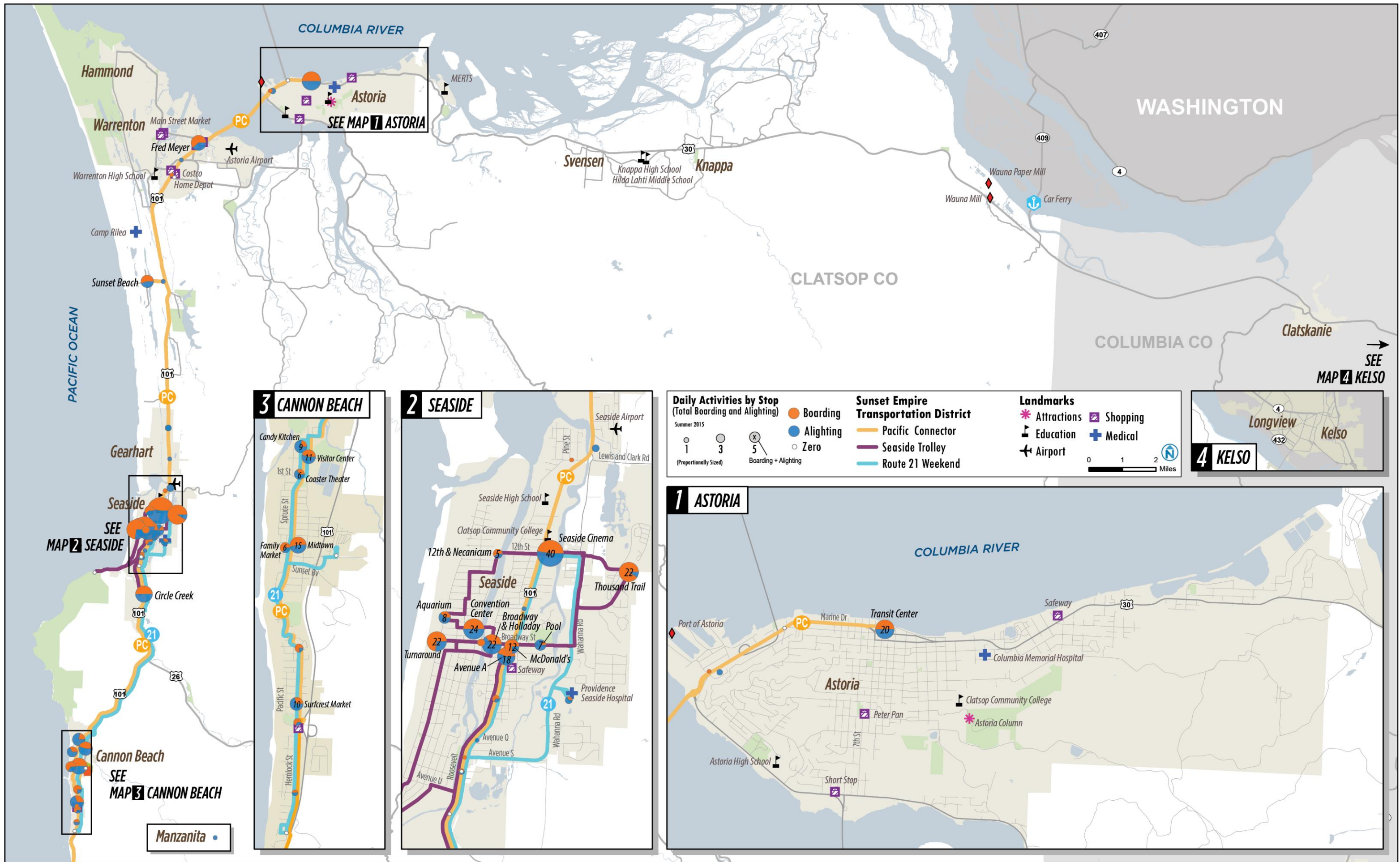


Figure 4-9 Boardings and Alightings by Route – Summer Weekday (for routes serving seasonal market)

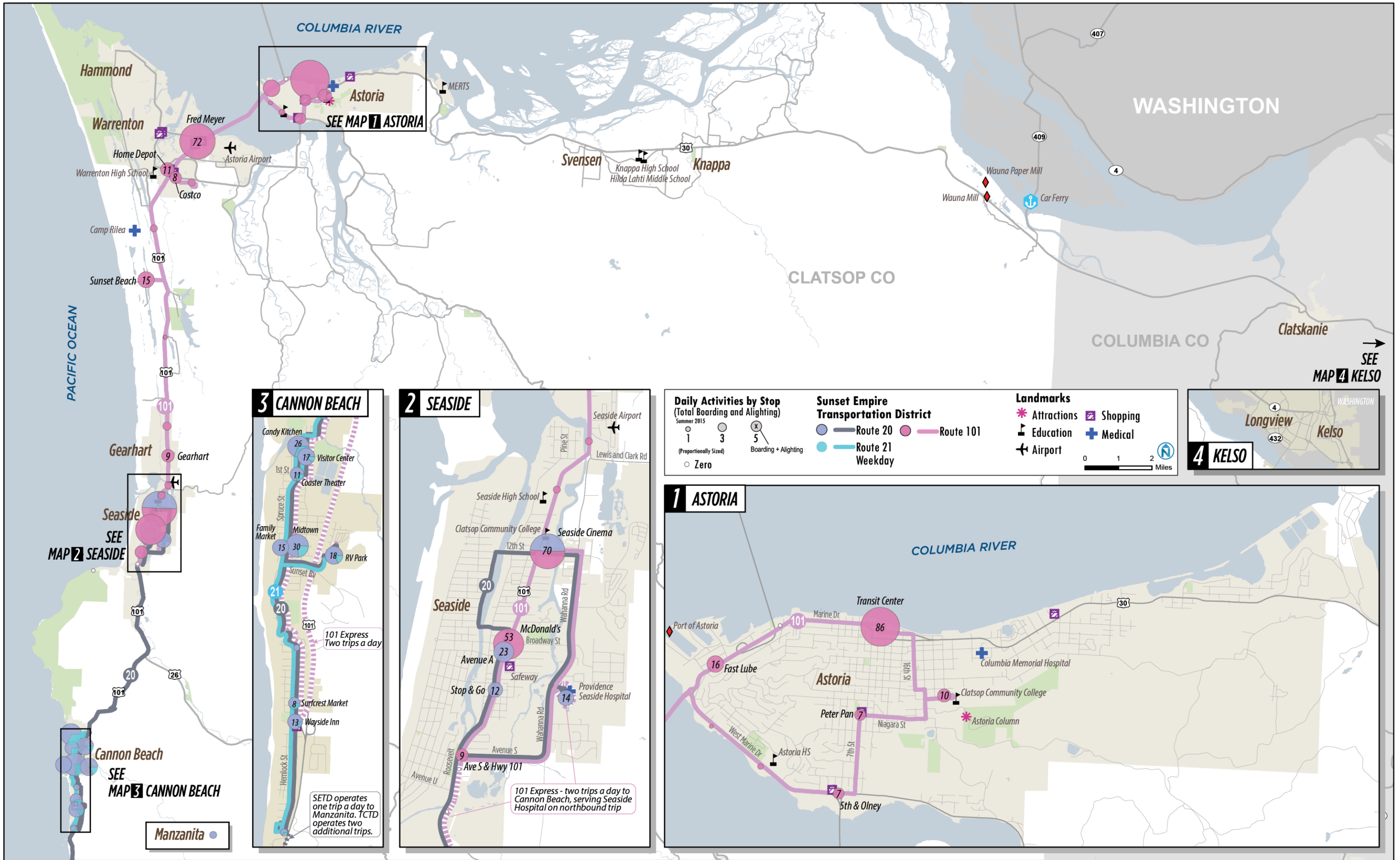
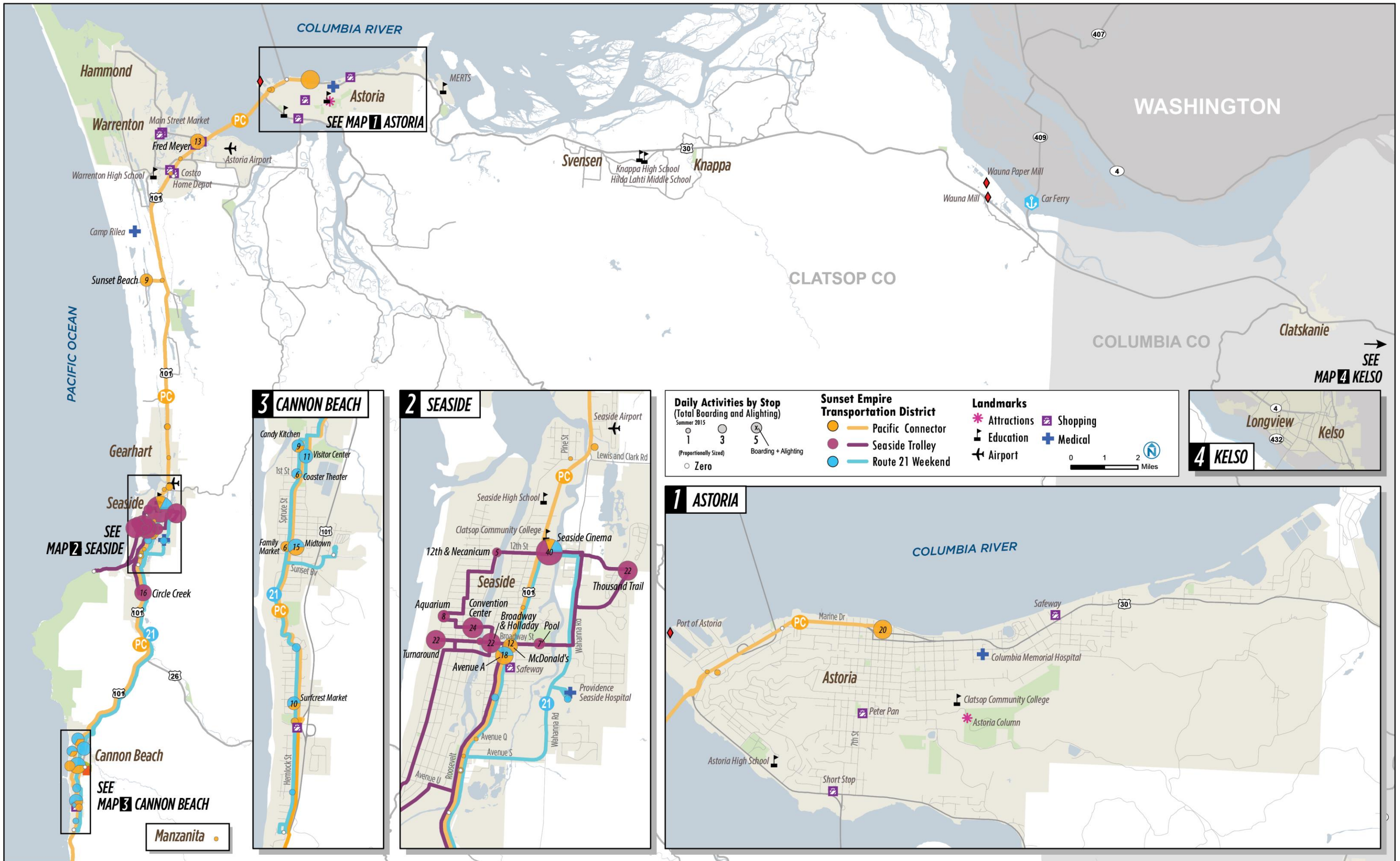


Figure 4-10 Boardings and Alightings by Route – Summer Weekend (for routes serving seasonal market)



## Route Profiles

Further analysis of the rider survey data was used to determine overall high-ridership stops, identify unproductive portions of routes, and track on-time performance. Key findings from the route profiles include:

- **Lower Columbia Connector (Route 30)** – This route has low productivity. Ridership to/from Astoria to Svensen/Knappa carries the bulk of ridership but makes up a small portion of the route length.
- **Route 10 (Astoria)** - This route is highly productive (18.4 boardings per service hour); high ridership to the Job Corp (Tongue Point) is notable. Route 10 has high number of alightings at Clatsop Community College but relatively few boardings (Route 101 provides a more direct return trip to downtown Astoria). There are some issues with on-time performance issues (20% late), although differences in running time reflect different route patterns, e.g., Route 10 provides service between Warrenton-Astoria or circulation in Warrenton on some trips.
- **Route 101 (Astoria – Seaside)** – Route 101 is productive (15.6 boardings per service hour). Productivity is lower (but still reasonable) in the summer possibly due to fewer trips to CCC or other seasonal factors. SETD increased frequency on this route between May and August (data were collected in May and July), so lower productivity also reflects passengers being spread across more trips. There is strong midday demand, though more moderate in the summer. On-time performance worsened in the summer, but was perhaps mitigated by the increase in the number of trips. Boarding activity is strong in the south part of Seaside, particularly at McDonald’s (also seen on Route 20).
- **Pacific Connector (Astoria – Seaside – Cannon Beach – Manzanita)** - This route has good productivity (10.6), though slightly lower ridership and productivity in summer (8.3 boardings per service hour). Late afternoon ridership was particularly strong, indicating possible demand for another afternoon trip. On-time performance degrades on summer weekends – indicating potential need for different summer and/or summer weekend schedules. Midday northbound demand falls off in Cannon Beach but remains strong between Seaside and Astoria.
- **Route 20 (Seaside – Cannon Beach, Weekday)** – Productivity is reasonable (9.7 boardings per service hour), though lower in summer (7.4) partly due to more trips (the former Route 101 Express pattern was folded into this route between the May and August surveys). In addition, seasonal weekday Route 21 (see below) is somewhat duplicative. The 6:00 am trip doesn’t perform well (could consider having service start later), but the 7:00 pm trip looks strong (indicating potential demand for later evening service). On-time performance worsens in summer. While there is some demand to Seaside Hospital, ridership is relatively low for a significant activity center. Similar to Route 101, boarding activity is stronger in the south part of Seaside.
- **Route 21 (Seaside – Cannon Beach, Weekend)** – Productivity is good (10.3 boardings per service hour) in the May survey but falls to 4.6 in the summer survey. The route ran slightly late in the May survey, but had severe on-time performance issues in the summer survey. For example, the 3:55 pm departure from Seaside arrived in Cannon Beach 21 minutes behind schedule, and missed its local run within Cannon Beach.
- **Route 21 (Cannon Beach local service; summer weekday only)** – Productivity is very low on this route (2.6 boardings per service hour). As noted for Route 20, there is some duplication in local Cannon Beach service on summer weekdays between this route and Route 20. The surveys indicated some on-time performance issues.
- **Seaside Trolley (Seaside local, Summer only)** – Productivity was reasonable (9.1 boardings per service hour).

## AGENCY ASSESSMENT

SETD is organized into six divisions, all of which are overseen by an Executive Director and the Board of Commissioners. SETD employs 40 people, of which 31 are full-time permanent employees. The Operations Division is the largest division, with 17 employees—15 of whom are bus operators. As of July 2015, SETD has been hiring additional administrative and operations staff. Staff are non-union. SETD has undertaken a wage study to determine if pay levels meet cost of living and skills required metrics, and recently began providing most operators with official lunch breaks.

## Budget

SETD’s adopted FY 14-15 operating budget is \$3.26 million, which is slightly higher than the FY 13-14 budget of \$3.20 million. SETD collects property taxes, which make up about a quarter of its revenues.

**Figure 4-11 SETD Funding Sources and Expenditures**

Primary funding sources	Primary expenditures
<ul style="list-style-type: none"> <li>▪ Property tax (26% of total revenues)</li> <li>▪ Beginning Balance (26%)</li> <li>▪ FTA 5311 Rural Operations (14%)</li> <li>▪ Fares (7%)</li> <li>▪ State timber revenue (5%)</li> <li>▪ ODOT Special Transportation Fund/Special Transportation Operating funds (4%)</li> <li>▪ FTA 5339 Bus and Bus facilities (4%)</li> <li>▪ FTA 5311(f) Intercity grant (3%)</li> <li>▪ ODOT Drive Less Connect (3%)</li> <li>▪ FTA 5310 Preventive Maintenance / Vehicles (2%)</li> <li>▪ Miscellaneous (5.9%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Wages and benefits (36%)</li> <li>▪ Fuel (7%)</li> <li>▪ Vehicle maintenance and repair (3%)</li> </ul>

## Fare Structure

Given its large service area, SETD utilizes a tiered fare structure based upon distance traveled (Figure 4-12). SETD does not issue transfers. The agency does not offer a senior or disabled single-ride reduced fares. Regional Connector Passes for regional travel were introduced after a Northwest Connector study in 2013. The five transit agencies that comprise the partnership implemented a 3-day and 7-day visitor transit pass.

**Figure 4-12 Fare Structure for General Passengers**

Fare Type	Fare	Routes
Single Ride - Cash	\$1.00	10, 11, 15, 20, 21, 101/Pacific (Within Astoria/Warrenton or Gearhart/Seaside), Seaside Streetcar Trolley
Single Ride - Cash	\$3.00 - \$8.00	101, Lower Columbia Connector, Pacific Connector
Single Ride – Tickets	\$1 increments	The Transit Center sells bus tickets that can be used as cash aboard vehicles
Day pass	\$5	Unlimited rides for the day
Month pass	\$45	Monthly unlimited pass; tied to calendar month
Annual pass	\$495	Annual unlimited trips
Connector 3- Day Passes	\$25	Good for one trip to the coast from Portland or the Albany/Corvallis, area, one return trip, and unlimited travel in Clatsop, Tillamook, and Lincoln Counties (from Astoria to Yachats)
Connector 7- Day Passes	\$30	Good for one trip to the coast from Portland or the Albany/Corvallis, area, one return trip, and unlimited travel in Clatsop, Tillamook, and Lincoln Counties (from Astoria to Yachats)

Several types of pass discounts are available for eligible riders, including individuals who are 60 years of age and older, are a Social Security recipient, a Veteran, or a student. These individuals can receive a discount on monthly or yearly passes. Students can also receive pass discounts with proof of school I.D. Students of all ages are also eligible to buy quarterly passes. Lastly, youth aged 18 and younger can purchase a “Summer Fun Pass” for use between June 15<sup>th</sup> and September 6<sup>th</sup>. This information is summarized in Figure 4-13.

**Figure 4-13 Fare Structure for Special Populations**

Passes	Day	Month	Quarter	Year	Note
Elderly and Disabled	\$5.00	\$30.00	N/A	\$330.00	
Military	\$5.00	\$30.00	N/A	\$330.00	United States Military ID Needed to Purchase Pass
Student (Grades K-12)	\$5.00	\$30.00	\$30.00	\$330.00	Current School ID Needed to Purchase Pass
College Student	\$5.00	\$30.00	\$60.00	\$330.00	Proof of Enrollment for Current Term
Summer Fun Pass - For ages 18 and younger between June 15th and September 6th - \$30.00					

Passengers certified for ADA Paratransit pay twice the regular fare. Dial-A-Ride customers pay by distance. One-way trips from 0-10 miles cost \$8 and trips from 11-20 miles cost \$12.

## Vehicles

SETD operates service with 21 vehicles, 15 of which are used on its fixed-route services. Vehicles used on fixed-route services are between 30 and 35 feet in length, and have seating for up to 39 passengers. All

SETD buses are equipped to carry at least 2 wheelchairs, but can hold up to 3-4 wheelchairs depending on the vehicle. All buses have bicycle racks. Four vehicles will be replaced in 2015-2017 – these Chevrolet models have had continual maintenance problems and will likely not reach their useful life.

The Dial-A-Ride vehicles are cutaways that have a seating capacity of 12 passengers. Vehicle ages range from one to 13 years old, with an average fleet age of 7.5 years. Two vehicles are expected to be replaced in FY 2014/15.

## Facilities

SETD owns two facilities, one in Astoria and one in Warrenton. The Astoria Transit Center at 900 Marine Drive is the primary transfer location and includes park-and-ride spaces. An indoor waiting area and ticket window provide passengers with ticket sales and information. SETD’s operations center is located in Warrenton. All vehicles are stored and maintained at this location, and all operators report here for shifts.

SETD recently opened a transit kiosk in the Seaside Factory Outlet Center to provide ticket sales and customer information. The agency is considering locating a transit facility in Seaside, given growth in the area and strong ridership on Route 101.

## Technology

SETD employs the following technologies:

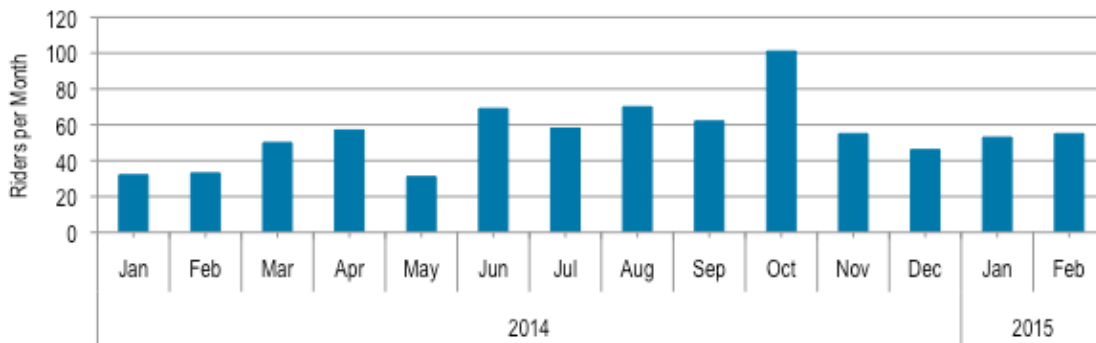
- Scheduling software – OBSS is used for Dial-A-Ride and ADA paratransit scheduling
- Web site – [www.ridethebus.org](http://www.ridethebus.org) includes system and route maps and schedules
- Trip planning support – use of General Transit Feed Specification means that SETD routes are available in Google Transit

A major next step for the agency is equipping vehicles with GPS to allow for real-time arrival information.

## Regional Connections

The primary goal of the Northwest Connector branding lies in fostering inter-county connections. The alliance coordinates monthly on scheduling and service coordination. Before August 1, 2015, riders had to transfer at either Westport or Clatskanie to switch from SETD to CC Rider. As shown in Figure 4-14, typically around 60 passengers per month transfer between systems. Starting in August 2015 riders transfer at a single, consistent transfer location in Rainier. Service frequency was reduced from three trips to two per day.

Figure 4-14 Transfers from SETD to CC Rider by Month



SETD also coordinates with TCTD buses; however, running times are several times longer than a similar trip via car, and advertised transfer times may be confusing to riders. For example, a trip from Astoria to Manzanita (departing Astoria at 8 am) would take 124 minutes versus 60 minutes via driving. The transfer time for the first trip of the day is shown as 9:20 am at Cannon Beach Family Market; however, that is the time when the TCTD bus arrives northbound at Family Market. The bus does not actually leave at 9:20, but at 9:40 am, arriving in Manzanita at 10:04 am. This trip, including SETD and a transfer to TCTD, would cost \$5.50 one way. The fare is cheaper if a passenger takes the one Route 20 trip per day that goes straight to Manzanita (\$4 one-way).

## Amenities

Many major stops have shelters, including at Clatsop Community College, Fred Meyer, Safeway, the social services office on Marine Drive, Seaside Cinema, Avenue A in Seaside next to McDonald's, locations in Cannon Beach, and Emerald Heights. SETD does not have a set schedule for maintaining and cleaning the shelters.

SETD is a flag-stop system, meaning passengers can hail the bus anywhere along its route and the bus will stop if it is safe to do so. Some scheduled stops do have sign poles with either the OXO, "The Bus" (the previous branding), or SETD's logo, but most do not have signs.

Current passenger schedules list a large number of stops, many of which are flag stops. Very low ridership stops could be removed from the schedule to streamline information.

## Marketing and Information

Currently SETD has a system schedule booklet and regional map, but no hand schedules with route-level maps. The route maps online show where the route goes in general, but not where it stops in specific cities. The schedules list stops but some may be difficult for new riders or people unfamiliar with the system to find, e.g., the "Hammond 4-Way" stop.

The schedules generally include a full round trip per column, then at one point halfway down the bus switches direction; highlighting that switch would be useful. For example, Route 20 in Cannon Beach lists stops at both "Midtown" and "Family Market" – these are actually the same location but are on different sides of the street. The casual user might not realize this.

## 5 COMMUNITY INPUT

SETD bus service is a community public good, therefore it must travel when and where people need it to be useful. Input was gathered from current riders, stakeholders, and the general public, as summarized in Figure 5-1.

**Figure 5-1 Summary of Community Input**

Time Frame	Project Phase	Information Presented	Outreach Tools
April-May 2015	Outreach & Data Gathering	<ul style="list-style-type: none"> <li>Project overview and information gathering</li> </ul>	<ul style="list-style-type: none"> <li>On-board rider survey</li> <li>Community survey</li> <li>Stakeholder meetings</li> </ul>
June-July 2015	Existing Conditions	<ul style="list-style-type: none"> <li>Community overview</li> <li>Market analysis</li> <li>Existing services</li> </ul>	<ul style="list-style-type: none"> <li>On-board rider survey</li> <li>Mobile outreach events</li> </ul>
December 2015	Goals and Service Opportunities	<ul style="list-style-type: none"> <li>Goals</li> <li>Initial service opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Community survey</li> <li>Mobile outreach events</li> </ul>
June 2016	Long-Range Comprehensive Transportation Plan (LRTCP)	<ul style="list-style-type: none"> <li>Final Plan: Service, capital, and transit-supportive elements</li> </ul>	<ul style="list-style-type: none"> <li>Open houses</li> </ul>

### STAKEHOLDER OUTREACH

Four meetings plus additional phone conversations were held with community organizations, government agencies, and non-profits.

For additional analysis on community outreach and findings, see Volume II, Sections D, and I

### Key Findings

- In general, stakeholders appreciate the value of SETD services. The bus is generally seen as something used by those who have no other transportation options.
- For many major employers, bus service is not really feasible given shift times and overcoming the culture of driving in Clatsop County.
- Clatsop Community College is a major source of ridership. Since 90% of students are also working, many take evening classes running until 9 pm. The MERTS campus used to be served and CCC is interested in reinstating service.
- Awareness of when and where service runs would be hugely beneficial as starting point.
- Access to transit hampered in developing areas of the county (Ensign Lane / Huckleberry area) by lack of sidewalks.
- Service takes too long compared to driving.
- Astoria is compact but has major topographic challenges (very steep hills) making walking to transit difficult for older adults and people with disabilities or with strollers/packages.

## Sunset Empire Transportation District

- Parking challenges in Cannon Beach mean leaders are interested in maximizing transit usage; Cannon Beach has been a strong supporter of transit.
- The labor market of the region is not the typical 9-5 group. Hotel workers may start very early in the morning while restaurant and bar workers end shifts late at night.
- In Seaside, a large percentage of the homes closer to the beach are second homes that are not occupied year-round. Most people who reside in Seaside live east of U.S. 101. Over time, the eastern part of the city will likely develop more; for example, the local school will be relocated to the east and higher part of the city to be out of the tsunami zone.
- Stakeholders generally agreed that hourly bus service frequencies are adequate for a community of Clatsop County's size.
- Lack of affordable housing in employment centers like Cannon Beach and Seaside mean people must commute from Astoria/Warrenton/Hammond to work.

## Opportunities

- Increase school district transportation, especially for after school events when no yellow bus service is available (5:30-6:30 pm).
- Work with Clatsop Community College to implement a Universal Transit Pass program for students and staff, similar to the Tongue Point Job Corps agreement. Move the CCC stop to the corner of 16<sup>th</sup> and Lexington Streets to avoid a hairpin turn and steep grade navigating the campus parking lot. Match Route 10/101 times to class start (8 am) and end times (9 pm). SETD should send a representative to CCC's fall orientation.
- Post real-time passenger information at major stops (Transit Center, CCC). Get WiFi on buses.
- Enhance bus stop security with better lighting.
- During roadway construction, great opportunity to expand sidewalk, bicycling, and transit infrastructure.
- Consider a parks shuttle that, for example, shuttles people back and forth between each end of the Fort to Sea trail.
- Expand RidePal.
- Make the monthly pass tied to the date of purchase, not the calendar month.
- Conduct more outreach to human services agencies and employers to promote transit. Memorial Hospital plans to expand and parking is tight – this agency might potentially be interested in a pass program. Stakeholders felt many employers in Seaside and Cannon Beach would be willing to provide employees with bus passes. Due to labor shortages, some employers are already paying for peoples' driving mileage to ensure enough staff.
- Many stakeholders noted the need for service to run until at least 9 pm. *Note: As of August 2015, service now runs until 9:50 pm on Route 101 (last trip leaving Seaside at 8:47 pm), Route 10 runs until 9:12 pm (last trip from Astoria to Warrenton at 8:37 pm), and Route 20 runs until 8:55 pm (last bus leaving Cannon Beach at 8:37 pm).*
- Implement park-and-ride facilities in Seaside (north end and south end), and at the U.S. 26 interchange.
- Create a year-round system map and information and a seasonal version.
- Promote Route 10 as a tourism route as it goes all over the city of Astoria.

## SETD STAFF CONVERSATIONS

The project team met with bus operators and SETD staff to understand operational issues and opportunities as well as ideas for operation of SETD as an agency.

### Key Findings

- Route 101 did not yield much ridership from Seaside Providence Hospital. *Note: Route 101 no longer deviates into the hospital during its first run of the day.*
- Route recovery time is often eaten up during summer due to traffic on Routes 10 and 101.
- Speed bumps in Sunset Beach and Clatsop Community College parking areas are hard on the buses and passengers. A shelter is needed at Sunset Beach.
- Paratransit demand continues to climb.
- System materials need to be comprehensible for those who do not speak English or those who do not read.
- Need real-time arrival information at the Transit Center.

## RIDER SURVEY

An on-board survey conducted in May and July resulted in 228 total responses. Data collected included rider demographics, travel patterns, and customer satisfaction.

### Who are SETD's Riders?

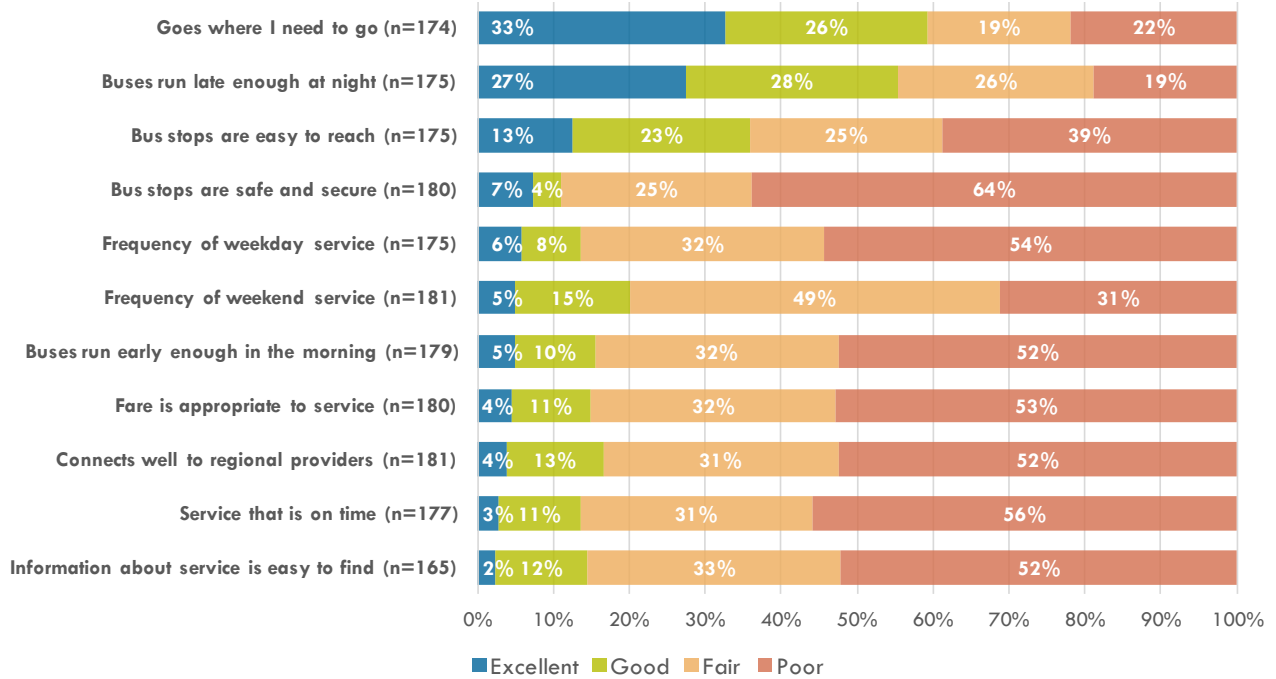
- |                       |   |
|-----------------------|---|
| <b>Demographics</b>   | <ul style="list-style-type: none"><li>▪ Gender: 48% female, 41% male</li><li>▪ Ethnicity: 65% white, 17% two or more; 10% Hispanic/Latino</li></ul>   |
| <b>Socioeconomics</b> | <ul style="list-style-type: none"><li>▪ Employment status: 38% employed full-time, 18% part-time</li><li>▪ Income: 31% below \$10,000; 27% between \$10,000-\$14,900</li></ul>  |
| <b>Transportation</b> | <ul style="list-style-type: none"><li>▪ Driver's License: 63% have no driver's license</li><li>▪ Vehicle Availability: 63% have no working vehicle</li></ul>  |
| <b>SETD Usage</b>     | <ul style="list-style-type: none"><li>▪ Access to bus stop: 85% walk to and from the bus stop</li><li>▪ Frequency of use: 66% use SETD 3-5+ days per week</li><li>▪ Fare: 62% paid a cash fare; 21% used a monthly pass</li></ul> |

### Customer Satisfaction

Overall, respondents are happiest with bus route coverage and service span in the evening—these two responses got the most “excellent” rankings (Figure 5-2). More than half of those responding to each service evaluation topic, however, ranked as “poor” the service’s bus stop safety, frequency of weekend service, early morning service, fare, regional connections, on-time performance, and availability of information. Including “fair” rankings, the biggest areas for improvement are bus stop safety and security and weekday service frequency.

Sunset Empire Transportation District

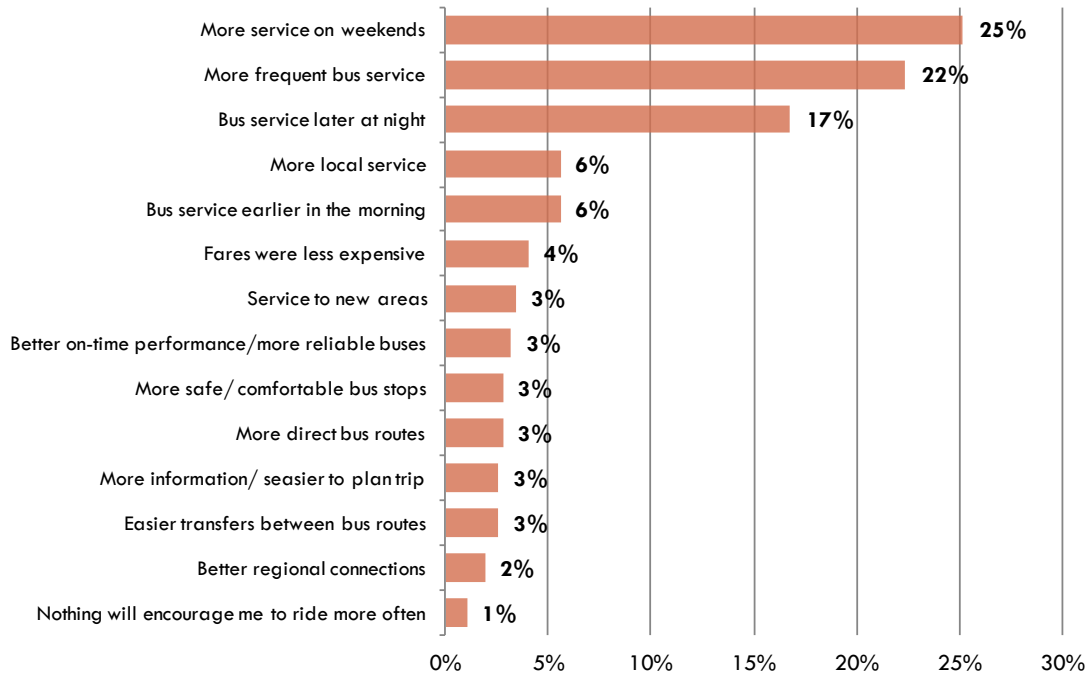
Figure 5-2 Satisfaction with Transit



Q16: Please rate the following items about transit in your area; non-responses removed.

The next question asked people to cite their top service improvements (Figure 5-3). More service on weekends and increased frequency were the top two requests, which is consistent with the items ranked poorly in the previous question.

Figure 5-3 Top Service Improvements Requested by Respondents



Q17: Please consider the potential service improvements shown below and select up to 3 that would help you choose to ride transit more often. n = 179 with 465 selections; non-responses removed

## COMMUNITY SURVEY

A primary goal of SETD is to increase ridership and better serve community needs. A community survey was distributed in May 2015 to gather information on peoples' opinions about transit.

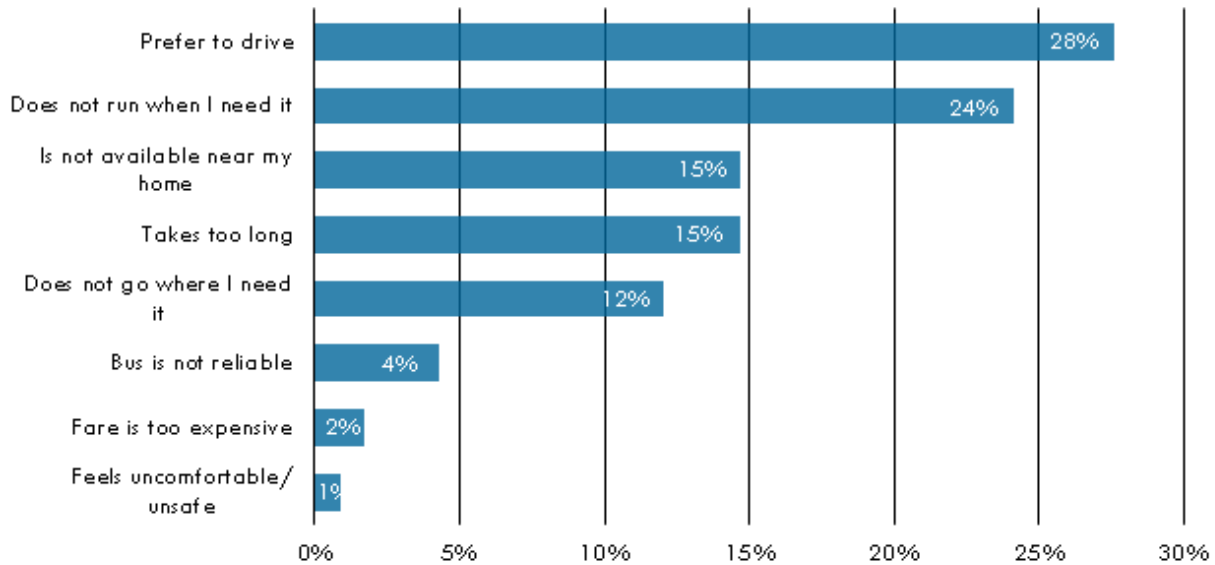
### Transit Usage

More than half of respondents reported having taken transit in the past year. Of those people, nearly half took SETD service. More than 25% used TriMet service in the Portland area, and nearly 21% used Northwest Point service (e.g., Astoria – Portland).

### Attitudes Toward Transit

Respondents gave many reasons why transit does not currently work for them (Figure 5-4). The top response (28%) is that respondents simply prefer to drive; this is not surprising in many communities. However, nearly as many people (24%) responded that transit does not run *when* people need it. Service also takes too long or does not go *where* people need it to.

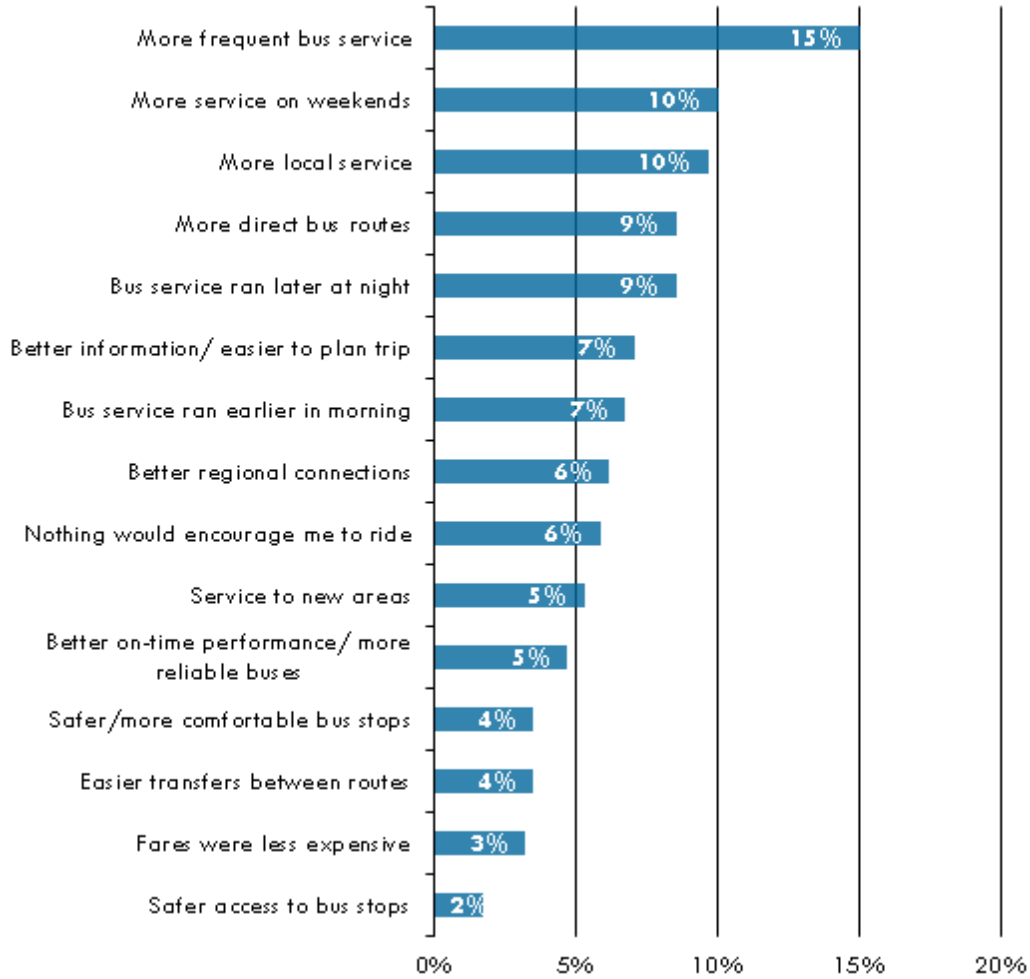
Figure 5-4 Reasons why public transportation does not meet travel needs.



Q9: Why isn't public transportation a good option for you? (n=142)

The most popular service element that would encourage respondents to try public transportation or use it more often is more frequent bus service (Figure 5-5), which is consistent with the complaint that service does not run when it is needed. More weekend and local service as well as more direct and later service were also priorities for respondents.

Figure 5-5 Service elements to encourage non-riders to try public transportation or use it more often.



Q10: What would encourage you to try public transportation, or use it more often? Non-responses removed. (n=142)

Respondents were asked when service should start and end. Nearly 40% of respondents said service should begin at 6:00am, which is when some SETD service does start on weekdays. However, respondents either were not aware of it, or the routes that serve them still may not arrive at their destination as early as required. Another 22% stated that morning service should begin at 5:00 am.

Of those that said later service would encourage increased ridership, about 60% of respondents said service should end at 10:00 pm or earlier (SETD has since extended service hours until nearly 10:00 PM on some routes). Nearly 40% of respondents said service should continue until 11:00 pm or midnight.

## EXISTING CONDITIONS OUTREACH

Staff from the project team and SETD gathered input from the general public at four locations throughout the county on June 19-20, 2015. Stations showing project information, community demographics, and service maps were set up in places where people already frequent, including:

Passerbys were asked about public transportation needs, familiarity with SETD service, the role of transit in the community, and desired service improvements (for those who currently ride). A mix of both riders and non-riders gave feedback.

## Sunset Empire Transportation District

Figure 5-6 Outreach events drew both riders and non-riders to offer opinions on public transportation needs



### Key Findings

- Respondents either take SETD today and highly value it or do not take the bus but feel it is an important part of the community.
- Growth in Knappa and Svensen could support transit.
- Service should run later – e.g. the Rite Aid in Warrenton is open until 9 pm. On weekends, service should run until 7 or 7:30 pm.
- More frequency needed on weekend service.
- Having a big break in the Route 21 and Pacific Connector services midday on weekends hurts business since this is a key shopping time.
- Fares seem inequitable. Seaside to Cannon Beach costs \$1, but Sunset Beach to Fred Meyer costs \$2.
- Buses to Cannon Beach need to arrive before normal working hours and leave after stores close.
- Real-time information is needed along with higher visibility stops and information signs. Larger shelters are needed at places like McDonald's in Seaside.
- People are confused by the SETD acronym; sounds similar to the area recreation district.
- More access is needed to schedules and service information.

## GOALS AND SERVICE OPPORTUNITIES OUTREACH

Three outreach strategies were used to obtain input from transit riders and the general public on service opportunities and goals:

- An on-board survey of riders conducted by SETD staff during the weeks of December 7 and 14, 2015
- An online survey publicized and distributed to members of the general public in the SETD service area between December 14-28, 2015
- Outreach events conducted at several locations in the SETD service area on December 11-12, 2015

Figure 5-7 Community Event Photos



## Key Findings

The general public and rider surveys differed on a number of important characteristics. In general, riders placed a higher priority on local improvements while the general public placed higher priority on regional improvements:

- **Rider Survey:** Riders were primarily concerned with filling in specific *local* service gaps.
  - Shopper shuttles were given a high priority as a possible service enhancement.
  - Increased service in Seaside and Astoria was given high priority.
- **General Public Survey:** The general public was primarily concerned with *regional* coverage and transit performance.
  - The performance and availability of regional service were key priorities of respondents.
  - General frequency, time span, and reliability improvements were prominent desires among respondents.
- **Community Outreach:** Non-riders were particularly interested in learning about the bus system in general, highlighting the need to make service consistent and easy to understand and communicate. Riders had a variety of opinions on service options; in particular:
  - Riders were supportive of plans for later evening service.
  - Riders were generally supportive of *well-timed* transfers.

## 6 COMMUNITY TRANSPORTATION NEEDS

The existing conditions analysis, system assessment, and wealth of stakeholder and community input reveals the following transportation needs.

### TRANSIT MARKETS

- There is general consensus among stakeholders that current service attracts lower-income individuals/households and those that do not have other transportation options.
- A high share of riders do not have a working vehicle in their household (about a third in the summer survey and over 60% in the spring survey).
- Most riders are frequent riders who are employed full or part-time.
- The community's transit needs are very different in the summer in terms of travel patterns and the hours of service. In particular, later service is needed – until 9 or 10 pm or later.
- Residents are open to trying transit—a quarter of residents who responded to the community survey have used TriMet service in the Portland area and 20% have used Northwest Point—and expressed a willingness to take local services along the coast.
- Head Start on Alameda Avenue in Astoria needs service.

### GEOGRAPHIC

- Topography and local stop access are a barrier to those unable to walk longer distances, e.g., seniors.
- Service is used for many in-town trips (e.g., within Astoria, within Cannon Beach, etc.)
- Non-Riders are interested in regional service
- Veterans need to get to the Veteran's Administration (VA) hospital in Portland for medical appointments; these trips are currently served by the Disabled Veterans of America (DAV) van, but there are scheduling challenges. Veterans in Tillamook County also need to get to Camp Rilea.
- There is a need for medical trips to access to specialists located outside of the county, e.g., in Longview and Portland.
- Astoria:
  - The middle of Astoria is not well covered, e.g., north of Niagara Avenue and south of northern W. Marine Drive, and stop access is challenging due to steep topography.
  - Service misses major destinations on weekends, e.g., Safeway in Astoria.
- Seaside:

- The southwest portion of Seaside, e.g., west of Necanicum Drive and south of 1<sup>st</sup> Street where there are many origins and destinations, is not served.

## TEMPORAL

- Residents desire more frequent service and weekend service
- Nighttime service is needed on weekends.
- Lack of evening hours are key to serve low-income jobs.
- More frequency is needed particularly on Route 101.
- More frequency is needed in Warrenton. This is in part an issue of marketing and schedules rather than the actual number of trips. Regular passengers realize that two routes serve Warrenton-Hammond, but several members of the public requested more service to that community, so some people may not realize this. According to stakeholders, Warrenton-Hammond contains a number of low-income housing areas, partially resulting from housing price increases in Astoria. Ideally the Route 10 trips through Warrenton-Hammond could also be branded as Route 15 so passengers understand they can board either bus.
- Related to Route 21, stakeholders stated that Cannon Beach is becoming a year-round destination and that such a long break in weekend service during peak shopping times may dissuade transit travelers.
- The long break in Pacific Connector service should be closed.
- For Seaside residents, the first trip of the day leaving Seaside gets people to Midtown in Cannon Beach at 9:18 am. For stores that open at 10 am, employees must typically report at 9 am, therefore the first trip of the day may be too late for employees to use.
- Cannon Beach employees often get out of work at 10:30 pm-Midnight.

## ORGANIZATIONAL/COORDINATION

- Uses that have located away from major transit corridors require significant deviations and increase travel time for all riders.
- It is necessary to get multiple services to communicate/coordinate and prioritize improvements to the built environment – sidewalks and bike access.
- Transit is not always “at the table” during the development process.

## OPERATIONAL

- On-time performance a major passenger priority; summer congestion along U.S. 101 and crossing the Youngs Bay Bridge has major impacts on reliability.
- As a tourism-focused transit provider, SETD service varies on weekdays and weekends and on and off season. The many route variants and name changes between weekday, weekend, and seasonal service may unnecessarily increase system complexity and the community’s ability to understand how to ride the service.
- Cost is an issue for human service agencies; need to identify opportunities for cost sharing.
- Fare equity is an issue. Zones work for longer-distance connections like Seaside-Astoria but for example community members and/or riders felt that fares should be less expensive

for a relatively short-distance regional trips between Sunset Beach and Warrenton trip, or for short local trips such as within Cannon Beach.

- Route 21 and Pacific Connector run on top of each other in Cannon Beach on weekends, duplicating service.
- Route 21's weekend service pattern in which some trips serve Seaside and some do not are confusing.
- Better transfers are needed between Route 10 and 101 rather than relying upon radio communication.
- Route 101's travel time is degraded by its many deviations into local service.
- Route 15 operates at very irregular intervals due to its tie to the Lower Columbia Connector schedule.

## CAPITAL

- There is a need for signed stops, shelters at major stops or at stops far from a front door, and lighting and security at some stops
- A transit center is needed in Seaside
- Speed bumps at Sunset Beach and Clatsop Community College are a comfort issue; improvements are needed.
- There is a desire for high-quality vehicles. For example, it is difficult to see out of the front of certain vehicles.
- Current vehicles are difficult for those with mobility impairments or older adults to board, and deploying the lift can take 2-3 minutes
- There is a need to improve radio interoperability with TCTD and CC Rider

## INFORMATION & MARKETING

- Lack of information and marketing is seen as a major barrier. Marketing improvements are needed to make the system more “legible.”
- More detailed route maps are needed to convey how the system operates.
- People do not know where the bus runs or where it stops. There is a need for more stop poles and/or more fixed stops to identify where transit runs on the ground (see stop infrastructure). Signs do not include schedules. Stops and shelters are an effective marketing tool for transit.
- Printed information is important. Clatsop County communities are not the “big city” – people still use the library, do not have smart phones, etc. Do not take printed materials for granted.
- Real time information is highly desirable.
- People are unaware of ADA paratransit or even what it is.

## SERVICE OPPORTUNITIES

During the past year, SETD has already implemented a number of changes desired by staff, stakeholders, and the public – e.g., increasing frequency on Route 101, extending evening hours on key regional routes, conducting a wage study, and instituting driver lunch breaks.

## Sunset Empire Transportation District

Opportunities identified through the analysis and community and stakeholder outreach conducted as part of this task include:

- There is a general consensus is that there is an opportunity to make transit more attractive, e.g., based on the cost of driving (high gas prices), but that better information and marketing is the major barrier.
- Frequency is important, but there is a general consensus is that hourly service would be sufficient given community density.
- Increased school transportation (high school)
- Better timed schedules to major destinations, e.g. Clatsop Community College
- More convenient transfers, especially between Route 10 and 101.
- Create safer crossings at major stops such as along U.S. 101 and U.S. 30
- Provide a consistent location for transfers to Tillamook County Transportation District
- Expand partnerships similar to Tongue Point’s pass program to Clatsop Community College, Columbia Memorial Hospital, other major employers
- Improve marketing and providing schedules to present SETD information regularly around community
- Seaside Hospital was identified as a key destination in the community survey, but has relatively low ridership, indicating there is an opportunity to better market service.
- Consider renaming the system. There is confusion with the Sunset Empire Recreation District. People are also not sure what service area “Sunset Empire” covers.

## 7 GOALS & SERVICE PRINCIPLES

Each community has different goals that affect the provision of transit and other public services. Running every type of transit service throughout Clatsop County is neither financially possible nor desired. Instead, the priorities of the community must be used to decide how important public transit stands in relation to other services and what neighborhoods and markets transit should serve. Establishing service design principles will also help SETD explain service decisions to the public.

For additional details regarding goals and objectives, see Volume II, Section K.

### DEFINITIONS

Goals and objectives are defined as follows:

- **Goals** establish the overall policy direction and organizational philosophy. These are typically value statements.

**Objectives** offer a means to meeting a goal. They are typically action-oriented strategy statements and should be understandable, specific, attainable, and measurable. Objectives can be met through a variety of actions. For example an objective to reduce transit travel time can be achieved by eliminating route deviations, providing more direct service, traveling on higher speed roads, investing in traffic congestion relief solutions, and/or giving transit a priority at congested intersection.

### PROPOSED GOALS AND OBJECTIVES

Based upon public and stakeholder input, as well as feedback from the project advisory committee, the team created a list of service goals and objectives for SETD, shown in Figure 7-1.

Figure 7-1 Goals and Objectives

Goal	Objective	Highest Priority (Public Input)
<b>1. Efficiency:</b> Provide cost-effective public transportation <sup>2</sup>	A. Match service types to appropriate land use densities	
	B. Increase efficiency of transit services	#6
	C. Maintain efficient cost per service hour	
<b>2. Mobility:</b> Serve a wide range of mobility needs within budget constraints <sup>2,4</sup>	A. Provide service all day covering peak times for multiple job sectors.	#1
	B. Increase service on corridor segments serving local businesses	
	C. Accommodate seasonal demand with increased hours to serve nighttime travel	
	D. Provide weekend service covering major trip generators	#5
	E. Coordinate services with intercity providers	
	A. Increase access to transit for Clatsop County residents	#4

Sunset Empire Transportation District

Goal	Objective	Highest Priority (Public Input)
<b>3. Accessibility:</b> Ensure Service Accessibility <sup>4</sup>	B. Maintain lifeline service to rural areas of county	
<b>4. Reliability:</b> Provide reliable transportation <sup>6</sup>	A. Adhere to scheduled run times	#2
<b>5. Sustainability:</b> Compete with SOV travel and reduce vehicle miles traveled per capita <sup>5</sup>	A. Reduce travel time on high-ridership routes	
	B. Increase ridership on Primary Transit Network <sup>7</sup>	
	C. Operate service on all primary transit networks with enough frequency to make transit a convenient option	#3
<b>6. Capacity:</b> Ensure sufficient system capacity <sup>4</sup>	A. Provide adequate seating capacity	
	B. Ensure adequate on-board bicycle capacity	
	C. Provide adequate ADA Paratransit capacity	

Notes:

<sup>1</sup>Standards presented in the performance metric column are preliminary thresholds of acceptable performance based on peer systems and industry norms. (To be refined in Memo #8)

<sup>2</sup>Represents a current SETD goal

<sup>3</sup>Represents a Title VI required measure (system-wide service standard per FTA Circular 4702.1B)

<sup>4</sup>Represents a Comp Plan/TSP goal

<sup>5</sup>Represents the goal associated with the Transportation Planning Rule (TPR) benchmark and SETD desire to increase ridership

<sup>6</sup>Represents a stakeholder goal / SETD concern

<sup>7</sup>Primary Transit Network, as defined in Memo #3, are the most densely developed corridors or have the highest future potential population/employment density, and/or connect the most significant transit demand generators. They have the highest potential to warrant investments in higher levels of transit service (e.g., more frequent or more direct service).

<sup>8</sup>Service cancellations can be eliminated or minimized through increased reliability and sufficient spare vehicles.

<sup>9</sup>A trip is considered “denied” if the trip cannot be accommodated one hour before or one hour after the desired time. Denials are not permitted under the ADA.




## SERVICE DESIGN PRINCIPLES

Defining service types leads to different performance measure categories, and design guidelines help justify service planning decisions.

### Service Types

SETD generally provides three types of service as shown in [Figure 7-2](#)~~Figure 7-2~~. Performance measures vary based upon types, because each one serves a different purpose and market. Some services are a hybrid of these service types, such as Route 20, which operates as a local fixed-route in Cannon Beach and Seaside, but provides intercity service between these communities. Constituents continually ask for service changes or justification for where routes run and when they operate. Creating a policy framework including service types and determining the coverage and productivity balance allow the transit agency to defend decisions and justify service design.


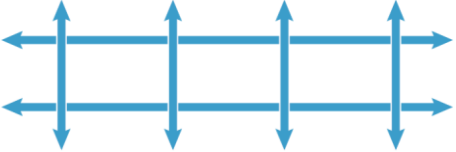
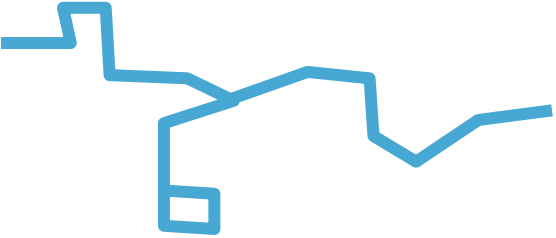





Figure 7-2 SETD Service Types

Service Type	Characteristics
<p><b>Intercity Routes</b></p> 	<p>Intercity routes operate along primary arterials. They offer relatively frequent, simple, and direct service. Intercity routes include Route 30, Route 101, portions of Route 20, and the Pacific Connector, which provides weekend service on Routes 20 and 101.</p>
<p><b>Local Routes</b></p> 	<p>Local routes serve major destinations but also run along local streets. Local routes often act as feeders, bringing people to hubs where they can transfer to Intercity routes. Productivity is usually lower than Intercity routes. Local service includes Route 10, Route 15, portions of Route 20, Route 21, and the Seaside Trolley.</p>
<p><b>Demand-Response Services</b></p> 	<p>Demand response service (Dial-a-Ride, ADA Paratransit) offers curb-to-curb service upon request. Demand response service operates within a geographically limited area, require advance reservations, and will pick up and drop off passengers anywhere within the defined zone.</p>

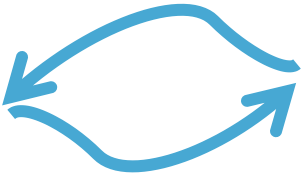


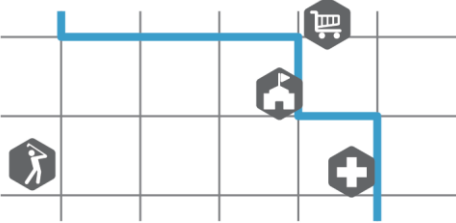


## Service Design Guidelines

Service design guidelines to provide an approach to structuring and evaluating services. In many cases, transit agencies find that over the years, land use decisions such as building a hospital or mall far from the center of town, or various requests from riders, cause a direct and simple route to become long and circuitous. When services underperform and a particular route warrants closer inspection, comparing the route design against these guidelines often helps pinpoint the reason why performance is suffering. These principles are summarized in Figure 7-3.

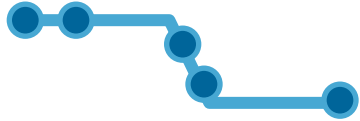
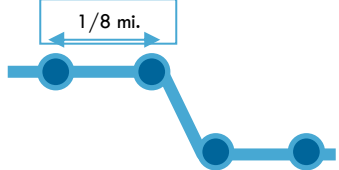




Figure 7-3 Service Design Principles

Principle	Benefit	Discouraged	Recommended
Service should be simple	Passengers can quickly and easily understand the service, where it goes, and the travel time.	 <p>Complex</p>	 <p>Simple and intuitive</p>
Routes operate along a direct path	Routes are easier to understand and navigate when they follow a direct line.	 <p>Circuitous, complicated</p>	 <p>Direct, easy to understand</p>
Minimize route deviations	Fewer directional changes make the route easy to understand and remember. It also reduces overall travel time.	 <p>Out of direction travel, with longer travel time</p>	 <p>Direct route, shorter travel time</p>
Operate major routes on arterials	Passengers have a good knowledge of major roads and use them for reference.	 <p>Travels slowly on local streets</p>	 <p>Travels on main roads with many destinations</p>

Sunset Empire Transportation District

Principle	Benefit	Discouraged	Recommended												
Routes should be symmetrical	A route that operates on the same street in both directions makes it easy for riders to return to their starting point.	 <p data-bbox="926 464 1157 493"><b>One-way service</b></p>	 <p data-bbox="1535 464 1766 493"><b>Two-way service</b></p>												
Routes should serve well-defined markets	Routes need major destinations to anchor them and attract riders.	 <p data-bbox="856 756 1257 786"><b>Serves areas with little demand</b></p>	 <p data-bbox="1478 756 1808 786"><b>Serves major destinations</b></p>												
Service should be well-coordinated	Coordination between different services minimizes redundancy, balances passenger loads, and ensures short transfers.	 <p data-bbox="926 1036 1188 1065"><b>Lack of coordination</b></p>	 <p data-bbox="1451 1036 1829 1065"><b>Service operates as a system</b></p>												
Service should be consistent	People can easily remember repeating patterns. Consistent schedules allow passengers to know when to catch a bus, without needing to remember the times for each trip.	<table border="1" data-bbox="894 1133 1203 1403"> <tr> <td>10:21</td> <td>10:36</td> </tr> <tr> <td>10:54</td> <td>11:09</td> </tr> <tr> <td>11:28</td> <td>11:43</td> </tr> </table> <p data-bbox="940 1425 1184 1455"><b>Irregular schedule</b></p>	10:21	10:36	10:54	11:09	11:28	11:43	<table border="1" data-bbox="1509 1133 1818 1403"> <tr> <td>10:30</td> <td>10:45</td> </tr> <tr> <td>11:00</td> <td>11:15</td> </tr> <tr> <td>11:30</td> <td>11:45</td> </tr> </table> <p data-bbox="1541 1419 1808 1448"><b>Consistent schedule</b></p>	10:30	10:45	11:00	11:15	11:30	11:45
10:21	10:36														
10:54	11:09														
11:28	11:43														
10:30	10:45														
11:00	11:15														
11:30	11:45														

Sunset Empire Transportation District

Principle	Benefit	Discouraged	Recommended
Space stops appropriately	Stop spacing needs to balance the needs of convenient access and reducing travel times. Stop spacing should be consistent and support the type of service being offered.	 <p data-bbox="898 506 1234 539"><b>Inconsistent stop spacing</b></p>	 <p data-bbox="1507 516 1822 548"><b>Consistent stop spacing</b></p>
Service design should maximize service	Cycle time <sup>1</sup> and frequency must be matched to make the most efficient use of revenue hours.	 <p data-bbox="919 753 1192 786"><b>Inefficient use of time</b></p>	 <p data-bbox="1486 753 1789 786"><b>Route maximizes service</b></p>
Match vehicle type to service type	Size vehicles according to ridership. Smaller vehicles may be better suited to operate on local streets.	 <p data-bbox="856 1075 1255 1107"><b>Vehicles not matched to service</b></p>	 <p data-bbox="1465 1075 1822 1107"><b>Vehicles matched to service</b></p>

Notes: [1] Cycle time is the amount of time required for a bus to complete a full round trip on a route, including layover and recovery time, and be able to start another round trip

## 8 THE FUTURE OF SETD ... AND HOW WE GET THERE

The structure of a transit system – where routes run, when they operate, at what frequency, etc. – is derived from the overarching goals adopted by the community. For example, questions of whether to focus a large percent of transit resources on trunk routes such as arterials versus circulating through neighborhoods can only be answered by determining what types of service matter most to Clatsop County residents, employees, and visitors. Throughout this 16-month project, the project team worked with a technical committee, ODOT, SETD staff, stakeholders, and the public to create a distinct set of goals and objectives for public transportation (Chapter 7), which led into creation of service options at the route and system level.

Successful transit agencies must continue to evolve service as land uses, travel patterns, customer needs, and industry standards change. The service recommendations described here lead SETD toward a transit vision that builds upon existing ridership and creates a robust network connecting the small urban clusters where SETD service is concentrated while also providing important regional connections to smaller, rural communities and adjacent counties. Like all public agencies, SETD faces financial constraints, therefore this memo prioritizes each option based on cost and benefit to the community to provide a long-term roadmap for SETD.

The evolution of service opportunities from concepts to recommendations can be found in Volume II, Sections H, J, and L. Route maps by phase can be found in Volume II, Section N.

### LONG-TERM SYSTEM VISION

Figure 8-1 illustrates the long-term (20-year) vision for SETD services on weekdays and weekends, which the bullets below summarize for each route or market:

- **Route 30 / Lower Columbia Connector:** Rebrand service as Route 30 Lower Columbia Connector. Provide a more robust four round trips per day (which enhance service to Svensen/Knappa in addition to Rainier) and develop a weekly shopping shuttle in Svensen/Knappa. Differentiate routes by listing the destinations on the bus head signs.

**Route 101 (Astoria-Seaside):** Minimize travel times (primarily through improving the directness of the route) on this regional, highly productive route to attract new riders.

- In Astoria, run along northern W. Marine Drive to the Transit Center, then operate a short round trip to Clatsop Community College. Eliminating the loop pattern in Astoria enhances legibility and provides opportunity for the bus to utilize U.S. Business 101 to avoid summer congestion on Youngs Bay Bridge. The northern W. Marine Drive routing means this detour will not skip any stops.
- Serve the developing Ensign Lane/SE 19<sup>th</sup> Street/SE Huckleberry Street area with local Route 15 Warrenton/Hammond rather than regional Route 101.

## Sunset Empire Transportation District

- In Seaside, operate bidirectionally on U.S. 101. Extend service beyond Avenue S in Seaside to a southern turnaround in the vicinity of Avenue U and Beach Drive (or a future, centrally-located transit center in Seaside).
- Run Route 101 at hourly headways all day.

**Route 20 (Seaside-Cannon Beach):** Operate bidirectionally on U.S. 101 through Seaside (no service on Necanicum Drive or Wahanna Road). Implement pedestrian improvements (sidewalk infill and pedestrian crossings of U.S. 101) to facilitate this change. A Seaside Circulator local route (see below) would provide local circulation, including along Wahanna Road and serving Providence Hospital. Develop Park & Ride facilities in the north and south parts of Seaside. (Seaside Cinema in the north side and a to-be-determined location in the south), with an eventual goal of identifying a single, more central transit center location. Improve consistency of schedule/passenger information and transfers to Manzanita.

**Cannon Beach – Manzanita:** Negotiate with Tillamook County Transportation District (TCTD) to operate the Manzanita – Cannon Beach portion of weekday Route 20 and the weekend Pacific Connector consistently. One provider, preferably TCTD, would serve all trips on the Manzanita connection on both weekends and weekdays. This would enable re-timing of weekday Routes 20 and 101 to provide shorter transfers in Seaside. Operate four trips per day between Manzanita and Cannon Beach.

**Route 10 (Astoria Local):** Break up into two short, focused routes. Serve eastern Astoria via 10 East, return to the transit center, then circulate through western Astoria on 10 West. Add service to the interior of Astoria, potentially in conjunction with new service on U.S. Business 101. Brand all Route 10 service in Warrenton/Hammond as Route 15. Consider viability of transitioning local Route 10 E/W to flex-route service, allowing deviations from the route.

**Route 15 (Warrenton Local):** Enhance this route to provide more frequent service to the developing Warrenton retail area. Decouple Route 15 from Route 30 with its own vehicle and operate as two loops: one loop running around Warrenton/Hammond and one loop running along the Ensign Lane/SE 19<sup>th</sup> Street/SE Huckleberry area including Costco/Walmart. Time transfers at Fred Meyer for service to Astoria via Route 101.

**New Seaside Local Circulator.** Develop a local circulator focused on resident and employee needs, with timed connections to regional routes running along U.S. 101. This would help accommodate growth that is expected to occur on the east side of the city.

**Seasonal Weekday Route 21:** Rebrand as Route 20, since Route 21 service duplicates Route 20 once each hour. Stagger Route 21 with Route 20 to provide even headways. [Work with Cannon Beach to evaluate adding a four-way stop sign at 1<sup>st</sup> and Hemlock Streets, which would improve pedestrian safety and traffic flow. Explore moving the Route 21 stop location serving Les Shirley Park to 1<sup>st</sup> and Beech Streets, with input from existing riders. This reduces running time to ensure a combined 20/21 stays on schedule.](#)

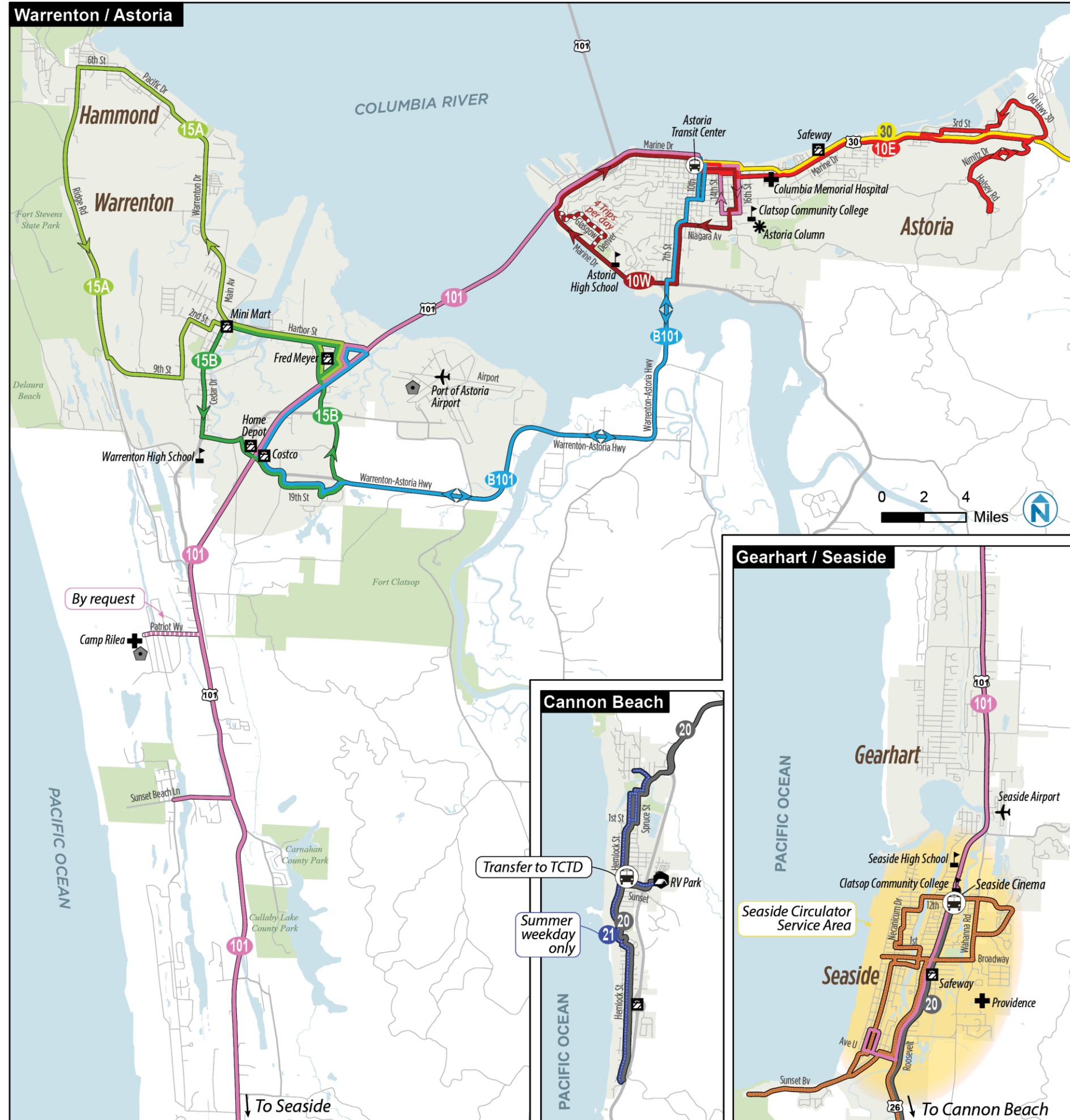
**Weekend Pacific Connector (including weekend Route 21):** Brand and operate the Astoria-Seaside and Seaside-Cannon Beach portions of the Pacific Connector as Route 101 (Pacific Connector) and Route 20 (Pacific Connector), respectively, using similar routing and stops on weekends as on weekdays. Weekend Route 21 would be rebranded as Route 20. Increase service frequencies to 8-10+ trips per weekend day. [Work with Cannon Beach to evaluate adding a four-way stop sign at 1<sup>st</sup> and Hemlock Streets, which would improve pedestrian safety and traffic flow. Explore moving the Route 21 stop location serving Les Shirley Park to 1<sup>st</sup> and Beech Streets, with input from existing riders. This reduces running time to ensure a combined 20/21 stays on schedule.](#)

**New Route/Service on Business 101.** Consider a new route to serve planned development in the Miles Crossing area and provide a more direct connection between Astoria and the Walmart/Costco area. This could be an extension/redesign of Route 15.

## Sunset Empire Transportation District

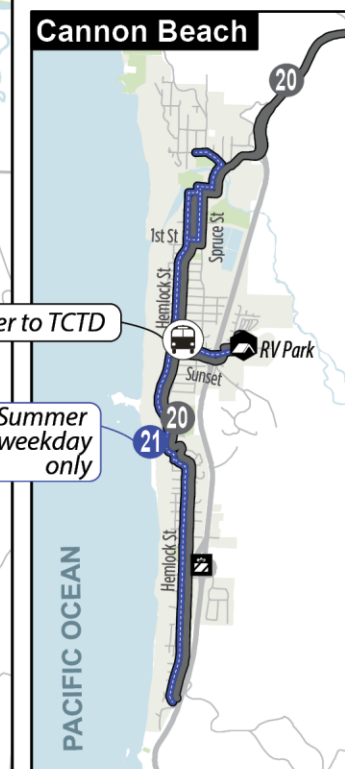
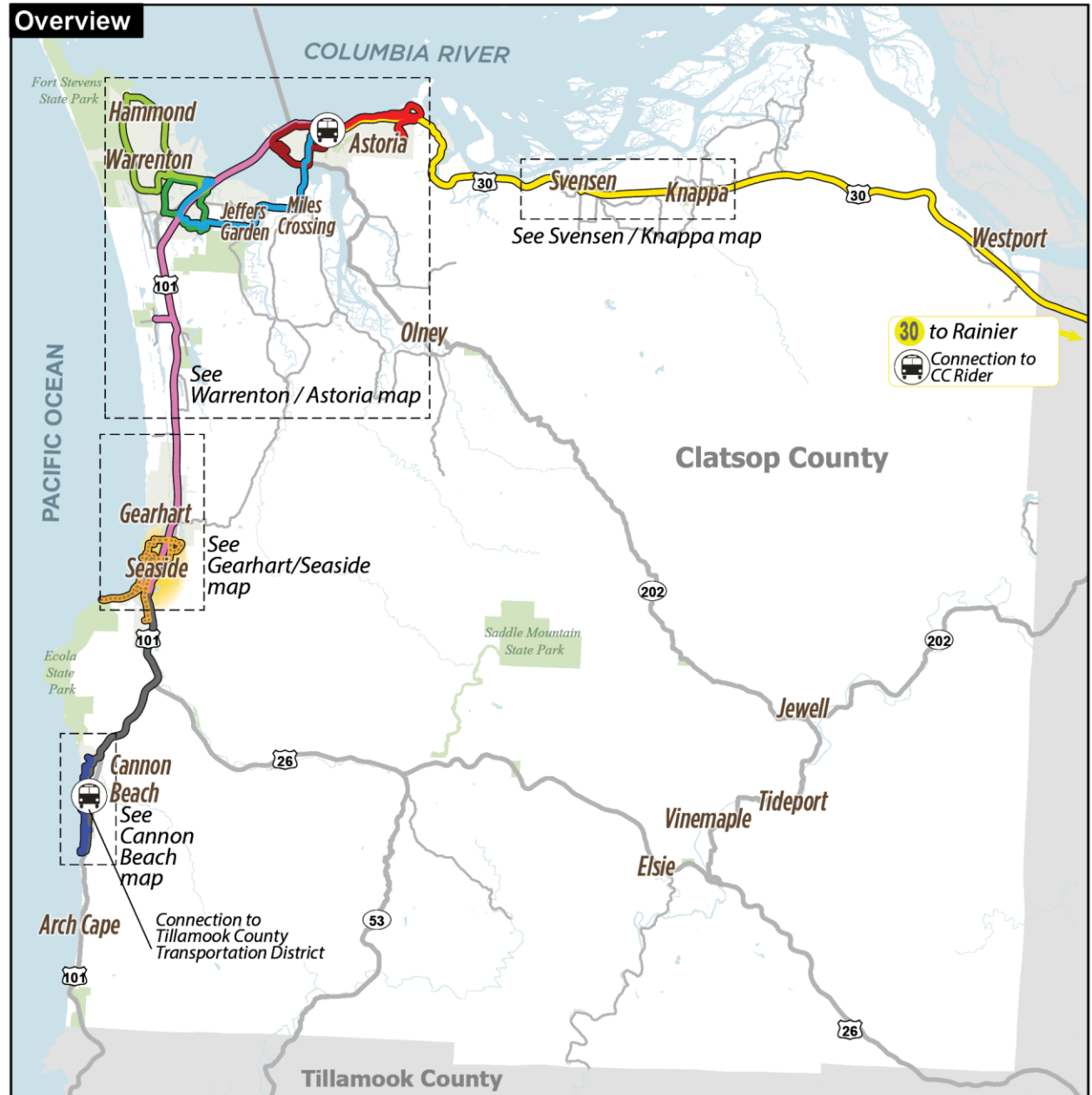
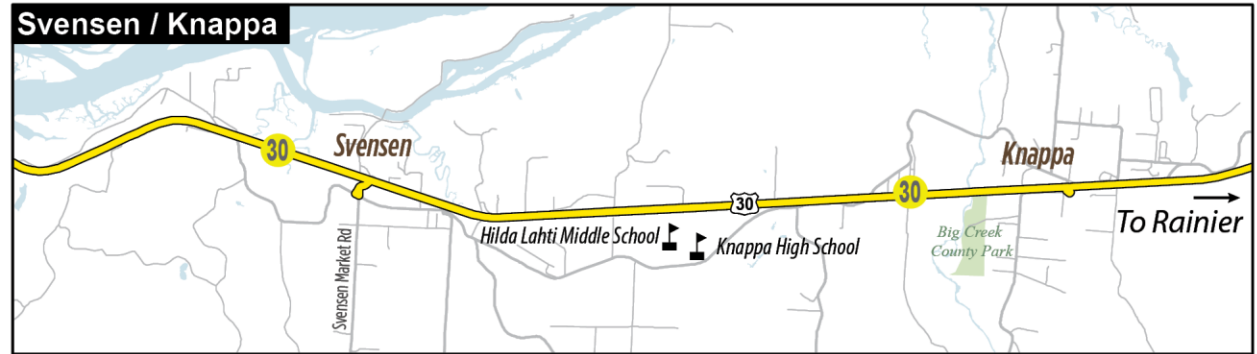
**Community Shopper Shuttles.** Communities support shopper shuttles on one or two days of the week to transport people to major retail or sometimes medical destinations. These shuttles can provide basic service to places not well-served by fixed-route, such as the interior of Astoria. These can be supported financially through partnerships with other organizations such as the Astoria Downtown Historic District Association, or the private market.

Figure 8-1 Long Term Service Vision



**Long Term Service Concept**

- Route 10 East
  - Route 10 West
  - 4 Trips a day
  - Route 15 A
  - Route 15 B
  - Route 20
  - Route 30
  - Route 101
  - Business 101
  - Seaside Circulator
  - Seaside Trolley Streetcar
  - Route 21 (Summer Weekday Only)
  - Transfer Locations
- Landmarks**
- Attractions
  - Education
  - Airport
  - City Boundaries
  - Medical
  - Shopping
  - Coast/National Guard



Sunset Empire Transportation District

Figure 8-2 Long-Term System Operating Plan

Route Number or Name	Weekday Span of Service	Weekday Frequency	Weekend Span of Service	Weekend Frequency	Areas Served
<b>Year-Round Service</b>					
10E – Eastern Astoria	5:45 a.m. – 10:00 p.m.	60 minutes	7 a.m.-10 p.m.	60 minutes	Transit Center, Tongue Point, Emerald Heights
10W – Western Astoria	5:45 a.m. – 10:00 p.m.	60 minutes	7 a.m.-10 p.m.	60 minutes	Clatsop Community College, Astoria interior
15A – Warrenton/Hammond Loop	6:00 a.m. – 10:00 p.m.	30 minutes	7 a.m.-10 p.m.	60 minutes	Warrenton, Hammond, Fred Meyer, Mini Mart
15B – Warrenton Retail	6:00 a.m. – 10:00 p.m.	30 minutes	7 a.m.-10 p.m.	60 minutes	High school, Walmart, Costco, NWSDS, Fred Meyer, Mini Mart
20 – Seaside/Cannon Beach	6:00 a.m. – 10:00 p.m.	60 minutes; 30 minutes peak	7:30 a.m.-10 p.m.	60 minutes	Seaside, Cannon Beach. Transfers to Manzanita
101 – Astoria Seaside	6:00 a.m. – 10:00 p.m.	60 minutes; 30 minutes peak	7 a.m.-10 p.m.	60 – 120 minutes	Astoria, Warrenton, Gearhart, Seaside, Cannon Beach
30 - Lower Columbia Connector	6:45 a.m. – 8:00 p.m.	4 trips per day + 2 short trips	6:45 a.m. – 8:00 p.m.	4 trips per day + 2 short trips	Astoria, Svensen, Knappa, Westport, Clatskanie, Rainier (Transfer to CC Rider)
Seaside Circulator	7 a.m.-10 pm	60 min	7 a.m.-10 p.m.	60 min	Seaside
Dial-A-Ride/ Shopper Shuttle	1 round trip per week	1 round trip	---	---	Svensen/Knappa Miles Crossing
<b>Seasonal Service (Summer only)</b>					
11	Based on cruise ship schedules				Astoria
21	11:00 a.m. – 6:00 p.m.	30 minutes	----	---	Cannon Beach
12	Based on cruise ship schedules				Astoria, Warrenton
Seaside Streetcar Trolley	---	---	11:00 a.m. – 8:00 p.m.	60 minutes	Seaside

Outreach on the service vision conducted during June 2016 in Astoria and Seaside was met with favorable reaction from the public and SETD staff.

## PLANNING TIME FRAMES

A phased plan to achieve the long-term vision within reasonable financial constraints resulted in four time frames for implementation (Figure 8-3). Any cost-neutral recommendations can be implemented in the Immediate/Near-Term time frame, while further improvements will require additional resources.

Figure 8-3 Planning Time Frames and Funding Targets

Time Frame	Years	Funding Level Target
Immediate/Near-Term	0 to 1 years: 2016 – 2017	Cost-Neutral / Near Cost-Neutral
Short-Term	2 – 4 Years: 2018 – 2020	Low Growth: \$200,000 - \$300,000
Mid-Term	5-10 Years: 2021 – 2026	Moderate Growth: \$400,000 - \$500,000
Long-Term	11-20 Years: 2027 – 2036	Flexible Service Plan - Not Financially Constrained

## IMMEDIATE/NEAR-TERM ACTIONS

The following cost-neutral items can be implemented within one year as they require no operating or capital funding.

### Route 101 Weekday

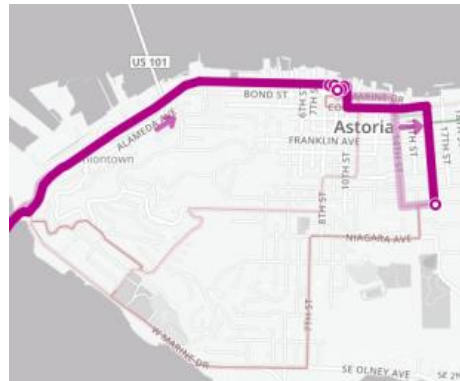
Entering Astoria, run Route 101 along northern W. Marine Drive to the Transit Center. Operate to Clatsop Community College and then back to the Transit Center, then proceed along northern W. Marine Drive back to Warrenton. This maintains direct service to Clatsop Community College and reduces service duplication with Route 10 (discussed below). Eliminating service on southern Marine Drive means that during congested summer months, Route 101 can travel via U.S. Business 101 into Astoria to enhance reliability.

Figure 8-4 Route 101 Immediate Actions

Existing Route 101 – Astoria



Route 101 – Astoria Immediate Term Recommendation



### Route 10 Weekday

Break Route 10 into two shorter routes serving specific markets. Route 10 East runs from the Transit Center through downtown Astoria, past Columbia Memorial Hospital, serves Emerald Heights, Tongue Point, and the residential Cedar Street area, then returns to the Transit Center. Route 10 West departs the Transit Center, travels through downtown Astoria then south to Clatsop Community College. The route serves Peter Pan and Short Stop, then travels via Marine Drive back to the Transit Center. On four trips

## Sunset Empire Transportation District

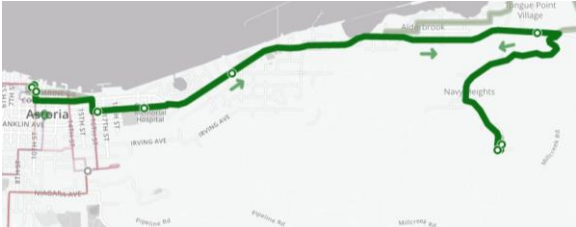
per day, Route 10W would serve Head Start located on Alameda Avenue. This reduces travel times for Astoria residents, provides more circulation through downtown, and serves a portion of Astoria's interior.

**Figure 8-5 Route 10 Immediate Actions**

Existing Route 10 (shown in red)



Route 10 East Outbound



Route 10 East Inbound



Route 10 West - Typical



Route 10 West Deviations to Head Start – approximately 4 times per day:



## Route 15

Both Route 15 and Route 10 serve the Warrenton/Hammond area, including Fred Meyer and the Mini Mart. Combined, the two routes provide 11 trips to Warrenton/Hammond. Have Route 10 show a Route 15 route sign when operating in Warrenton/Hammond, and public a combined Route 10/Route 15 schedule branded all as Route 15.

## Route 30 Weekday/Weekend

The term “connector” is used in any route that is part of the Northwest Connector network getting people to regional destinations. For this reason, the service along U.S. 30 is called the “Lower Columbia Connector.” Intuitive route names are based on the road they run on or a major destination, thus “Route 30” makes sense as the most logical route name. Append the Connector brand so the route becomes Route 30: Lower Columbia Connector, as CC Rider has already done in its schedules (Figure 8-6).

Figure 8-6 Sample CC Rider Schedule, Route 7

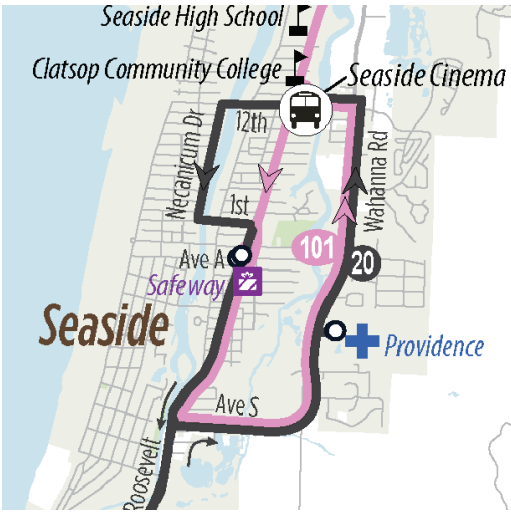
<div style="background-color: #0070C0; color: white; padding: 5px; font-size: 24px; font-weight: bold; display: inline-block;">7</div> <span style="font-size: 24px; font-weight: bold; display: inline-block; vertical-align: middle;">Lower Columbia Connector</span>						
Line 7 - Lower Columbia Connector SERVICE 7-DAYS A WEEK						
DEPARTURE TIMES TO ASTORIA TRANSIT CENTER				DEPARTURE TIMES TO PORTLAND UNION STATION/SW SALMON ST. and SW 6th AV.		
SW Salmon St/SW 6th Ave	Portland Union Station	Scappoose-NE 1st/Prairie	St Helens TC	Rainier TC	Clatskanie Safeway	Arrive Astoria TC
6:00	6:30	7:05	7:30	8:30	9:00	9:45
2:00	2:30	3:05	3:30	4:30	5:00	5:45
Astoria TC	Clatskanie	Rainier TC	St Helens TC	Scappoose-NE 1st/Prairie	Portland Union Station	SW Salmon St/SW 6th Ave
6:45	7:35	8:30	9:00	9:25	10:15	10:30!!
2:45	3:35	4:30	5:00*	5:20*	6:15‡	6:00* 6:30‡

## Route 20 Weekday

The portion of Route 20 that serves Necanicum Drive has very low ridership. Shift the route back onto U.S. 101. This allows Route 20 and Route 101 to operate in bidirectional loops in Seaside without missing any part of U.S. 101.

Figure 8-7 Route 20 Immediate Action

Existing Route 20 – Seaside



Route 20 – Seaside Route Recommendation



## Pacific Connector/Route 21 Weekend

Similar to Route 30, rebrand the Pacific Connector as Route 101: Pacific Connector so weekend and weekday service have consistent naming conventions. Rebrand Route 21 as Route 20 for the same reason. Without any new drivers, schedules for the two Pacific Connector and one Route 21 driver can be shifted to add a fourth trip to Pacific Connector and close the long midday gap in Cannon Beach on Route 21. Make Route 101/20 weekend routing consistent with weekday service and route buses along the Wahanna Road loop, serving Seaside Providence Hospital. Many Cannon Beach employees need to arrive at work before 9 am, but the first Route 21 of the day currently arrives at 9:15 am. Earlier weekend service is recommended in the mid and long-term, but Cannon Beach may be interested in implementing that recommendation in a shorter time frame.

## LOOKING AHEAD ... PRIORITIZATION & PHASING

Outside of the immediate terms steps SETD can take, achieving the community vision for transit involves additional operating and capital resources. Given SETD’s measured growth during the past few years (adding evening service, for example, on Routes 101, 10, and 20), service expansion and increased funding levels are viable assumptions. The project team and the Technical Project Advisory Committee discussed a series of service concepts once community outreach was complete. These concepts were also discussed with the public via mobile workshops, an online survey, and a rider survey. Based on the outreach outcomes, the service concept list was narrowed down to the top priority ideas and were fleshed out into concrete service recommendations including routing, scheduling, and capital requirements. The team created an evaluation framework and assessed how well each recommendation meets SETD’s six goals and 17 objectives. Based on these outcomes and expected funding levels, recommendations were phased into short (2-4 year), medium (5-10 year) and long (11-20 year) actions. Note that as is typical for a long-range plan, the long-term projects are not fiscally constrained.

Figure 8-8 displays these recommendations by phase, including a project code (for organizational purposes only), description, evaluation against goals, cost-benefit scoring, and overall priority. Since some recommendations are contingent upon one another, i.e. one cannot be implemented without another item first, some recommendations include multiple components affecting more than one route.

Sunset Empire Transportation District

Figure 8-8 Evaluation and Phasing of Service Recommendations

Project Code	Service Area Affected	Routes	Transit Markets / Benefits	Summary Description	SETD Goals & System Benefits						Costs		Evaluation / Phasing	
					1. Efficiency: Provide cost-effective public transportation	2. Mobility: Serve a wide range of mobility needs	3. Availability: Ensure service availability	4. Reliability: Provide reliable service	5. Sustainability: Compete with SOV travel times and reduce VMT	6. Capacity: Ensure sufficient system capacity	Operating Cost	Capital Cost (# of Buses)	Overall Rating: (Benefit & Cost)	Phase Assigned
1	Astoria, Warrenton, Hammond, Astoria-Seaside, Columbia/U.S. 30	101, 15A, 15B, 30	<ul style="list-style-type: none"> <li>Faster regional weekday service</li> <li>Added regional coverage</li> <li>More local service (Warrenton)</li> <li>More local service (Svensen/Knappa)</li> </ul>	<ul style="list-style-type: none"> <li>Costco/Walmart area moved from Route 101 to Route 15</li> <li>Route 101 extends to Avenue U in Seaside</li> <li>Route 15 runs hourly, 6 am-7 pm. Split into two short routes serving retail and residential areas.</li> <li>Route 30 to Svensen/Knappa service increases by 2 trips per weekday (4 total)</li> </ul>	+	+	+	+	+	+	\$\$\$	1	High	Short-Term
2	Astoria, Warrenton, Hammond	10E, 15A, 15B,	<ul style="list-style-type: none"> <li>Weekend service (new)</li> </ul>	<ul style="list-style-type: none"> <li>Route 15 operates Sat/Sun six times per day, 8 am-6 pm</li> <li>Route 10E operates Sat/Sun six times per day, 8 am-6 pm</li> </ul>	+	+	N	N	+	N	\$\$	0	High	Short-Term
3	Astoria - Seaside	101 / PC	<ul style="list-style-type: none"> <li>Weekend service (add frequency)</li> </ul>	<ul style="list-style-type: none"> <li>Add 2-4 Sat/Sun trips (6-8 total) Astoria to Cannon Beach</li> </ul>	N	+	N	+	+	N	\$	0	High	Short-Term
4	Svensen/Knappa	DAR	<ul style="list-style-type: none"> <li>Increase weekday accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Shopper shuttle pilot project</li> </ul>	+	N	+	N	N	N	\$	0	Medium	Short-Term
5	Astoria-Cannon Beach, Manzanita	20, 101	<ul style="list-style-type: none"> <li>Regional weekday connections</li> <li>Faster transfers</li> </ul>	<ul style="list-style-type: none"> <li>All Manzanita connections in Midtown Cannon Beach operated by TCTD</li> <li>Short (&lt;10 minute) transfers in Seaside for Route 101/20 passengers NB and SB</li> </ul>	+	+	N	N	+	N	\$	0	High	Mid-Term
6	Astoria-Seaside	101	<ul style="list-style-type: none"> <li>Regional weekday frequency</li> </ul>	<ul style="list-style-type: none"> <li>Add 3 trips to Route 101. Hourly departures from Astoria 6 am- 11 pm.</li> </ul>	+	+	N	N	+	+	\$\$	-	High	Mid-Term
7	Seaside	New Route	<ul style="list-style-type: none"> <li>Local service (new) on weekday/weekend</li> <li>More direct regional service</li> </ul>	<ul style="list-style-type: none"> <li>Create Seaside circulator. Run every 60 minutes 7 am-7 pm.</li> <li>Run Routes 20 &amp; 101 bi-directionally on U.S. 101</li> </ul>	+	+	+	N	+	+	\$\$\$	1	High	Mid-Term
8	Astoria, Warrenton	10E, 10W, 15A, 15B,	<ul style="list-style-type: none"> <li>Weekend service frequency (Warrenton)</li> <li>Weekend service frequency (eastern Astoria)</li> <li>New weekend service (western Astoria)</li> </ul>	<ul style="list-style-type: none"> <li>Add 5 trips to Route 15. Run hourly 8 am-6 pm</li> <li>Add 5 trips to Route 10E. Run hourly 8 am-6 pm</li> <li>Add 10W service. Run hourly 8 am-6 pm</li> </ul>	+	+	N	N	+	N	\$\$	0	High	Mid-Term
9	Astoria, Warrenton, Hammond, Seaside, Cannon Beach	10E, 10W, 15A, 15B, 20, 101	<ul style="list-style-type: none"> <li>Add weekend morning hour of service</li> <li>Add weekend evening hours of service</li> </ul>	<ul style="list-style-type: none"> <li>Routes 10E, 10W, 15A, 15B, 20, and 101 start at 7 am (up to 1 hour earlier)</li> <li>Routes end at 8 pm (up to 2 hours later)</li> </ul>	N	+	+	N	N	N	\$\$	0	Medium	Mid-Term
10	Cannon Beach – Manzanita	20, PC	<ul style="list-style-type: none"> <li>Regional weekday and weekend connections</li> </ul>	<ul style="list-style-type: none"> <li>Add 4<sup>th</sup> weekday and weekend trip to Manzanita</li> </ul>	+	+	N	N	+	N	\$	0	Medium	Mid-Term

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Project Code	Service Area Affected	Routes	Transit Markets / Benefits	Summary Description	SETD Goals & System Benefits						Costs		Evaluation / Phasing	
					1. Efficiency: Provide cost-effective public transportation	2. Mobility: Serve a wide range of mobility needs	3. Availability: Ensure service availability	4. Reliability: Provide reliable service	5. Sustainability: Compete with SOV travel times and reduce VMT	6. Capacity: Ensure sufficient system capacity	Operating Cost	Capital Cost (# of Buses)	Overall Rating: (Benefit & Cost)	Phase Assigned
12	Astoria, Warrenton, Hammond, Seaside	10E, 10W, 15A, 15B, Seaside Circulator	<ul style="list-style-type: none"> <li>Add weekday evening hours of service</li> </ul>	<ul style="list-style-type: none"> <li>Routes 10E, 10W run until 10 pm (1 hour later)</li> <li>Routes 15A, 15B run until 10 pm (3 hours later)</li> <li>Seaside Circulator runs until 10 pm (3 hours later)</li> </ul>	N	+	N	N	+	N	\$\$\$	0	Medium	Long-Term
13	Astoria-Seaside, Seaside-Cannon Beach	20, 101	<ul style="list-style-type: none"> <li>Increase weekday peak frequencies</li> </ul>	<ul style="list-style-type: none"> <li>Operate Routes 20 and 101 every 30 minutes AM and PM peak</li> </ul>	-	+	N	N	+	+	\$\$\$	3	Low-Medium	Long-Term
14	Astoria, Warrenton, Hammond, Seaside, Cannon Beach	10E, 10W, 15A, 15B, 20, 101	<ul style="list-style-type: none"> <li>Add weekend evening hours of service</li> </ul>	<ul style="list-style-type: none"> <li>Routes 10E, 10W, 15A, 15B, 20, 101 run til 10 pm (2 hours later).</li> <li>Routes run 7 am-10 pm.</li> </ul>	-	+	+	N	N	N	\$\$\$	0	Low-Medium	Long-Term
15	Svensen, Knappa, Westport, U.S. 30	30	<ul style="list-style-type: none"> <li>Weekday frequency</li> <li>Weekend frequency</li> </ul>	<ul style="list-style-type: none"> <li>Add two long trips to Rainier weekend and weekday (4 total)</li> <li>Add two short trips to Svensen/Knappa weekday (6 total)</li> <li>Add two short trips to Svensen/Knappa weekend (6 total)</li> </ul>	-	+	+	N	N	N	\$\$\$	0	Low-Medium	Long-Term
16	Warrenton/Miles Crossing	New Route	<ul style="list-style-type: none"> <li>Local weekday service (new)</li> </ul>	<ul style="list-style-type: none"> <li>Add service on U.S. Business 101</li> </ul>	-	N	+	N	N	N	\$\$\$	1	Low	Long-Term
17	Astoria	10E, 10W	<ul style="list-style-type: none"> <li>Increase accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate feasibility of flex route service</li> </ul>	+	N	+	N	-	N	\$\$\$	1	Low	Long-Term

**Cost**

- \$\$\$ = Most expense needed
- \$\$ = Medium expensive
- \$ = Low expense
- [blank] = Cost neutral

**Evaluation**

- +
  - N
  -
- + = Supports / helps achieve goal  
 N = Neutral – neither hurts nor helps goal  
 - = May degrade progress toward goal

## Detailed Descriptions

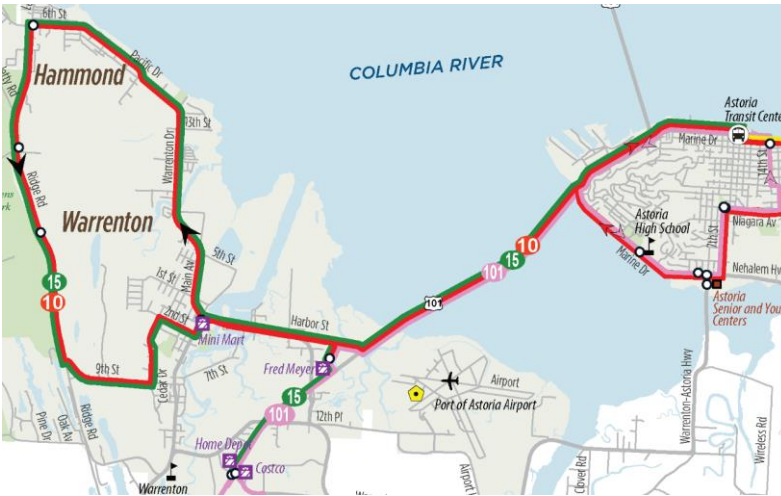
Additional details on particular recommendations that have multiple components or provide new service types is provided below.

### Recommendation #1 Routes 15/30/101

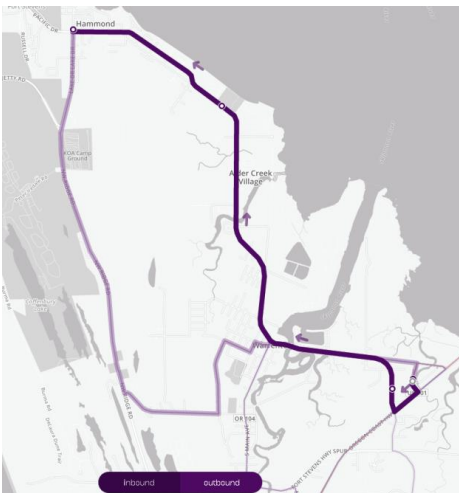
One additional vehicle provides the ability to achieve several high-priority actions. Irregular scheduling in the growing Warrenton/Hammond area is caused by Route 15's tie to Route 30 (they use the same vehicle). Removing the Ensign Lane/Costco area from Route 101 is highly desired yet that area cannot go unserved. The current Route 101 turnaround in Seaside on Avenue S misses several key destinations. The new vehicle in this recommendation allows Route 15 to operate independently and for the route to be split into a figure eight, with the Fred Meyer/Mini Mart area as the crux. Route 101 no longer has to serve the Ensign Lane deviation, increasing travel times and attractiveness for regional travelers. The extra travel time will be used to pick up more passengers in Seaside.

Figure 8-9 Route 15/30/101 Short-Term Actions

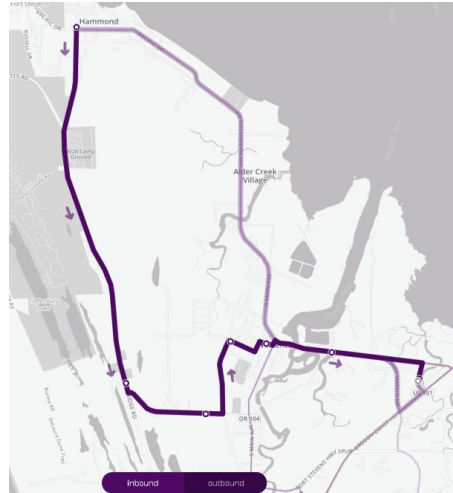
Existing Route 15



Route 15A Warrenton-Hammond Loop Outbound Recommendation



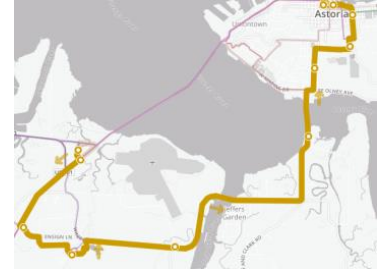
Route 15A Warrenton-Hammond Loop Inbound Recommendation





**Recommendation #16: Service on U.S. Business 101**

The reopening of the U.S. Business 101 bridge presents opportunity to link Astoria to the developing Miles Crossing area and Warrenton shopping area. Service used to run through this area. This route could also potentially serve the interior of Astoria.



**Recommendation #17: Astoria flex service**

Astoria’s topography makes walking to the fixed route challenging for those with mobility challenges. “flex service” still follows a set schedule and route, but allows passengers to call a request a pick-up off-route within a certain radius. To achieve flex service, routes must add some time to the schedule to accommodate deviations, whether they are called in or not. This adds some travel time for all riders, but could have a negligible impact for local ridership. Flex service open to the general public also covers SETD’s ADA requirement. Consider transitioning all or part of Route 10E/W to flex service long term.

**Cost Summary**

Figure 8-10 summarizes the additional and cumulative service hours and costs of the service recommendations for each of the planning time frames identified above. Existing costs are based on SETD’s fixed-route service hours and operating cost as of 2014.

The table also calculates fixed-route service hours and operating costs for each time frame on a per capita basis (relative to Clatsop County population), as a basis for comparison to other similar transit providers. The costs below do not take into account potential increases in service cost needed for any additional ADA Paratransit service. The service changes propose no new fixed-routes in the near, short, or medium term that would trigger additional ADA service. Similarly, there is relatively limited expansion of service hours beyond current hours, with the exception of weekend evening hours, and the ¾ mile buffer where ADA service is required based on the routes that are operated on weekday evenings.

**Figure 8-10 Proposed Additional Annual Fixed-Route Service Hours and Operating Cost Summary**

	Service Hours		Operating Cost		Approx. Impl. Year	County Population [1]	Per Capita Metrics	
	Additional	Cumulative	Additional	Cumulative			Service Hours	Operating Cost
<b>Existing (2014)</b>	16,224	16,224	\$869,000	\$869,000	2014	37,750	0.43	\$23
<b>Near-Term</b>	100	16,324	\$6,000	\$875,000	2017	37,750	0.43	\$23
<b>Short-Term</b>	4,140	20,464	\$225,000	\$1,100,000	2020	38,461	0.53	\$29
<b>Mid-Term</b>	9,820	30,284	\$535,000	\$1,635,000	2026	39,358	0.77	\$42
<b>Long-Term *</b>	15,930	46,214	\$871,000	\$2,506,000	2036	40,521	1.14	\$62

Notes: \* Long-term is considered a flexible service plan to be implemented based on future needs and service standards. [1] 2015-2035 population in 5-year increments from Technical Memo #3. Source: Portland State University, Population Research Center, Certified Population Estimates, 2015, and Oregon Office of Economic Analysis, Released 3/28/2013.

**Service Phasing Summary**

Figure 8-11 and Figure 8-12 summarize and illustrate the short-, mid-, and long-term service recommendations. The final plan will provide a detailed summary of recommendations by time frame.

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Figure 8-11 Existing and Proposed Service Summary by Time Frame – Incremental Changes

Time Frame:	Existing	Near-Term: 0-1 Years	Short-Term: 2-4 Years	Mid-Term: 5-10 Years	Long-Term: 11-20 Years
<b>Regional</b>					
<b>Lower Columbia:</b> Route 30 / LCC	2 daily trips Astoria-Rainier	Brand LCC as Route 30 LCC	Add 2 weekday short trips to MERTS, Svensen / Knappa  Consider shopper shuttle to Svensen/Knappa		Add 2 weekday and weekend trips Astoria-Rainier  Add 2 weekend short trips to MERTS, Svensen/Knappa
<b>Astoria – Seaside:</b> Route 101 / Pacific Connector	60–120 min weekday 3 weekend trips	Reroute to stay on northern W. Marine Drive in Astoria with jog up to CCC  Brand weekend PC as Route 101 (PC)  Add fourth weekend trip	Reduce travel time by eliminating deviations to Ensign Lane  Extend to Avenue U & Beach Drive in Seaside  More frequent weekend service	60 min weekday all-day  Earlier weekend and early evening service  Bidirectional routing on US 101 in Seaside  Improve transfers with Route 20  Remove Wahanna Road service	Consider more frequent weekday peak service  Consider later evening weekend service
<b>Seaside – Cannon Beach:</b> Route 20 and 21	60 min weekday 60 min weekend (2½ hour midday gap)	Brand as Route 20 (PC) on weekends  60 min weekday 60 min weekend (all-day)  Remove Necanicum Drive routing	Improve transfers with Route 101	Earlier weekend and early evening service  Bidirectional routing on US 101 in Seaside	Consider more frequent weekday peak service  Consider later weekend service
<b>Cannon Beach - Manzanita:</b> Routes 20 and 21	3 trips / day (1 by SETD, 2 by TCTD)			Add 1 trip/day (4 trips / day - operated by TCTD)	
<b>Local</b>					
<b>Astoria:</b> Route 10	60 min, 1 route  No local weekend service	60 min, break Route 10 into 2 shorter routes (10E, 10W)  Service to interior of Astoria and Head Start (four trips)	Weekend local service on 10E	<ul style="list-style-type: none"> <li>▪ Additional weekend service (10E, 10W)</li> <li>▪ Additional weekday evening service</li> </ul>	Additional frequency or coverage (flex-route)  Consider later evening weekend service

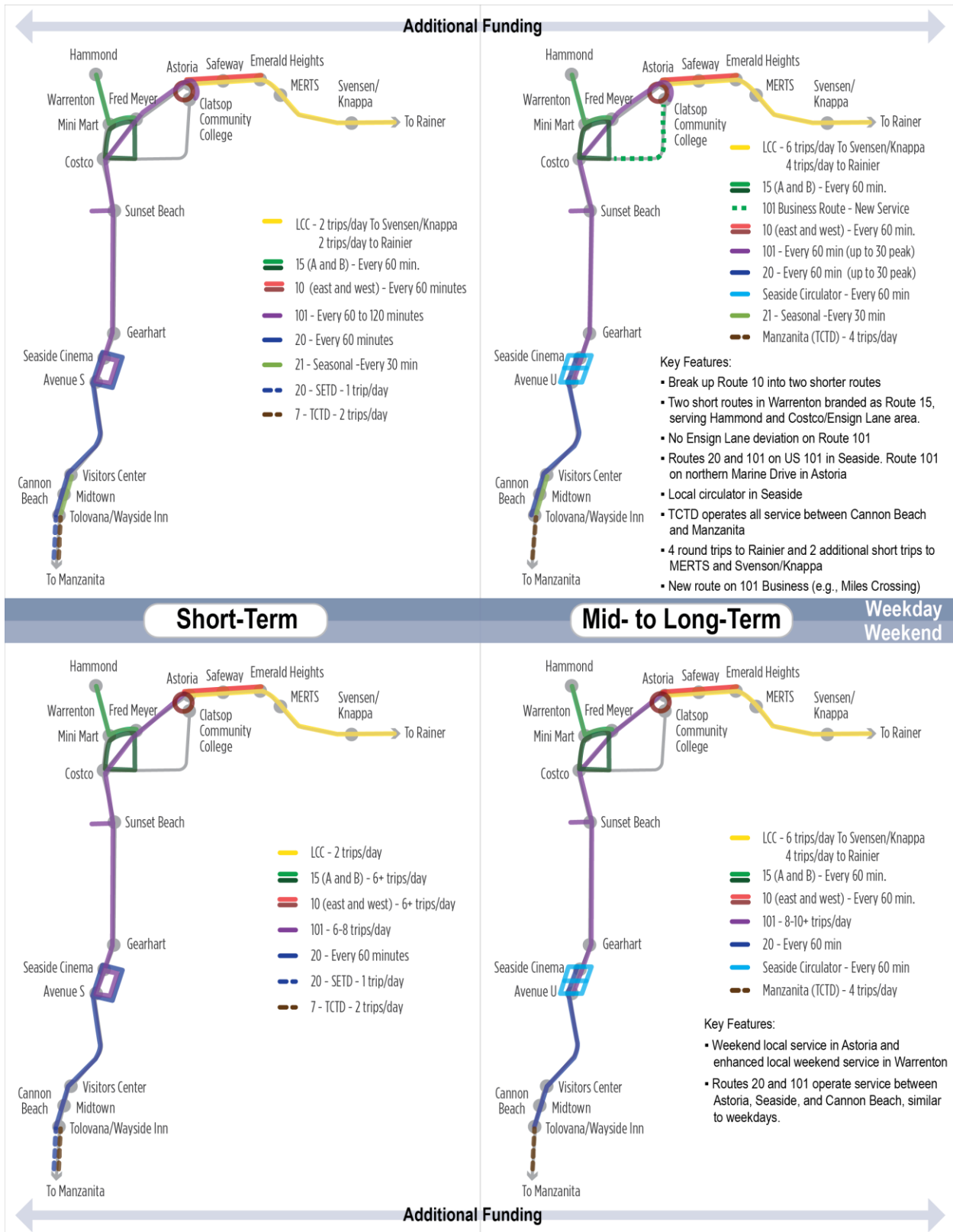
Sunset Empire Transportation District

Time Frame:	Existing	Near-Term: 0-1 Years	Short-Term: 2-4 Years	Mid-Term: 5-10 Years	Long-Term: 11-20 Years
<b>Warrenton: Route 15</b>	11 trips, part of Routes 10 and 15	Brand all trips as Route 15	Separate from Route 30 Split into two routes: long turn to Hammond (15A), short-turn to Costco/Walmart area (15B) Hourly weekday service Weekend local service	<ul style="list-style-type: none"> <li>▪ Additional weekend service</li> <li>▪ Additional weekday evening service</li> </ul>	Consider later evening weekend service
<b>Seaside:</b>	<ul style="list-style-type: none"> <li>▪ Seasonal Streetcar</li> </ul>			<ul style="list-style-type: none"> <li>▪ Implement Seaside Circulator</li> </ul>	Consider later evening weekend service on circulator

Notes: PC = Pacific Connector.

# Sunset Empire Transportation District

Figure 8-12 Short, Mid, and Long-Term Service Recommendations



## Individual Recommendation Cost Details

Figure 8-13 provides the additional hours of service and operating cost needed for each individual recommendation. Due to overlap between certain actions and assumptions about order of implementation, annual cost totals differ slightly from [Figure 8-10](#) ~~Figure 8-10~~.

**Figure 8-13 Order-of-Magnitude Additional Service Hours and Operating Costs for Individual Improvements**

Time Frame	Day of Week	Route	Description	Daily Hours	Days / Year	Annual Hours	Annual Cost
Near-Term	Weekday	10	Restructure into two shorter routes, 10W and 10E. Cost-Neutral	0:00	255	0	\$0
Near-Term	Weekday	20 / 101	Redesign Routes 20/101 to operate along U.S. 101 in Seaside. Cost Neutral.	0:00	255	0	\$0
Near-Term	Weekday	PC / 20 / 101	Restructure Route 21/Pacific Connector as Route 20/101. One additional service hour per day.	1:00	104	104	\$5,700
Short-Term	Weekday	15	Separate bus to operate Route 15 service when Route 30 goes to Rainier (9:40 am - 2:45 pm)	7:00	255	1,785	\$97,600
Short-Term	Weekday	101	Eliminate SE Huckleberry deviation; cost-neutral but requires additional resources for Route 15	0:00	255	-	\$0
Short-Term	Weekday	30	Shopper Shuttle Svensen/Knappa - 1 round trip per week.	1:05	52	56	\$3,100
Short-Term	Weekend	15	Operate Warrenton weekend service, separate Route 15 from from Route 30. Assume 1 bus, 10 hours.	5:00	104	520	\$28,400
Short-Term	Weekend	10E	Operate Astoria weekend service, separate Route 15 from from Route 30. Assume 1 bus, 10 hours.	5:00	104	520	\$28,400
Short-Term	Weekday	LCC	2 additional daily short round trips to MERTS/Svensen/Knappa	0:50	255	213	\$11,600
Short-Term	Weekend	20/101	Additional Astoria - Cannon Beach weekend service. Assume 1 additional bus/operator shift.	8:00	104	832	\$45,500
Mid-Term	Weekday	20	Renegotiate weekday service to Manzanita with TCTD.	2:16	255	578	\$30,600
Mid-Term	Weekday	101	Additional Route 101 midday trips (hourly all-day headways); 2 round trips.	4:15	255	1,084	\$59,200
Mid-Term	Weekday	Seaside Circulator	Implement Seaside Circulator, assume 1 bus, 12 hours initially, 60 minute headways (7-7 pm)	12:00	255	3,060	\$167,300
Mid-Term	Weekend	10/15	Operate Warrenton weekend service, separate Route 15 from Route 30. Assume 1 bus, 10 hours. (E.g., 7-6 every other hour)	5:30	104	572	\$31,300
Mid-Term	Weekend	10/15	Operate Astoria weekend service, separate Route 15 from from Route 30. Assume 1 bus, 10 hours. (E.g., 8-7 every other hour)	5:30	104	572	\$31,300

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Time Frame	Day of Week	Route	Description	Daily Hours	Days / Year	Annual Hours	Annual Cost
Mid-Term	Weekend	20	Renegotiate weekend service to Manzanita with TCTD.	2:16	104	236	\$13,200
Mid-Term	Weekend	101	Earlier Weekend Service on 101, 1 hour per day.	1:00	104	104	\$5,700
Mid-Term	Weekend	20	Earlier Weekend Service on 20, 1 hour per day.	1:00	104	104	\$5,700
Mid-Term	Weekend	Seaside Circulator	Implement Seaside Circulator, assume 1 bus, 10 hours, 60 minutes (8-6 pm)	10:00	104	1,040	\$56,800
Mid-Term	Weekend	10,15,Seaside Circulator	Early morning weekend service - 20 & 101 are separate line items: 10 (+1h), 15 (included in 12), Seaside Circulator (+1h) = +2h	2:00	104	208	\$11,400
Mid-Term	Weekend	20,101,10,15,Seaside Circulator	Early evening weekend service: 20 (+2), 101 (+2), 10 (+1h), 15 (+2h), Seaside Circulator (+2h) = 9 total	9:00	104	936	\$51,200
Mid-Term	Weekday	15	Provide Route 15 service when Route 30 bus is in Rainier, assuming Rec #7B is not implemented	7:00	255	1,785	\$97,600
Mid-Term	Weekday	101/20	4th weekday trip to Manzanita	2:16	255	578	\$31,600
Mid-Term	Weekend	101/20	4th weekend trip to Manzanita	2:16	104	236	\$12,900
Mid-Term	Weekday	101	Additional Route 101 early evening service	2:00	255	510	\$27,900
Long-Term	Weekday	10	Route 10 evening service - 1 additional service hours, e.g., 9-10 pm	1:00	255	255	\$13,900
Long-Term	Weekday	10	Additional Astoria frequency and/or coverage (flex-route). 1 additional bus assumed, 12 hours daily. Does not include potential cost savings due to reduced ADA Paratransit demand.	12:00	255	3,060	\$167,300
Long-Term	Weekday	15	Route 15 evening service - 3 additional service hours, e.g., 7-10 pm	3:00	255	765	\$41,800
Long-Term	Weekday	15	Separate Route 15 fully from Route 30 and Route 10. Does not include potential savings from using Route 30 to do driver breaks and enables 3rd trip to Rainier. - 13 total hours, e.g., 6am-7pm	6:00	255	1,530	\$83,600
Long-Term	Weekday	20	Additional peak frequency Seaside - Cannon Beach	6:00	255	1,530	\$83,600
Long-Term	Weekday	101	Additional peak frequency Astoria - Seaside Peak	6:00	255	1,530	\$83,600

Sunset Empire Transportation District

Time Frame	Day of Week	Route	Description	Daily Hours	Days / Year	Annual Hours	Annual Cost
Long-Term	Weekday	101B	Implement Business 101 Route - assume 1 bus, 14 hours, up to 60 minute headways.	14:00	255	3,570	\$195,100
Long-Term	Weekday	LCC	2 additional daily round trip to Rainier (4 total)	5:15	255	1,339	\$73,200
Long-Term	Weekend	LCC	2 additional daily round trip to Rainier (4 total)	5:15	104	546	\$29,800
Long-Term	Weekday	Seaside Circulator	Expand Seaside Circulator, additional weekday evening hours	3:00	255	765	\$41,800
Long-Term	Weekend	20,101, 10,15, Seaside Circulator	Later evening weekend service: 20, 101, 10, 15, Seaside Circulator	10:00	104	1,040	\$56,800
Long-Term	Weekday	LCC	2 additional daily short round trips to MERTS/Svensen/Knappa	0:50	255	213	\$11,600

Note: Based on a cost of \$55 per hour (SETD cost from 2014 performance data).

## PROGRAMMATIC SUPPORT

The operation of service must be complemented by information, outreach, safe and secure bus stops, and other elements that support when and where bus routes run.

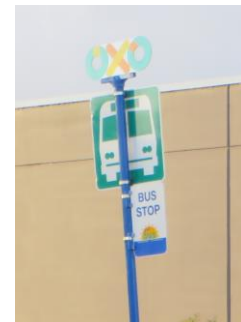
### Marketing and Information

A common refrain heard from stakeholders and the public is that people are not aware of bus service and how to ride. Yet many public input participants and employers expressed interest in taking a bus, showing a potential market for transit. The following strategies will make transit more accessible to a broader audience and also help existing riders.

#### System branding

SETD bus stop signs and buses employ a mix of the old “the Bus” logos as well the new logo and/or the Northwest Connector logo. Action items:

- Transition all bus stops to include the new SETD logo (left). This is a costly endeavor bus one that will reduce confusion.
- Include Northwest Connector logo (right) on stops served by Route 30: Lower Columbia Connector and Route 101: Pacific Connector.
- Repaint all buses with the new SETD logo.



#### Web site

An increasing number of people obtain transit information online. SETD’s web site already includes links to route and system maps, announcements, and rider alerts. Additional items to include:

- Next Bus information (see Technology section below)
- Dial-a-Ride program information

### System & Route Maps

SETD has undertaken a revamp of its current maps and schedules. Issues noted with current materials are addressed in these action items:

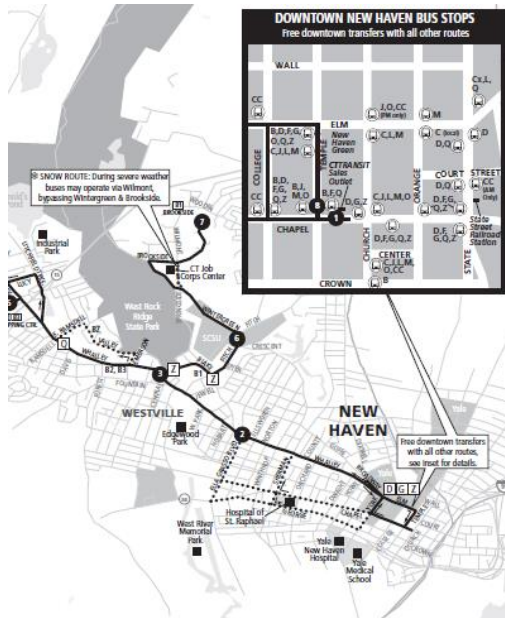
- ~~Consider revised passenger information system booklet. SETD's current fold-out is large and costs \$1 per copy. System maps are extremely important, yet at this cost printing thousands of copies becomes very costly. As an example, the Bend Rider Guide system map printed on glossy paper measures 18"x20" and is folded down to rack size, at a cost of 40 cents per copy using a local printer. In terms of creating a guide that does not require unfolding a large piece of paper, Cascades East Transit in central Oregon prints a 4"x7" rider guide as a booklet, with a fold-out system map at the front and newspaper print pages for the individual route maps.~~
- Create individual route maps and schedules. In addition to the system map, provide individual route maps. Color code routes and schedules. Include the direction of the bus on route maps (see [Figure 8-14](#)) and include major trip generators and the street network so riders can find stops.
- Add stop numbers or letters to route maps and schedules to allow the user to easily switch back and forth between the two. An example of a transit map with numbers corresponding to the schedule is shown in Figure 8-15.
- Reduce the number of stops on schedules. Currently the schedules have too many stops listed. SETD is a flag system, therefore schedules can just list the major stops with timepoints. Suggested timepoints are listed in Figure 8-16.
- Ensure that all system information is translated into Spanish.
- In places where routes operate as a couplet, such as in downtown Cannon Beach, install signage showing the route map so passengers understand that southbound service runs on Hemlock Street and northbound service runs on Spruce Street.

Figure 8-14 Color-coded individual route map and schedule



## Sunset Empire Transportation District

**Figure 8-15 Map with stops labeled with numbers (left) corresponding to schedule (right)**



<b>WEEKDAY SERVICE</b>							
<b>New Haven ▶ Whalley Avenue ▶ Amity Rd/Brookside</b>							
Timepoints	1	2	3	4	5	6	7
	Downtown New Haven Chapel & Temple	Whalley & Boulevard	Westville Center Whalley & Blake (B1, B2, B3)	Jewish Community Center (B3)	Amity Road Terminus Amity Shopping Center (BB2, B3)	Southern CT State Univ Fitch Street (B1)	Brookside Terminus Augustine Street (B1)
<b>Route B1</b>	4:35	4:43	4:46	..	..	4:49	4:55
<b>B3</b>	5:55	5:03	5:06	5:13	5:11	..	..
<b>B2</b>	5:15	5:22	5:25	..	5:32	..	..
<b>B1</b>	5:25	5:33	5:36	..	..	5:39	5:45
<b>B2</b>	5:35	5:42	5:45	..	5:52	..	..
<b>B1</b>	5:45	5:53	5:56	..	..	5:59	6:05
<b>B3</b>	5:50	5:58	6:01	5:08	5:06	..	..
<b>B2</b>	6:00	6:08	6:11	..	6:20	..	..
<b>B1</b>	6:10	6:18	6:21	..	..	6:24	6:30
<b>B3</b>	6:15	6:23	6:26	5:33	5:31	..	..
<b>B2</b>	6:20	6:28	6:31	..	6:40	..	..
<b>B1</b>	6:30	6:38	6:41	..	..	6:44	6:50
<b>B2</b>	6:40	6:48	6:51	..	7:00	..	..

**Figure 8-16 Sample timepoints and numbers matched to route maps**

Timepoint	Stop	Timepoint	Stop	Timepoint	Stop
<b>Route 101 Southbound</b>		<b>Route 10E</b>		<b>Route 15</b>	
A	Clatsop Community College	1	Transit Center	1	Transit Center
1	Transit Center	2	16th & Exchange	2	Fred Meyer
2	Fred Meyer	3	Hospital (East)	3	Mini Mart
3	Probation Office	4	Gateway Apartments	4	Pacific Drive & Willow Street
4	Senior Services	5	Safeway (East)	5	Fort Stevens
5	Costco	6	Emeraldn Heights - Kincaid and Nimitz	6	2nd & Alder
6	Camp Rilea	7	Emerald Heights - Mitscher Shelter	2	Fred Meyer
7	Sunset Beach	6	Emeraldn Heights - Kincaid and Nimitz	7	Costco
8	Bud's RV	8	Job Corp	1	Transit Center
9	Seaside Cinema	9	45th and Cedar		
10	Avenue S and US 101	5	Safeway (west)		
11	McDonal'd	4	Gateway Apartments		
<b>Route 101 Northbound</b>		3	Hospital (West)		
9	Seaside Cinema	2	16th & Exchange		
8	Bud's RV	1	Transit Center		
7	Sunset Beach	<b>Route 10W</b>			
6	Camp Rilea	1	Transit Center		
3	Probation Office	2	16th & Exchange		
4	Senior Services	3	Clatsop Community College		
5	Costco	4	Peter Pan		
2	Fred Meyer	5	Short Stop		
1	Transit Center	6	Astoria High School		
A	Clatsop Community College	7A	DMV		
		7B	Head Start		
		8	Department of Human Services		
		1	Transit Center		

## Community Outreach

Building a wider base for transit increases transit's exposure throughout the community and adds more riders. Action items cover the range of markets; all items were brought up as opportunities by stakeholders and the public.

- Develop list of organizations to conduct outreach to classified by market type. For example, Students, Employers, Older Adults, Spanish-speaking population, etc. Create a calendar and have the SETD mobility manager or other staff visit these organizations on a periodic basis. For example, the Seaside Chamber of Commerce meets weekly for breakfast. SETD could stop in to let people know about transit or gather input every quarter or even every six months.
- Create a package of information and a presentation so SETD can easily attend various presentations.
- Work with Seaside Providence Hospital to understand how SETD can best meet the needs of hospital staff and patients. The hospital is willing to assist by surveying staff.
- Continue developing a transit pass program with Clatsop Community College.
- Conduct outreach to Columbia Memorial Hospital in Seaside. The hospital plans to expand and is experiencing parking shortages, thus may be interested in an employee transit pass.
- Reach tourism agencies to ensure SETD service information is up to date in hotel and visitor guest books.
- Conduct outreach to seasonal employers such as Hallmark's and Mo's to determine interest in purchasing bus passes for employees. [Work with the City of Cannon Beach to develop remote parking locations in tandem with bus passes, such as at the south end of the city or at the US 101/US 26 junction.](#)
- Consider remove RV parking at a locations served by SETD to attract RV tourists to park and take the bus into town for shopping, restaurants, etc.

## National Park Service Opportunities

Expanding the role of SETD to the recreation and public health market is possible by partnering with the National Park Service. For example, the six-mile Fort to Sea trail from Fort Clatsop to Sunset Beach is a population, but requires hikers to either walk the trip back (another six miles) or arrange for a pick-up. Operating a weekend-only shuttle between each end of the trail during certain months of the year is of interest to the NPS and could be possible through a cost-sharing partnership.

## Guaranteed Ride Home

The biggest obstacle to people trying transit is a fear of the "what ifs." People wonder, "If I take the bus, what happens if I have to work late? What if my child gets sick and I have to pick them up?" Guaranteed Ride Home programs are offered by transit agencies across the country as a way of alleviating that fear. In partnership with taxi companies, the agency can offer passengers a set number of taxi trips per year that can be used in the case of an emergency, free of charge. Sponsors of these programs have found that most people do not end up using all of their allotted taxi trips; instead, GRH provides a safety net and reassurance.

## Technology

How people access information and how people expect to access information has changed drastically. An increasingly "online" populace wants to obtain information online and through smartphones. By far the biggest request heard was for SETD to employ **real-time passenger information** via web or mobile

apps (such as Next Bus). SETD is working to add GPS devices to vehicles, which will enable this technology.

## Fares

SETD's fare policies and fare collection are instrumental in meeting the community's mobility needs and the organization's operational goals. The fare structure and fare collection procedures will affect:

- Fare revenue levels
- Operating costs (including fare collection costs and costs related to fare collection based travel time delays)
- Driver/rider interactions
- Travel affordability

No one fare system can meet the needs of every community and should be developed to meet organization and community goals. The following fare system goals were identified by SETD staff and reviewed by the TPAC.

- **Consistency.** Distance-based fares should reflect length of trip completed and multi-ride fare instruments should be priced such that the relative price differentials between passes reflect the relative benefits provided.
- **Simplicity.** SETD should offer a limited number of fare instruments and they should be easy to understand, obtain, and use.
- **Support transfers.** Fare instrument availability and pricing should not penalize riders when they make required transfers to complete a cross-region or cross-town trip.
- **Fare revenue retention.** Discounts on multi-ride passes or for specific rider groups should not excessively reduce fare revenues beyond expected subsidy levels.
- **Operations impacts.** The fare collect system should not put excessive burdens on bus operators in terms of their role in selling fare media, enforcing fare policy, or being delayed while fares are processed.

As noted, the current SETD fare structure has led to some confusion and user concerns. And the current fare system may not be optimal for addressing linked trips that require transfers-an issue that will likely grow as the long-term vision for this system is realized. The following recommendations address some of the inconsistencies with the current pricing and/or improvements to the general fare collection system. Each recommendation notes which of the fare collection system goals are being addressed.

- **Review distance-based fares.** SETD essentially has a zone-based fare structure on routes serving U.S. 101 and U.S. 30, but is conveyed in a series of city-pair fares. The use of "All Other Location" fares on the U.S. 101 routes can lead to confusion. And some user have concerns that Astoria/Warrenton to Sunset Beach trips are priced too high. It may help to identify clear zone boundaries on the route maps and associate fares for travel within any zone, travel between two zones, or travel between three zones. The current base fare pricing can be retained as the \$1, \$3, and \$4 fares reflect such travel. Sunset Beach can be placed in either "Zone 1" or Zone 2" as it's roughly the midpoint between Warrenton and Gearhart. If pursuing this recommendation, SETD should review ridership from Sunset Beach to see where these riders are traveling and what fare revenue impacts may stem from considering them as local trips in either "Zone 1 or Zone 2." The Lower Columbia fares for travel along U.S. 30 can remain as intercity fares as the distances are greater and the number of intermediary stops are limited. **(Goals addressed: Consistency, Simplicity)**

- **Review multi-ride pass offerings and pricing.** The current passes have raised a number of concerns including: a disconnect from the distance-based fares for single-ride fares; inconsistent level of discounts for qualifying rider groups; inconsistent pricing for similar pass terms; and an excessive number of options relative to needs. When addressing pass prices SETD should keep the following principles in mind. **(Goals addressed: Consistency, Simplicity, Fare Revenue Retention, Support Transfers)**
- **Pass multiplier value.** A pass price should reflect the desired discount level. The multiplier value is the pass price relative to the base standard fare. For instance, the \$45 monthly pass has a multiplier of 45 relative to the \$1 base for local travel. This is a relatively high value (i.e. a low discount) when compared to others in the transit industry. The multiplier of 45 results in the user paying for 22.5 round trips per month, regardless of the number of trips taken. But the same monthly pass is good for longer-distance travel resulting in a multiplier of only 15 (i.e. a much greater discount) for Astoria to Seaside travel. This is extremely low relative to peers and results in a user riding for free after 7.5 round trips. SETD should consider a consistent multiplier value based on a desired multi-ride discount level and apply it to all the distance-based fares. This implies there will be a pass for each base fare offered.
- Day passes are useful if riders infrequently travel a lot in a day or make transfers when each leg of the trip involves a fare. The current \$5 day pass price is relatively high. Most agencies price day passes in the 2 to 4 times the base fare range. Those offering a break for transferring passengers will aim toward the lower value. As with the other passes, the day pass should either be limited to local travel or have additional day passes for “zonal” travel and priced relative to a distance-based cash fare. Day passes should be made available for sale in as many locations as possible to support spontaneous travel by infrequent riders. These could be sold on buses provided the transactions do not negatively impact dwell and travel time.
- **Discounted fares and passes.** Discounts for special populations are common in the industry. These recognize affordability concerns and offer incentives for taking fixed-route service when users also qualify for demand-response service. The only requirement for discounted fares are found in urban areas where providers have to offer half-fares to cash paying riders during non-peak times. But the reduced fares are often extend to pass users and are found in rural areas as well. SETD should consider a consistent discount level and provide it toward all single-ride and pass prices.
- **Number of fare instruments.** The above recommendations will result in a greater number of fare media for SETD, but these should be simple to communicate to riders as the passes and discounts mirror a finite set of base fares. But some of the current pass offering should be reconsidered in the name of simplify and consistency. Annual passes are quite expensive and probably don’t make sense for typical riders. Similarly the quarter passes for students are priced the same as monthly passes for K-12 students. And CCC students pay twice the monthly price for quarter and ten times as much for an annual pass. SETD should consider retaining the monthly pass as an affordable option for students and possibly offering a longer term pass for the academic year after working with the schools/college if the institution or student bodies can provide subsidies for any additional discounts.
- **Transfer slips.** Future changes to the SETD system will increase the need to transfer as some routes are simplified. SETD should make transfers as convenient and affordable as possible. As mentioned, day passes can be used to offer a price break to those required to make transfers and do not travel enough or have the funds for a monthly pass. Alternatively SETD could offer free transfers. But this implies the providing of transfer slips on originating buses and the validation of these slips on destination buses. To avoid too much fare evasion, transfer slips are often encoded with date codes and the originating driver notes the time of day when issued to that they cannot be

used all day. In many systems the use of transfer slips increase the number of conflicts between drivers and riders when validating transfers. As a result the popularity of day passes is increasing. .  
(Goal addressed: Support Transfers)

## CAPITAL INVESTMENTS

### Transit-Specific Improvements

#### Vehicles

Vehicle replacement is needed on a rolling basis, and SETD has budgeted for such replacements. For future models, determine the cost of low-floor cutaway and transit vehicles. These are often higher cost, but have several advantages:

- Easily-deployed wheelchair lift at the front of the bus. SETD drivers would no longer have to get out of the vehicle and board wheelchair passengers through the back. This greatly reduces the amount of time spent loading and unloading wheelchair passengers.
- Level boarding helps all passengers with mobility challenges or who are carrying children, groceries, etc.
- Passengers have clear visibility out the front and sides of the buses.

Figure 8-17 SETD Vehicles



Current SETD vehicles (left) force passengers to climb up a steep set of steps. Low-floor cutaway vehicles are used in many transit agencies (top right). Pacific Transit utilizes low-floor full-size transit vehicles (bottom right).

The cost of SETD's current vehicles range from \$94,000-\$120,000 depending on length and capacity. The operating plan presented requires an additional seven total vehicles: 1 in the short-term, 1 in the mid-term, and five in the long-term.

### **Park & Ride**

Park & Ride locations reach the part of the population that is not within walking distance of transit. Locations in north and south Seaside as well as a location near the U.S. 26 and U.S. 101 interchange were mentioned as potential locations. Building up service infrastructure at these sites may entail an indoor waiting area, bicycle parking, restrooms, and real time information.

### **Seaside Transit Center**

Continue exploring locations for a transit center in Seaside given this area's growth.

### **Bus Shelters**

Additional bus shelters, as discussed in the performance standards chapter, are warranted at high-ridership locations. More than one shelter or larger shelters are needed at the highest ridership stops.

### **Bus Stop Signs**

Once SETD determines which stops to officially list in the route schedules, install bus stop poles with service information at these stops. Bus stop signs all visibility to the system and let people know where service runs. Glass box schedule rectangles are handy because they allow the agency to easily replace system information as needed.

### **Relocate Clatsop Community College Stop**

During Patriot Hall reconstruction, the SETD bus stop located in the parking lot of CCC near the library back door was relocated. Move this stop permanently to the corner of 16<sup>th</sup> and Lexington. This still provides easy access to CCC's front door, but removes a long and steeply sloped deviation into CCC's parking lot.

### **Replace Speed Bumps**

Speed bumps in the Clatsop Community College and Sunset Beach stop areas are jarring for passengers and the bus. Replace these sharp speed bumps with speed humps (which have a gentler slope and rounded top).

### **Roadway/Signal Improvements**

The following improvements, illustrated in Figure 8-19, are recommended to improve transit safety and on-time performance at several roadways/intersections served by current SETD routes. SETD would need to coordinate with the applicable agencies/jurisdictions to identify and secure funding for specific improvements. In most cases, the other agencies or jurisdictions would be responsible for constructing the improvements. [Figure 8-18](#) summarizes both the high priority improvements identified below and shown on the map, and other planned improvements that could benefit transit operations and safety.

Sunset Empire Transportation District

Figure 8-18 Summary of Recommended Roadway/Signal Improvements

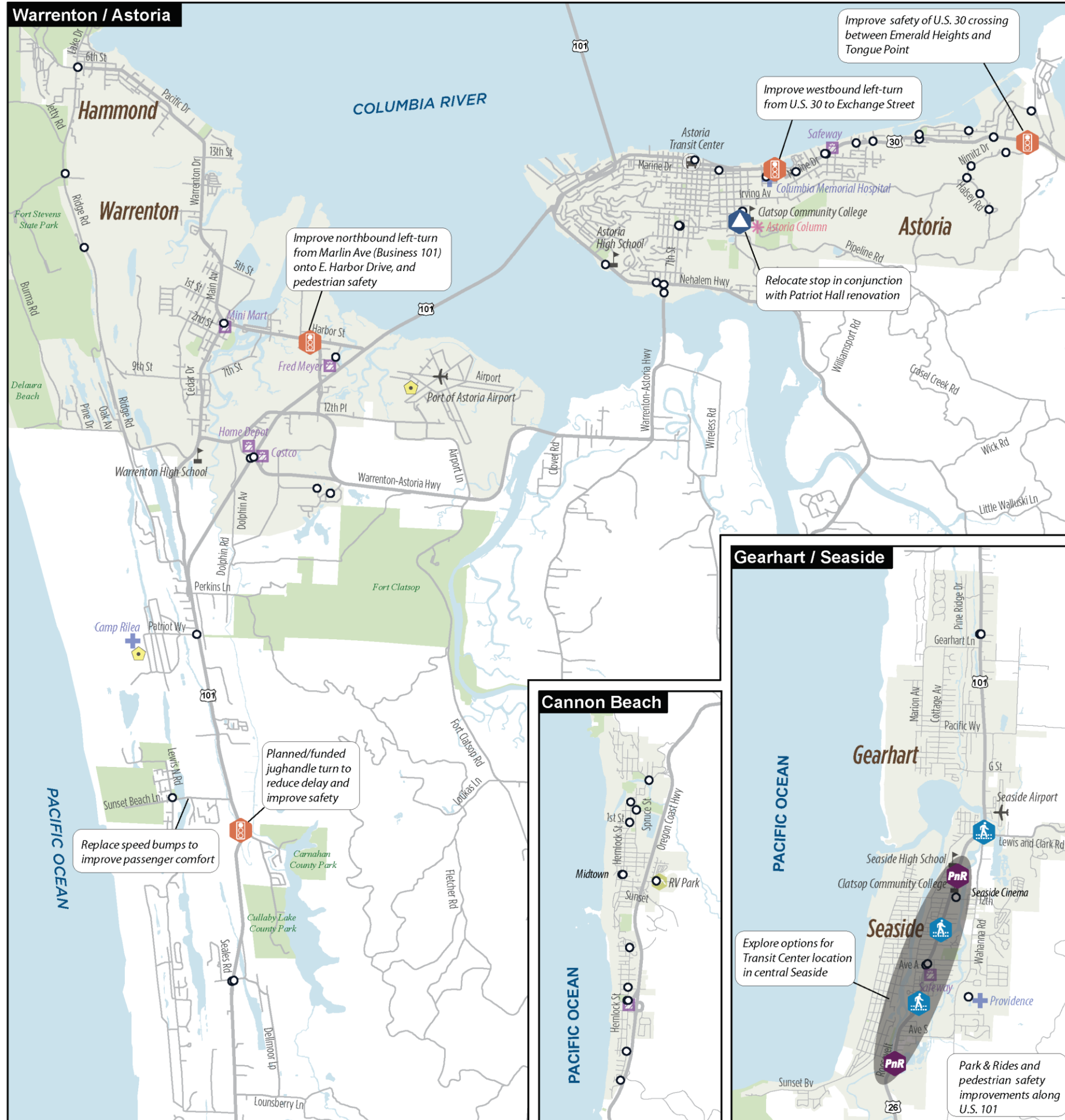
Improvement Location	Relationship to SETD / Coordination Needs	Priority for SETD	Existing TSP / Project Number / Priority	Cost
<b>High Priority Improvements for Transit</b>				
Sunset Beach Lane at U.S. 101 Jughandle Turn	Reduce delay, improve safety for NB left-turn onto U.S. 101. Turn should be designed to accommodate transit vehicles.	High	Clatsop County, D20: US 101/Sunset Beach Road (Financially-constrained short-term - Funded)	Funded
U.S. 30 at Nimitz Drive / Maritime Road, Astoria	Reduce delay, improve safety for southbound transit vehicles needing to cross U.S. 30. Astoria TSP includes other improvements to this intersection (e.g., realignment/turn lanes).	High	Astoria TSP, D9: US 30/Nimitz-Maritime Road Safety Enhancement (Long-Term Phase 2 Aspirational)	\$242,000
Marine Drive at Exchange Street, Astoria	Reduce delay, improve safety for westbound transit vehicles needing to make this left-turn.	Medium	Astoria TSP, D6: US 30/ Exchange Street / 23 <sup>rd</sup> Street Safety Enhancement (Long-Term Phase 4 Aspirational)	\$1,547,000
Marlin Avenue (Business U.S. 101) at E. Harbor Drive, Warrenton	Reduce delay and improve pedestrian safety.	Medium	-	
<b>Other Improvements with Potential Relationship to Transit</b>				
US 30 / 16 <sup>th</sup> Street Capacity Enhancement, Astoria	Reduce delay and improve safety for existing inbound Route 101, and/or future westbound east Astoria route.	Medium	Astoria TSP, D6: US 30/ Exchange Street / 23 <sup>rd</sup> Street Safety Enhancement (Long-Term Phase 4 Aspirational)	\$1,547,000
Irving Ave. Extension to connect with Nimitz Drive, Astoria	Could enable service to be provided south of U.S. 30 and provide a more efficient means of serving Emerald Heights. Design to accommodate transit vehicles and stops.	Low	Clatsop County, D08: Irving Ave, East Terminus – Nimitz Drive. (Financially-constrained short-term). Astoria TSP, D30 (Long-Term Phase 4 Aspirational)	\$7,000,000
U.S. 30 / Liberty Lane Intersection Realignment / SB Left-Turn Pocket, Astoria	Accommodations for transit could enable future service to MERTS.	Low	Clatsop County, D07: (Aspirational Long-Term Ph 4). Astoria TSP, D10 (Long-Term Phase 2 Aspirational)	\$400,000
Spot U.S. 101 Improvements, Astoria-Seaside	Providing transit vehicles with the ability to bypass bottlenecks improves on-time performance and coordination between routes.	Medium	Clatsop County, D21: US 101, Patriot Way – Sunset Beach Road (Aspirational Ph 2) Clatsop County, D30: US 101, South of Seaside, MP 22.6 - 23.17 (Aspirational Ph 2)	\$10,000,000 \$4,000,000

**Sunset Empire Transportation District**

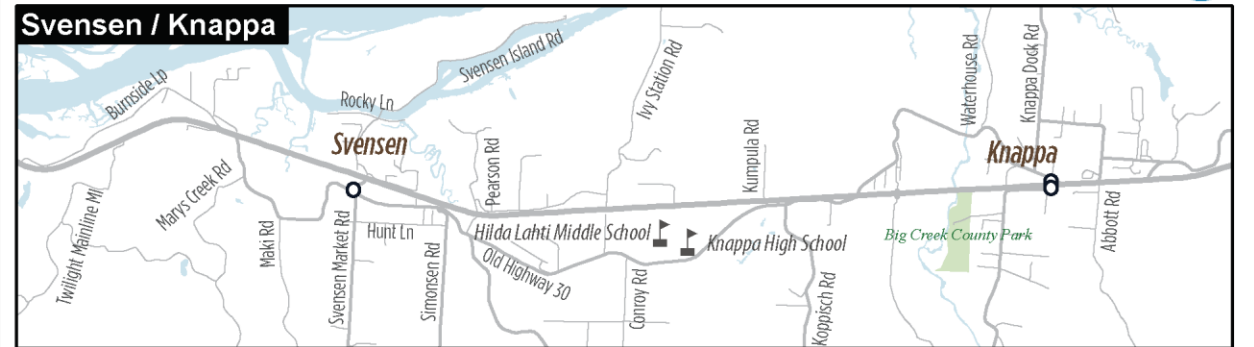
Improvement Location	Relationship to SETD / Coordination Needs	Priority for SETD	Existing TSP / Project Number / Priority	Cost
U.S. 101 Business Improvements, Miles Crossing / Warrenton	Accommodations for transit could benefit future service on Business 101.	Medium	Clatsop County, D11-D13: (Financially-Constrained Short-Term / Aspirational Long-Term Ph 4). Astoria TSP, D33 (Long-Term Phase 3 Aspirational)	\$5,600,000 \$10,000,000 \$350,000 \$5,470,000
19 <sup>th</sup> St. Extension to Dolphin Rd. at Rainbows End Lane, Warrenton	Could provide an alternative route if U.S. 101 is congested and/or a means for Route 101 to efficiently serve the Walmart/Huckleberry area.	Medium	Clatsop County, D14: (Financially-Constrained Short-Term) – Coordinated with Warrenton	\$5,255,000

Figure 8-19 shows the location of the most relevant transit-related roadway improvements.

Figure 8-19 Recommended Capital Facility Improvements



**Capital Facilities**



## TRANSIT-SUPPORTIVE LAND USE

Transit-supportive land use refers to the integration of land use and transit via the creation of compact, walkable, mixed-use neighborhoods within walking distance of a transit stop or station. This pattern of development brings together people, jobs, and services and is designed in a way that makes it efficient, safe, and convenient to travel by walking, bicycling, or riding transit. These same elements also apply to “pedestrian-oriented development” and can be realized at scales ranging from “nodes” to complete neighborhoods. Figure 8-20 illustrates the interdependence between land use, bicycle and pedestrian access, and transit. All three elements are needed to achieve community (and transit) goals – increasing transit ridership, reducing vehicle miles-traveled, and enhancing mobility for all residents.

Figure 8-20 Relationship between Land Use, Transit Service, and Bicycle/Pedestrian Access



## Primary Transit Corridors

Primary transit corridors are not bus routes or a service plan, but a policy tool to help SETD, Clatsop County, and other local jurisdictions manage land use, public infrastructure, and transit service provision. These corridors support a long-term policy goal of providing service that is frequent enough to be convenient. Primary transit corridors help accomplish this policy goal by:

- Identifying where SETD will focus future investments in service capacity, frequency, and amenities – along identified corridors consistent with areas where local jurisdictions will focus land use planning. Influencing zoning and development policies to encourage intensification of land use around transit corridors is a key element of providing the necessary level of ridership and accessibility to support improved transit service.
- Providing direction to local jurisdiction engineers and planners about where street rights-of-way should be designed and managed to help maintain transit operating speed and reliability. This enables transit to provide the best possible user experience, prevents timed-transfer connections from breaking down, and allows transit operating resources to be spent on improving service, rather than simply maintaining headways as traffic congestion increases.

- Encouraging dense and/or transit-intensive land uses to locate on primary/secondary corridors, or at a minimum, along the supporting network. Defining transit corridors communicates preferred locations for uses that generate high transit demand and/or that desire to have transit service. For example, if a planned land use that is known to require transit, such as a social services office, senior facility, or school, chooses not to locate on a primary corridor, they do so with the knowledge that they may not get the best transit service, or any at all. When such uses locate away from transit, they inevitably create pressure for the transit agency to provide service where it cannot be done efficiently.

The preliminary corridors described in this memo are categorized into several tiers based on the type of service provided, e.g., local and regional, and based on their potential for future transit demand and likely phasing:

- **Primary corridors** are the most densely developed corridors or have the highest future potential population/employment density, and/or connect the most significant transit demand generators. They have the highest potential to warrant investments in higher levels of transit service (e.g., more frequent or more direct service).
- **Secondary corridors**, categorized as local or regional, may be less densely developed or have longer-term development potential, and/or serve important but less significant activity centers. They do not warrant the highest levels of service, but are important parts of the SETD system.
- **Potential corridors** could be elevated to a primary or secondary transit corridor(s) if land uses become more transit-supportive (discussed above) and destinations that generate transit demand develop along the corridors. These corridors may have existing service or may not currently be served by transit.

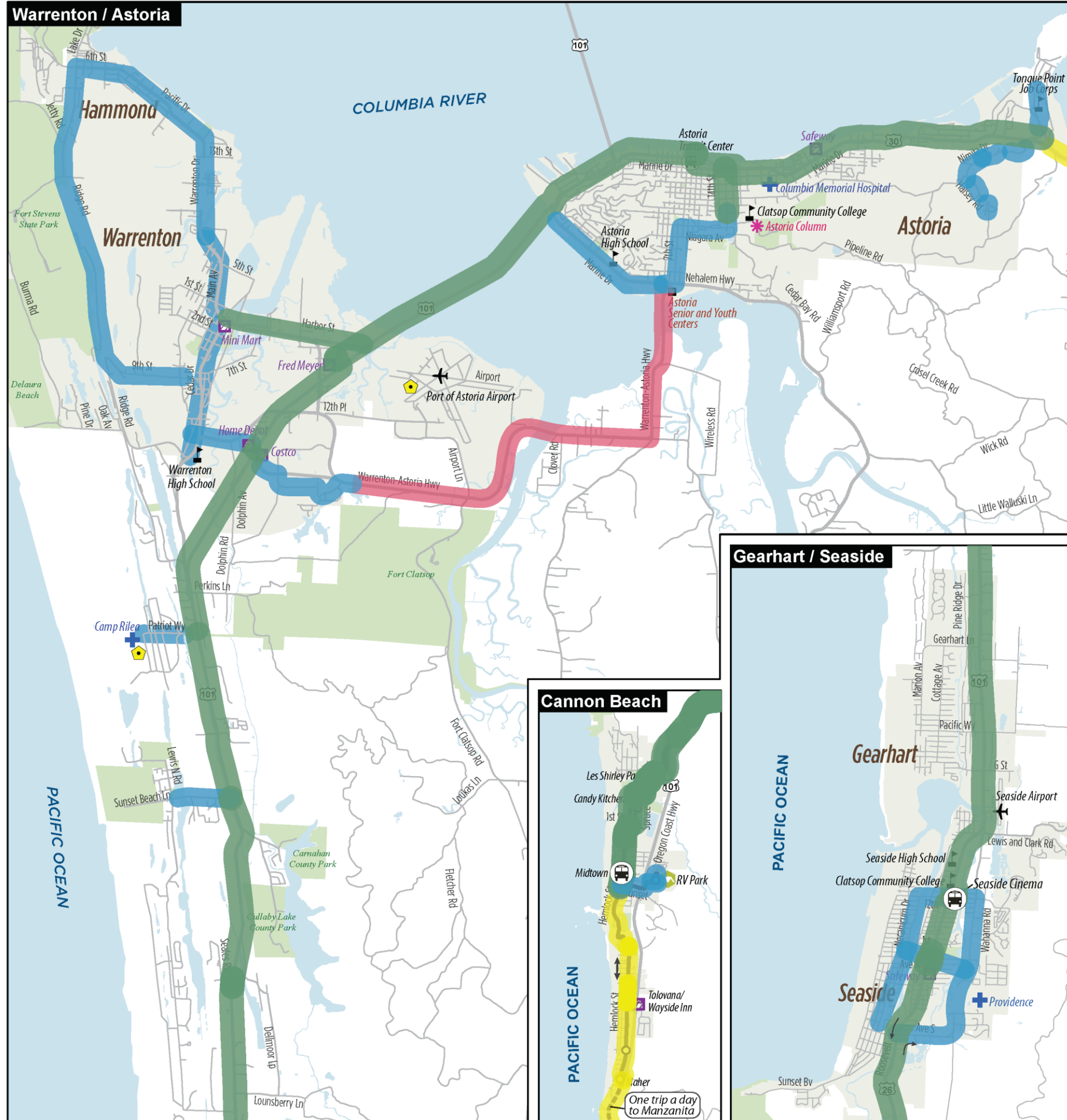
The recommended corridors are illustrated in Figure 8-21.

## Code Recommendations

Land use regulations, present in comprehensive plans and development code, ultimately have the power to create transit-friendly streets with sidewalks, bicycle amenities, and park-and-rides, for example. Over time, integrate recommended comprehensive plan policies into TSP updates and other plans (Figure 2-14) and (Figure 2-15).

Given the level of development in Warrenton, specific language that is adoption-ready for this jurisdiction has been provided in Volume II, Section G.

Figure 8-21 Primary Transit Corridors



**Transit Service**

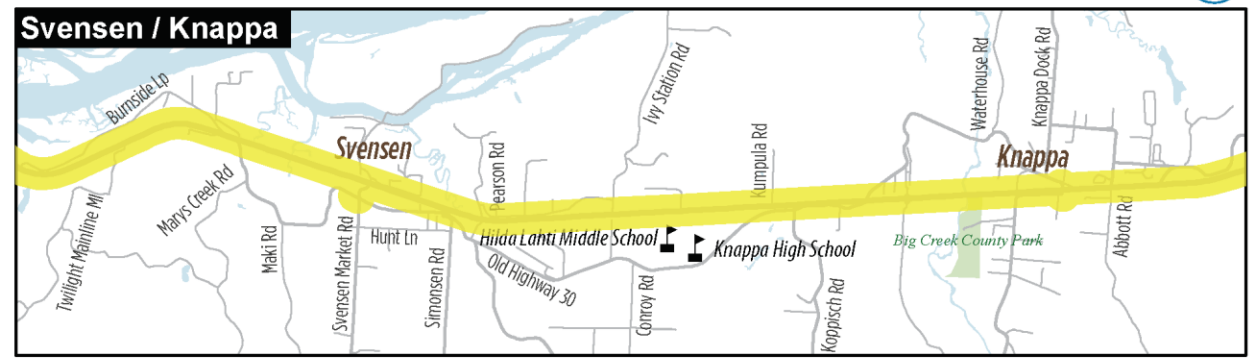
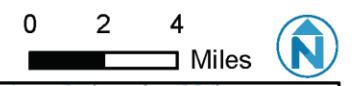
- Sunset Empire Transportation District
- Existing Transit Routes
  - Bus Stops
  - 🚏 Transfer Locations

- Landmarks
- ✳ Attractions
  - 🎓 Education
  - ✈ Airport
  - 🏥 Medical
  - 🛒 Shopping
  - 🚒 Coast/National Guard

**Transit Corridors**

- 🟢 Primary
- 🟡 Secondary Local
- 🟠 Secondary Regional
- 🟣 Potential/Future

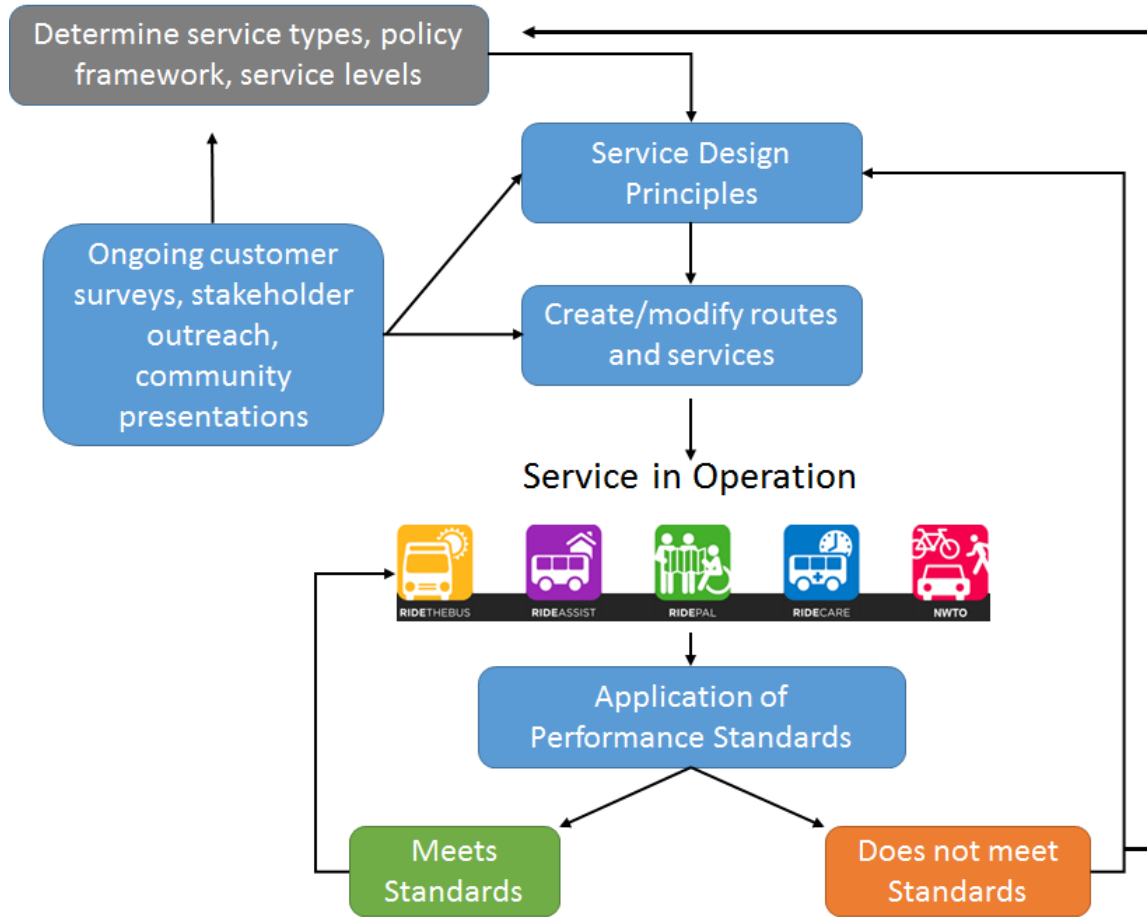
City Boundaries



## 9 EVALUATING PROGRESS

System goals, objectives, performance measures, public input, and actual operation of service are all part of an ongoing process to continually evaluate and improve service. SETD can determine the right level and frequency of service evaluation that is meaningful without being burdensome to staff. The performance framework guides how routes are structured and operated. More information on benchmarks including a peer review of SETD performance compared to regional providers can be found in Volume II Section M.

Figure 9-1 Process for Ongoing Benchmarking and Modification of Service to Meet Customer Needs



For all peer review data, see Appendix C.

Performance measures lead from community and agency goals, and often include a performance standard as well. A definition of these terms is as follows:

- A **performance measure** is a basis for comparison, or a reference point against which other factors can be evaluated. As an example, a performance measure could be how much access a population has to transit service as a way to achieve accessibility.
- A **performance standard** (also known as a “target” or “benchmark”) is defined as a recommendation that is quantifiable. Performance standards are related to a particular performance measure and reflect the acceptable level of performance of that measure. The standards have been defined by using industry standards as well as a review of SETD’s peers.

## SERVICE LEVEL STANDARDS

A route’s hours of operation and frequency, along with other service level characteristics, play a major role in attracting riders. Passengers value convenience and reliability. Service every three hours or service that ends at 6 pm does not provide a convenient option. Service hours and frequencies have a major impact on cost; however, too little investment in service levels results in empty buses.

[Figure 9-2](#) displays performance measures for this category, a brief definition, where to collect the data, how SETD currently performs on the measures, and guidance on metrics for each service type. In some cases benchmarks are the same for each service type, while in other cases the performance measure is the same but the metrics are different.

## COST EFFICIENCY STANDARDS

Cost efficiency points to how well SETD’s level of output (service hours and miles) matches against the cost to operate such service ([Figure 9-3](#)).

## SERVICE EFFICIENCY STANDARDS

Transit services utilize public dollars and are responsible to operate in an efficient manner. [Figure 9-4](#) lists metrics that speak to a system’s efficient use of resources.

## PASSENGER COMFORT/SAFETY STANDARDS

This set of benchmarks ([Figure 9-5](#)) is mostly already tracked by SETD, and speaks to customer satisfaction beyond simply when and where service operates. The key metric not currently tracked is on-time performance, or schedule adherence. Given known summer congestion problems and the problems it causes for SETD riders, tracking on-time performance is crucial to pinpointing exactly when and how often buses are excessively late or trips are missed.

## PASSENGER AMENITY STANDARDS

Every transit trip involves waiting at the stop for a certain amount of time. Passenger amenity standards and benchmarks address making that wait feel safe and comfortable as possible, given limited resources. To help SETD determine where to invest in stop amenities, standards based on ridership levels can be created. This will help the agency handle requests and justify actions. Based upon the spring and summer ridechecks, the general thresholds for high, medium, and lower ridership stops were used to create three tiers of bus stops ([Figure 9-6](#)). Note that shelters are already planned and funded for the new Walmart site, and SETD is also undertaking a process with Northwest Connector to fund additional stop amenities.

Sunset Empire Transportation District

Figure 9-2 Service Level Standards

Performance Measure	Definition	Data Source	SETD Performance (Route No.)	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
Service coverage	Higher population and employment densities support higher levels of transit.	Census	Routes hit population centers with 5-59 people per acre	8-12 people or jobs per acre within ¼ mile of route in urban clusters	6-8 people or jobs per acre within ¼ mile of route	>0.5 people or jobs per acre
Minimum span of service – Weekday	Route start and end times determine how many people will use service.	Service schedules	Intercity: 6 am-10 pm Local: 6 am-7 pm	6 am-10 pm	7 am-7 pm	Same as fixed route
Minimum span of service – Weekend	Route start and end times determine how many people will use service.	Service schedules	Intercity: 8:30 am-5:30 pm (PC), 7:30 am-5:30 pm (30) Local: 6 am-6 pm (15); 9 am-6 pm (21)	8 am-8 pm	8 am-6 pm	Same as fixed route
Service frequencies – Weekday <sup>3</sup>	Service frequency is a key characteristic for attracting riders, but also has a major impact on operating cost.	Service schedules	60 minutes (10, 20, 101); 30-220 minutes (15); 2 trips (30)	60-45 minutes	60-120 minutes	NA
Service frequencies – Weekend <sup>3</sup>	Service frequency is a key characteristic for attracting riders, but also has a major impact on operating cost.	Service schedules	30-220 minutes (15); 3 trips (PC); 30-160 minutes (21)	60-120 minutes	60-120 minutes	NA
Vehicle loading <sup>3</sup>	To ensure passenger comfort, agencies set standards for how many standees are acceptable on a route. On long-haul trips, it is more important to provide a seat for comfort.	Ridecheck or APC data	Not tracked	100%	120%	NA
Service hours per capita	This metric shows how much service is provided to the community.	Rural NTD	Intercity and Local Fixed Route: 0.43 DAR/ADA: 0.1	0.45 - 0.64		0.12 - 0.28
Ridership per capita	This metric shows how much service is consumed by the community.	Rural NTD	Intercity and Local Fixed Route: 4.73 DAR/ADA: 0.17	4.73 – 8.61		0.39 - 0.61

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Performance Measure	Definition	Data Source	SETD Performance (Route No.)	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
Service Availability <sup>3</sup>	Service availability is required in Title VI analysis, and the FTA often cites percent of population as a way of measuring availability.	Census	58.3% within a ¼ mile of transit	Set by each community. FTA does not require a certain standard, but does require tracking progress.		

Figure 9-3 Cost Efficiency Standards

Performance Measure	Definition	Data Source	SETD Performance	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
Operating cost per revenue hour	This metric is reported at system level as it is influenced by fuel, labor, insurance, and other system-wide costs.	Rural NTD; SETD annual report	\$85.37 <sup>6</sup>	\$80-\$130		
Operating cost per trip	Defined as the cost to provide a specific trip, allocating operating cost on a per-passenger basis.	Rural NTD; SETD annual report	Fixed-Route: \$4.74 DAR/ADA: N/A	< \$5	\$6-\$12	<\$25

Figure 9-4 Service Efficiency Standards

Performance Measure	Definition	Data Source	SETD Performance	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
Passengers per revenue hour	The average number of passengers a bus carries for each hour in service.	Rural NTD; SETD ridership reports	Intercity and Local Fixed Route: 17.39 DAR/ADA: 1.67	16-20	6-12	2-4
Passengers per revenue mile	The average number of passengers a bus carries for each mile in service.	Rural NTD; SETD ridership reports	Intercity and Local Fixed Route: 0.78 DAR/ADA: 0.12	1.2	0.25-0.5	0.2
Stop spacing	Close stops provide more access but increase travel times. Balance the need to ensure short walking distances to and from stops with efficient travel time.	SETD GIS data	No existing standard	>1/8-1 mile	>1/8 mile	NA

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Performance Measure	Definition	Data Source	SETD Performance	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
Travel time ratio (bus to auto)	Provide competitive travel times to attract transit riders. If the bus travel time far outweighs driving time, those with a choice will drive.	Schedules for bus times between major destinations; Google maps for auto times	Intercity Examples: - Transit Center to Cinema: 1.6 - McDonald's Seaside to Cannon Beach: 2.3 Local Example: - Emerald Heights to Fred Meyer: 3.1	1.3	3.0	2.0-4.0
Total vehicle hours to revenue hours ratio	A high ratio of total hours to revenue hours reveals unproductive time, such as deadhead hours.	Already collected by SETD	Fixed route: 1.08 <sup>4</sup>	1.2	1.3	NA
Farebox recovery ratio	This measures the percent of operating expenses covered by farebox revenue.	Rural NTD	System-Wide: 15.2%	9.9-12.3% (metric reported at system level for all agencies)		
Transit mode share	The % of trips taken via transit shows transit's role in achieving Transportation Planning Rule goals of reduced VMT	American Community Survey ACS 5-Year Estimates (Table S0801)	Clatsop County: 1.6% (2010-14)	Peer average: 1.26% <sup>5</sup>		




Figure 9-5 Passenger Comfort and Safety Standards

Performance Measure	Definition	Data Source	SETD Performance	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
On-Time Performance	This measures service reliability by comparing how often a vehicle leaves early or late. Most agencies set a target stating that 1-3 minutes early or 5 minutes late counts as "on time."	Ridecheck	NA	80-95%		90-96%
Passenger complaints	Track complaints to gauge customer satisfaction.	SETD reports	17 driver or system complaints per 100,000 boardings <sup>7</sup>	No more than 25 legitimate complaints per 100,000 boardings		
Road calls / maintenance	Road calls are the number of times a vehicle must be taken out of service.	SETD reports	NA	No more than 10 per 100,000 revenue miles.		

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Performance Measure	Definition	Data Source	SETD Performance	Performance Standards <sup>1</sup>		
				Intercity Fixed-Route <sup>2</sup>	Local Fixed-Route	DAR or ADA Paratransit
Safety	Bus accidents disrupt service and indicate operator training needs or street design problems.	SETD reports	1.3 Safety Issues or Incident Reports per 100,000 revenue miles <sup>7</sup>	No more than: 1 preventable accident per 100,000 miles; 2 accidents per 100,000 revenue miles; 2 major accidents per 1,000,000 revenue miles		
No show / late cancellation rate	This tracks the percent of scheduled trips where the passenger is a no-show or failed to provide adequate notice to cancel a trip. It indicates unproductive vehicle time.	SETD reports	27% no-show or cancellation for ADA, DAR, March 2015-Feb 2016 <sup>4</sup>	NA	NA	No-Show / cancellations > 5%
Trip denials	Trip denials show capacity to provide requested rides within 1 hour of the time requested by the passenger. No ADA trips should be denied.	SETD reports	Data Incomplete <sup>4</sup>	NA	NA	No patterns of denied service allowed per ADA

Figure 9-6 Amenity Standards and Benchmarks

	Tier 1: Basic Bus Stop	Tier 2: Major Bus Stop with Shelter	Tier 3: Enhanced Bus Stop
Examples of Uses	<ul style="list-style-type: none"> <li>Typical stop with a concrete pad, route sign, map/schedule, and information in Braille</li> </ul>	<ul style="list-style-type: none"> <li>High Use Stops, Transfer Point</li> </ul>	<ul style="list-style-type: none"> <li>Transit Centers, Highest ridership location, Park-and-Ride</li> </ul>
Example Location	<ul style="list-style-type: none"> <li>Geno's, Crest Motel</li> </ul>	<ul style="list-style-type: none"> <li>Midtown Cannon Beach; Rainier; Sunset Beach; Emerald Heights; Tongue Point</li> </ul>	<ul style="list-style-type: none"> <li>Transit Center in Astoria; Seaside Cinema; Fred Meyer hub; Clatsop Community College</li> </ul>
Ridership	<ul style="list-style-type: none"> <li>Low = &lt;10 Daily Boardings</li> </ul>	<ul style="list-style-type: none"> <li>Medium = 10-25 Daily Boardings</li> </ul>	<ul style="list-style-type: none"> <li>High = &gt;25 Daily Boardings</li> </ul>
Required / Preferred Elements <sup>1</sup>	<ul style="list-style-type: none"> <li>Concrete landing pad</li> <li>Route sign</li> <li>Schedule</li> <li>Lighting</li> <li>Continuous pedestrian access</li> <li>Well-maintained pull-off location (if stop is a pull-off)</li> </ul>	<ul style="list-style-type: none"> <li>Concrete landing pad</li> <li>Route sign</li> <li>Schedule</li> <li>Lighting</li> <li>Continuous pedestrian access</li> <li>Well-maintained pull-off location (if stop is a pull-off)</li> <li>Shelter / seating</li> </ul>	<ul style="list-style-type: none"> <li>Concrete landing pad</li> <li>Route sign</li> <li>System map / Schedule</li> <li>Lighting</li> <li>Continuous pedestrian access</li> <li>Well-maintained pull-off location (if stop is a pull-off)</li> <li>High-capacity shelter(s)</li> <li>Trash can</li> <li>Designated park and ride spaces</li> </ul>
Optional Elements	<ul style="list-style-type: none"> <li>System map / schedules</li> <li>Bench</li> </ul>	<ul style="list-style-type: none"> <li>System map / schedules</li> <li>Secure bicycle parking</li> <li>Trash can</li> </ul>	<ul style="list-style-type: none"> <li>Real-time information</li> <li>Secure bicycle parking</li> <li>Placemaking / art</li> <li>Solar shelters</li> <li>Solar lighting</li> </ul>
Photo Examples			

**Notes for all tables:**

<sup>1</sup> Standards are preliminary thresholds of acceptable performance based on peer systems and industry norms.

<sup>2</sup> Includes main intercity routes such as Connector routes or Route 101.

<sup>3</sup> Represents a Title VI required measure (system-wide service standard per FTA Circular 4702.1B). FTA does not prescribe the benchmark itself, but the tracking of such metrics.

<sup>4</sup> Data source: March 2015-February 2016, provided by SETD

<sup>5</sup> Peer ACS data: Redwood (Del Norte Co, CA): 0.8%; Columbia Co, WA: 0.9%; Lincoln Co, OR: 1.7%; Tillamook Co, OR: 0.9%; Grays Harbor Co, WA: 1.7%; Jefferson Co, WA: 1.9%; Pacific Co, WA: 0.6%

<sup>6</sup>Based on Rural National Transit Database Reporting, for all services (Fixed-route plus demand-response).

<sup>7</sup>Data source: March 2015-February 2016. SETD is currently correcting how this data was originally classified.

## 10 THE NEXT 20 YEARS

This plan lays out a vision with clear, implementable steps toward robust and convenient public transportation in Clatsop County. Improvements can start immediately; the first several years of plan phasing are fiscally constrained based upon actual projections of resources, and can demonstrate to the public SETD's commitment to high-quality service. The system has a well-established base of existing users who rely upon and appreciate service. During this time of growth locally as well as interest statewide and nationwide in a lifestyle inclusive of public transportation, SETD has the opportunity to capture a broader market as well as better serve its existing riders.