

# **TECHNICAL MEMORANDUM #3**

Date:	September 15, 2022September 15, 2022	Project #: 27091
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From:	Susan Wright, PE; Amy Griffiths, EIT; Kittelson & Associates, Inc.	
Project:	Gorge Regional Transit Strategy (GRTS) Phase 2	
Subject:	Regional Travel Patterns, Transit Gaps, and Opportunities Analysis	

## INTRODUCTION

This memorandum summarizes and assesses current and future travel patterns of residents and visitors within and connecting to the Project Area, shown in Figure 1. This information is compared to the existing transit operations documented in *Memo #2: Existing Operations* to identify where coordination opportunities exist and outline service enhancements that support achievement of the regional Vision. Draft service levels and operations costs are documented for basic, moderate, and high levels of service scenarios.

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## TRAVEL PATTERNS

A travel-shed level travel pattern analysis was conducted to understand existing and future travel patterns of residents and visitors within and connecting to the Project Area. Demographics, employment, and tourism were reviewed to identify where there is existing and future need for transit in the area.

## **Demographic Analysis**

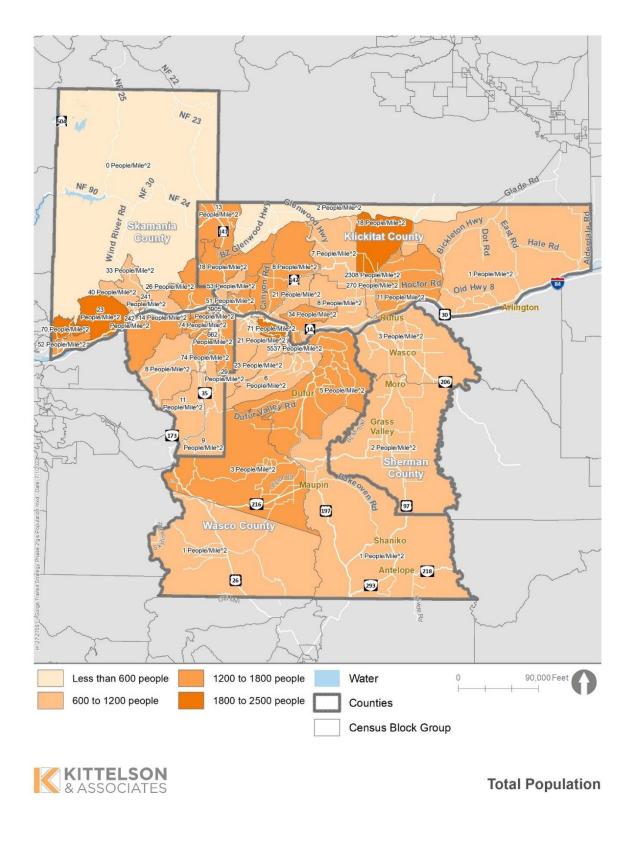
The following describes the general population characteristics, Title VI populations, and other demographic characteristics in the study area. The Gorge Regional Transit Strategy aims to examine how to improve access to low-income, senior, and populations, people of color, people with disabilities, tribal communities, and other potentially vulnerable and transit-dependent groups. It also seeks to connect the general population to jobs and tourism destinations.

### **General Population**

Figure 1 shows the total population in each block group throughout the five counties with the population density labeled for each block group.

There are approximately 90,000 people living within the five counties. A majority of the people live in dispersed area: approximately 60% of people live in block groups with population densities less than 500 people per square mile. The City of Hood River, City of The Dalles, Goldendale, and White Salmon all have higher population densities, with block population densities up to 6,475 people per square mile.

### Figure 1. Total Population



Source: United States Census, 2020

## Title VI Populations Overview

Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d-1) states that "no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." In combination with subsequent federal nondiscrimination statutes, agencies receiving federal financial aid are prohibited from discriminating based on race, color, national origin, age, economic status, disability, or sex (gender). Other relevant federal statutes include the Federal-Aid Highway Act, the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, the Civil Rights Restoration Act of 1987, the Americans with Disabilities Act of 1990 (ADA), Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations, and Executive Order 13166 Improving Access to Services for Persons with Limited English Proficiency.<sup>1</sup>

## Age

Figure 4 and Figure 5 illustrate the number of elderly and youth living in the study area, respectively. Approximately 40% of the population in the study area is over the age of 64 or under the age of 18. Klickitat County has relatively high percentages of elderly people living throughout the county. There are also higher number of elderly and youth living in incorporated cities, including the City of The Dalles and Hood River. The population of youth are more dispersed throughout the block groups, with the highest percentages of youth living in incorporated cities including the City of The Dalles and Hood River.

## **Household Income**

Figure 6 displays the number of individuals experiencing income under 200% of the federal poverty line. The federal poverty level is calculated by the size of the household and is adjusted annually – the federal poverty level for an individual is \$12,490 in annual earnings, and \$25,750 for a household of four.<sup>2</sup>

Approximately one-quarter of the population in the study area is experiencing income under 200% of the federal poverty line. There are higher percentages of people experiencing income under 200% of the federal poverty line are living in Klickitat and Hood River Counties, and some block groups within the City of The Dalles, Stevenson, and Hood River.

### **Race and Ethnicity**

Figure 7 illustrates the presence of minority populations. In the U.S. Census Bureau's American Community Survey, minority populations include non-white racial groups as well as people identifying as Hispanic or Latino. As shown, concentrations of black, indigenous, and community of color are located to the southwest of Wasco County (the land of the Warm Springs Native American Tribe) and northwest, east of the Chenoweth Connection No. 2 route, and around the unincorporated community of Chenoweth. There are also concentrations of minority populations living in Hood River County, with the highest density of non-white populations in the City of The Dalles and the City of Hood River.

## Populations with a Disability

Figure 8 illustrates the locations of households with people with disabilities within the Study Area. There are high percentages of the populations living throughout Sherman County, the southern block groups in Klickitat County, and the and in the southern areas of Klickitat County and in the rural communities

<sup>&</sup>lt;sup>1</sup> Title VI populations include individuals who identify as minorities (both racial and ethnic), low-income, disabled, elderly (65+), and youth/children (under 18). (FTA. 2015. Title VI of the Civil Rights Act of 1964, available at http://www.fta.dot.gov/civilrights/12328.html).

<sup>&</sup>lt;sup>2</sup> <u>https://www.healthcare.gov/glossary/federal-poverty-level-fpl/</u>

around Wasco County. High concentrations of people with disabilities are located within the City of The Dalles.

## Veterans

Figure 9 shows the populations of veterans in the county by census block group. Higher populations of veterans live throughout the rural block groups in the study area, particularly in the center of Klickitat County in the vicinity of Goldendale.

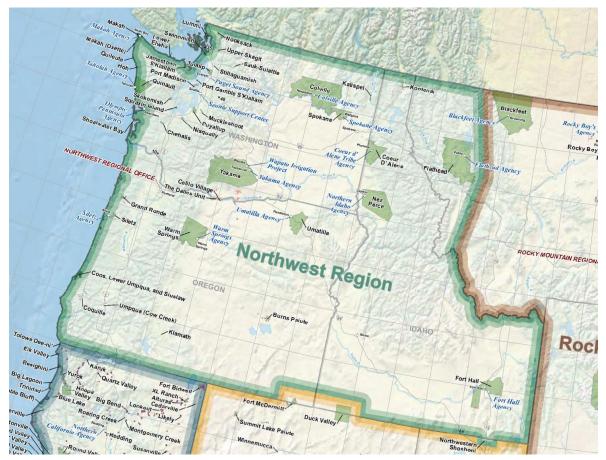
## Vehicle Access

Figure 10 shows the number of households without vehicle access in the study area. The City of The Dalles, City of Hood River, and Goldendale have the highest concentrations of people without access to vehicles. There is also a relatively high population of people without access to vehicles living in Klickitat County between SR-141 and SR-142.

## **Tribal Communities**

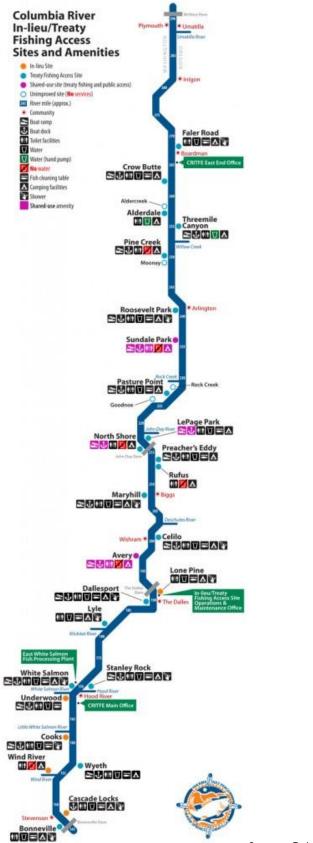
These tribes include the Confederated Tribes of the Warm Springs, and Yakama Nation, Nez Perce Tribe and the Confederated Tribes of Umatilla Indian Reservation. The Warm Springs and Yakama Tribes have ceded lands within the National Scenic Area but all four have strong ties to the river. The Forest Service also consults with the Confederated Tribes of the Grand Ronde, the Cowlitz Tribe and the Siletz Tribe. Figure 2 shows the location of federally recognized tribal lane in the northwest region of the United States. Figure 3 shows the locations of 31 fishing sites along the Columbia River that are maintained by Columbia River Inter-Tribal Fish Commission (CRITFC) for the exclusive use of Indian fishers from the four CRITFC member tribes.<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> Three sites do have shared-use facilities with the public.



### Figure 2. Lands of Federally Recognized Tribes in the United States

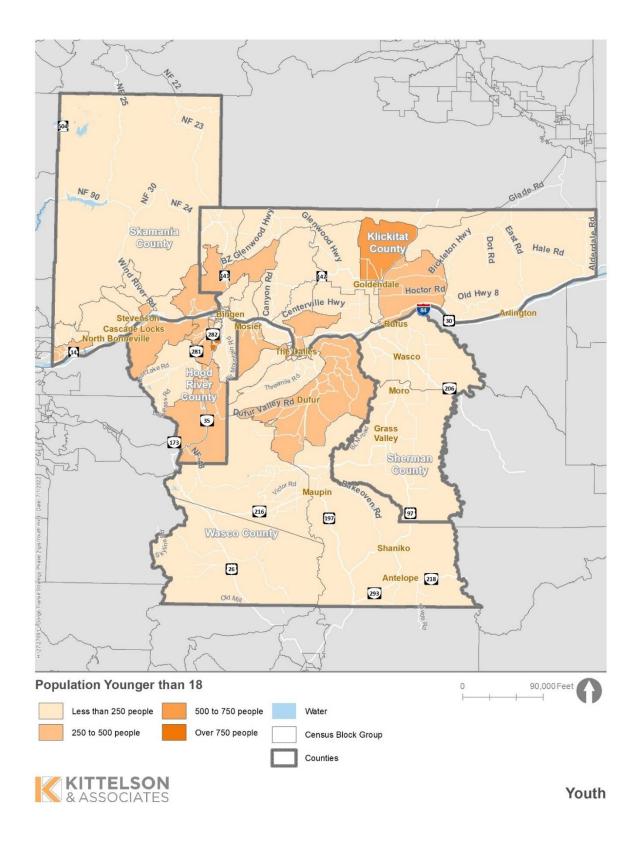
Source: Bureau of Indian Affairs Department of the Interior Office of Trust Services; June 2016



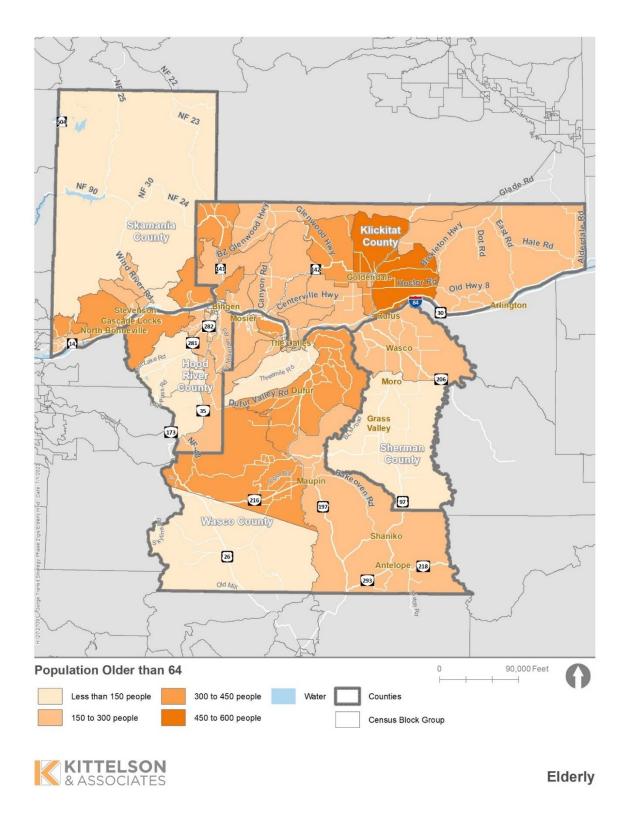
### Figure 3. Columbia River In-lieu/Treaty Fishing Access Sites and Amenities

Source: Columbia River Inter-Tribal Fish Commission

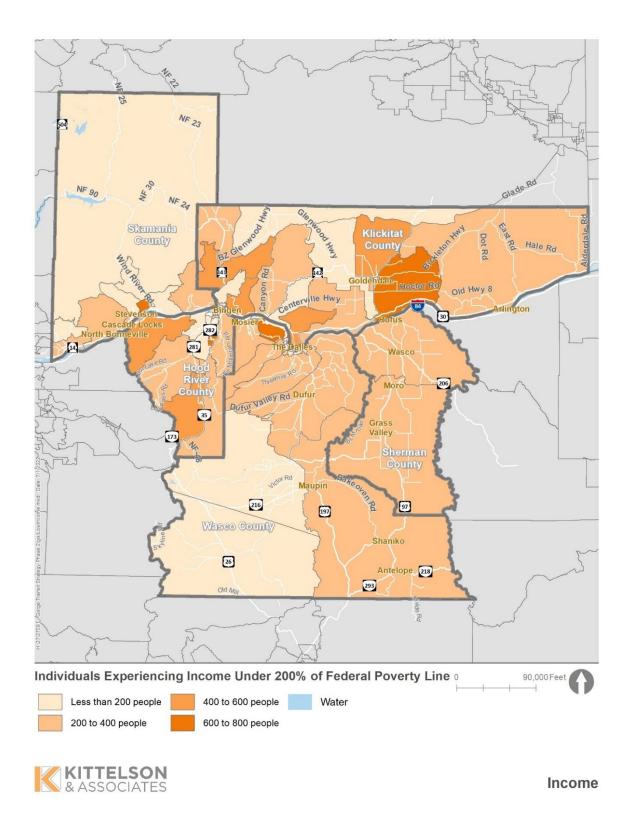
### Figure 4. Youth



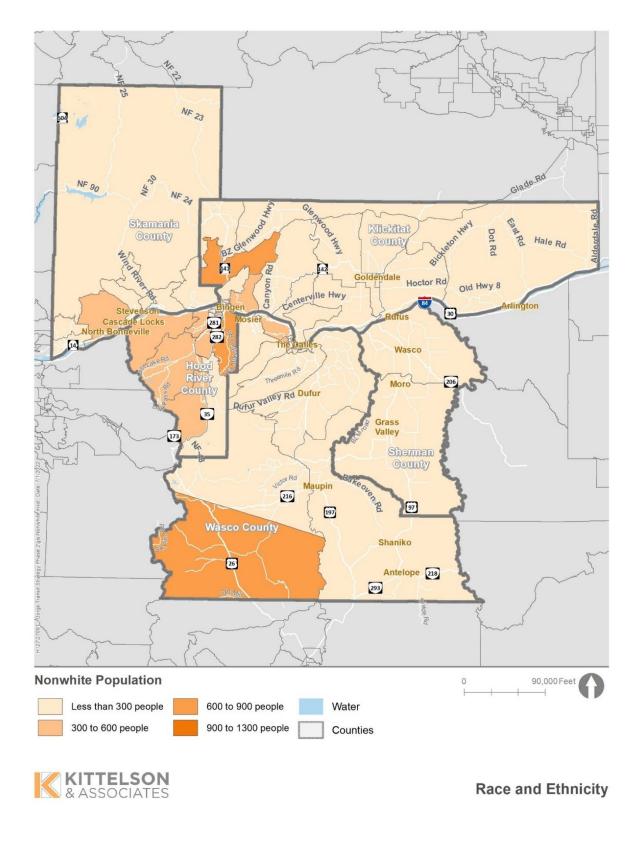
### Figure 5. Elderly



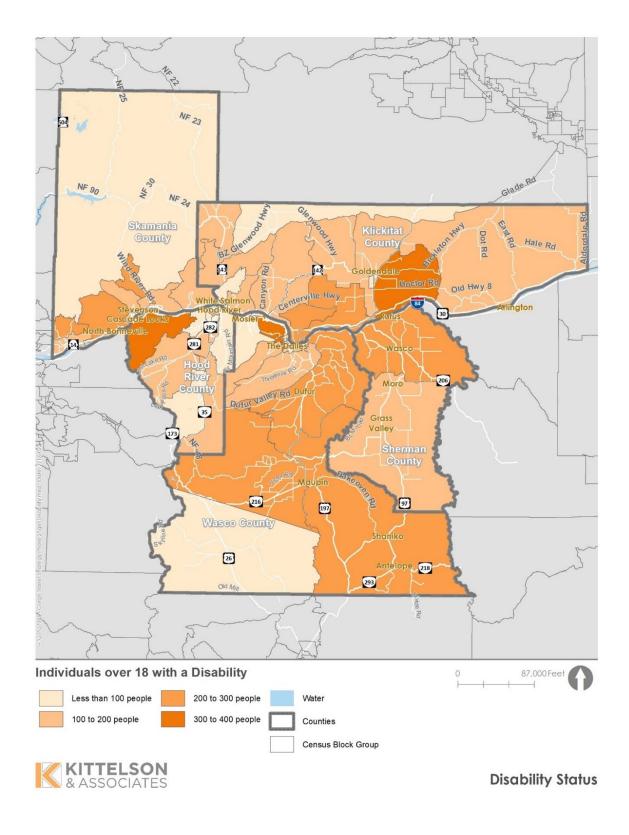
### Figure 6. Household Income



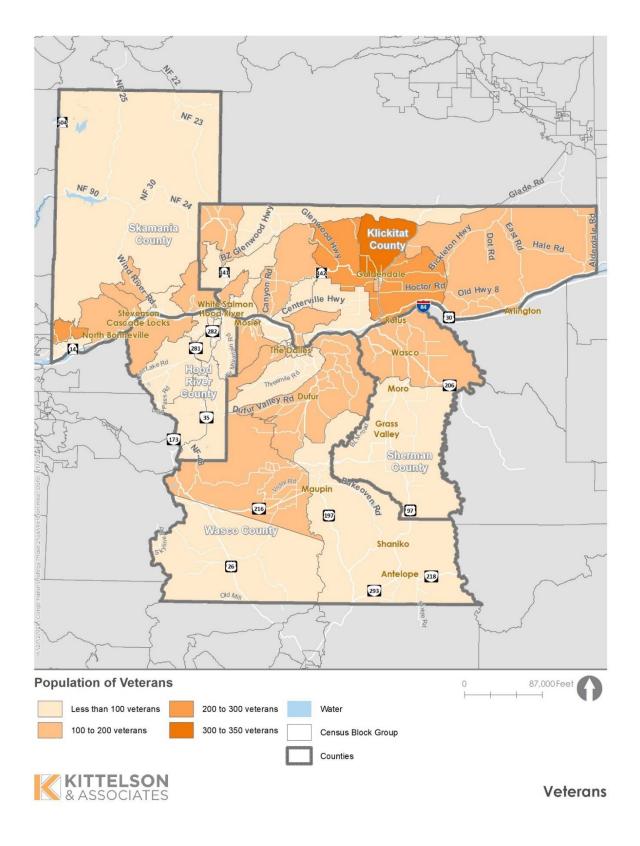
### Figure 7. Race and Ethnicity

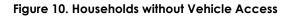


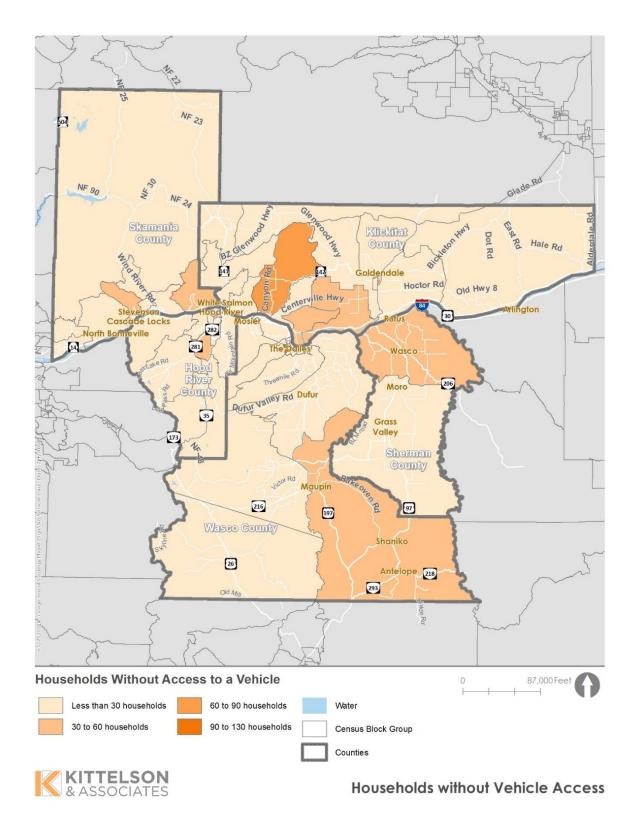
### Figure 8. Populations with a Disability



### Figure 9. Veterans







Source: American Community Survey 5-Year Estimates, 2020

## Jobs and Employment

This section describes employment and commuting patterns in the study area. This information is largely based on Longitudinal Employer–Household Dynamics (LEHD) employment data from the U.S. Census Bureau. This dataset provides valuable information about where workers live and work. Since this dataset is generated based on administrative records, some work locations may be over- or underrepresented. For example, if for example, state workers in The Dalles have their paychecks processed with an address in Salem, their job site may be shown in Salem instead of The Dalles, if no local address is given in the administrative data. All data in this section are from 2018, which is the most recent year with complete data.

Key findings include:

- There are high volumes of commuters traveling between the City of Hood River and the City of The Dalles that could benefit from increased frequency in intercity transit
  - Commuters, particularly those with shifts starting or ending outside of typical service hours, would also benefit from enhanced carpool and vanpool opportunities
- There are relatively high volumes of commuters travelling between the City of White Salmon and The City of Hood River that could benefit from increased fixed route transit or increased vanpool/carpool opportunities
- There are moderate volumes of commuters travelling between the City of Goldendale and The Dalles and the City of White Salmon and The Dalles that could benefit from enhanced carpool and vanpool options
- High percentages of commuters travel outside the city they live for work

Additional information about travel commute patterns is provided in Appendix A.

Table 1 shows the largest employers in Skamania County, Klickitat County, Hood River County, Wasco County, and Sherman County.

County	Employer Size	Employer
	Over 500 Employees	Hood River County School District, Providence Health
	251 to 500 Employees	Insitu, Cardinal IG Company
Hood River County	101 to 250 Employees	Best Western-Hood River and Cascade Locks, Full Sail Brewing Co, Hood River County, Hood River Juice Company/Ryan's Juice, Hood Technology Corporation, Mt. Hood Meadows Ski Resort, One Community Health, Rosauers, Safeway, Turtle Island Foods, Inc./Tofurkey, USACE Bonneville Dam
	51 to 100 Employees	City of Hood River, Diamond Fruit Growers, Duckwall-Pooley Fruit Co, Hood River Distillers, Pfriem Brewing, The Next Door, Inc, Walmart, Hood River Care Center
Wasco County	Over 500 Employees	Mid-Columbia Medical Center
wasco County	251-500 Employees	Northern Wasco County School District 21, Oregon Cherry Growers, Fred Meyer

### Table 1. Largest Employers

	101-250 Employees	Oregon Veteran's Home, Columbia Gorge Community College, Azure Standard, Google, Wasco County, City of The Dalles
	51 to 100 Employees	Cousin's Country Inn, Orchard View Farms, Columbia Basin Care Facility, Powder Pure, Mill Creek Point Assisted Living, Crestline Construction, Northwest Aluminum Specialties- Hydro, Bonneville Power Administration, One Community Health, Columbia Gorge Toyota/Honda Motors, Northern Wasco PUD
Sherman County	50-200 Employees	Azure Standard, Mid-Columbia Producers, Evergreen
sneman Coonly	20 to 49 Employees	Sherman County School District, Sherman County
	Over 250	Insitu, K-12 Schools, Local Government
Klickitat County	101-250 Employees	Underwood Fruit Packaging, White Salmon School District, Goldendale School District, Klickitat Valley Hospital, Wind Power Companies, Roosevelt Landfill
	51 to 100 Employees	Innovative Composite Engineering, Custom Interface, Sagetech, County PUD, Mercer Canyon
	Over 50 Employees	Skamania Lodge, Stevenson Carson School Districts, Skamania School, WKO
Skamania County	21-50 Employees	A&J Market, Silverstar, Backwoods Brewing Company, Columbia River Gorge National Scenic Area, Columbia River Realty ERA Powered, PD No.1 of Skamania County, Slingshot Sports, Waste Management, Windermere Realestate, Rock Cove Assisted Living, City of Stevenson, Mill A School System

Table 2 summarizes where workers are employed for the most-populous cities in each of the five counties. The City of The Dalles and the City of Hood River have approximately 800 people traveling between them for work. Approximately 85 people travel between the City of Goldendale and the City of The Dalles for work. Intercity transit service can help employees travel to and from work between cities with high volumes of commuters traveling between them for work. Areas with lower volumes of commuters traveling between them for work could still benefit from organized carpools and vanpools.

City			Work Location								
		Hood River	The Dalles	Wasco	Goldendale	Stevenson	White Salmon	Bingen	Cascade Locks	Mosier	
	Hood River	1,543	283	1	11	15	52	37	23	1	
	The Dalles	507	3,508	6	29	-	26	22	11	13	
u	Wasco	-	20	10	3	-	-	-	-	-	
	Goldendale	11	55	5	344	2	17	19	-	-	
Location	Stevenson	23	-	-	3	203	6	1	7	-	
Home Lo	White Salmon	132	43	-	10	17	139	70	2	1	
우	Bingen	33	10	-	7	8	30	12	-	-	
	Cascade Locks	104	15	-	1	6	7	3	20	-	
	Mosier	26	53	-	1	-	-	3	-	-	

### Table 2. Resident Work Locations

Approximately 70-80% of people living in Wasco City, Goldendale, and Stevenson commute to other cities for work. Approximately 55-60% of people living in The Dalles and The City of Hood River commute to other cities for work,

## **Tourism and Recreation**

The Columbia River Gorge's unique attributes and recreational opportunities, including trailheads, breweries, restaurants, wineries, disc golf courses, parks, small farms, riverfront parks and boat launches for kayaking, rafting, and boating, attract millions of visitors a year.<sup>1</sup> According to the Columbia River Gorge Scenic (CRGNSA) Area 2016 Visitor Use Report, about 55% of visits are from those living in the local area within 50 miles of the forest. Approximately 85% of visitors participate in a hiking or walking activity during their visit. An increased use of the trails and recreation sites along SR 14 and the Historic Columbia River Highway has impacted user experiences, particularly on weekends and holidays in the spring and summer. As the region population continues to grow, the number of people who use SR-14 to access Gorge recreation sites and pass through the corridor place a strain on the CRGNSA

Key findings include:

- There is a need to strengthen the Columbia Gorge Express by increasing frequency, evening hours, and supporting local access to regional service so that visitors and residents can connect from regional service to local destinations.
- There are a large number of trails and popular recreation destinations along SR-14 and I-84: explore options to add stops to existing routes at some of these locations.
- Operate weekend service for all providers. This would expand commute options for people without traditional work schedules and allow visitors and residents with more traditional work schedules to use transit to access recreation on weekends.
- Provide more direct transfers from all towns. Routes should be coordinated to provide a smooth line from all points east (Goldendale, The Dalles, White Salmon, Hood River, Cascade Locks, and

Stevenson, and Portland). Today some routes have long waits before making the next leg of a connection.

- Continue building public and private partnerships to serve recreation opportunities. Working with the Sasquatch Shuttle and the Grey Line of Portland<sup>4</sup> to provide access for residents in the study area to access recreation opportunities without vehicles.
  - For example, access between White Salmon and Goldendale (with a side journey up Hwy 8) could provide access to Lyle, many trails along Highway 14, wineries, and the Maryhill Museum.

### Mt. Hood & Columbia River Gorge / Summary Trend

Total spending in Mt. Hood and the Columbia River Gorge, as reported in the Travel Oregon Economic Impact Report (May 2022), was \$440 million dollars in 2021. This includes approximately \$41 million on local transportation and gas. The average annual percent change in spending is 3.6%/year between 2003 and 2021 – excluding adjustments for inflation.

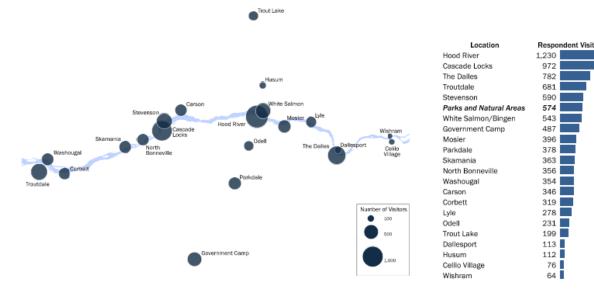
The most common overnight marketable person-trips in Mt. Hood-Columbia River Gorge in 2017, according to the Oregon 2017 Regional Visitor Report, were (in order of prevalence) vising state parks, landmarks/historic sites, shopping, hiking/backpacking, fine dining, waterfront parks, breweries, museums, camping, swimming, and wineries.

ECONorthwest identified barriers to visiting the Gorge. Approximately 5.8% of visitors and 3.4% of nonvisitors cite lack of public transportation options as the largest barriers to visiting the Gorge. Respondents identified more public transportation options or shuttles, more parking with improved security, and less crowding and traffic as factors that would make them consider visiting the Gorge more often. Hood River, Cascade Locks, and The Dalles were the most popular travel destinations. According to this survey, hiking is the primary motivating activity for approximately one-third of visitors.

### Figure 11. Common Visitor Destinations in the Gorge



Places respondents visited in the Columbia Gorge



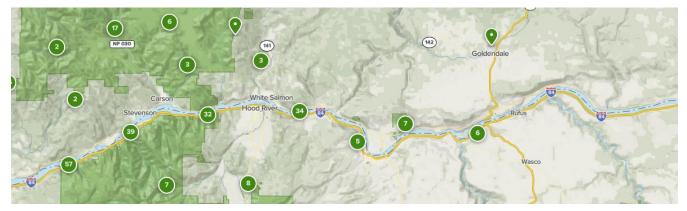
<sup>&</sup>lt;sup>4</sup> Private shuttles only provide stops along the Oregon side of The Columbia River Gorge.

Source: Columbia River Gorge Visitor Opportunities Study, 2015

#### Outdoor Recreation

Figure 12 provides a map of popular trailheads located along the Columbia River Gorge. The circles show quantities of identified trailheads in the area, with high concentrations of trailheads located along SR-14 and I-84 west of The Dalles.

#### Figure 12. Map of Popular Trails Located along the Columbia River Gorge



#### Source: AllTrails

The SR 14 and Dog Mountain Congestion and Safety Study identified the following popular recreation sites along SR 14 in the study area:

- Steigerwald National
   Wildlife Refuge
- Ozone Climbing
- Cape Horn Lookout (Viewpoint)
- Cape Horn Trailhead / Salmon Falls Park and Ride
- St. Cloud
- Franz Lake Overlook
- Sams Waler Day Use
- Doetsch Ranch Day Use Area
- Beacon Rock State Park (Kueffler Rd)
- Beacon Rock Trailhead/Hamilton Mountain Access
- Bonneville Discovery
  Trails

- Ft. Cascades Trailhead
- Bonneville Trailhead
- Pacific Crest Trail
- Bridge of the Gods
   Historical Marker
- Home Valley
   Park/Campground
- Dog Mountain Trail
- Dry Creek Falls
- Little White Salmon
   National Fish Hatchery
- Drano Lake Boat Ramp
- Swell City
- Spring Creek Fish Hatchery State Park
- Coyote Wall Trailhead
- East Syncline Trail / Rowland Lake

- Catherine Creek (Old Hwy 8)
- Chamberlain Lake Safety Rest Area
- Balfour-Klickitat Trailhead (Old Hwy 8)
- Klickitat Spit
- Lyle Cherry Orchard
   Trailhead
- Dough's Beach State Park
- Columbia Hills Historical
   State Park
- Horsethief Butte Trailhead
- Crawford Oaks
   Trailhead
- Avery Recreation (State Park) Boat Launch

As shown in Figure 13 listed above, eight trailheads along SR 14 have consistent and recurring congestion and/or safety concerns.





Additionally, the Waterfall Corridor Timed Use Permit was implemented: between May 24 and September 5 a timed use permit is required for personal vehicles accessing federal lands adjacent to the Waterfall Corridor (a section of US 30 on the Oregon side of the river) between 9 a.m. and 6 p.m. Figure 14 illustrates the trails that will require a permit during the summer to mitigate congestion and improve access for emergency responders.

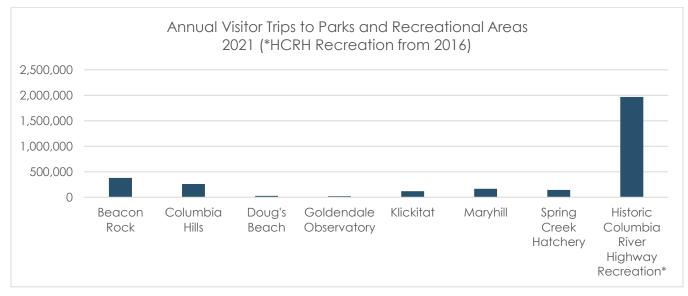




Source: Waterfall Corridor Improved Access, Oregon.gov

15 summarizes the magnitude of trips to parks and recreational areas along the Columbia River Gorge.

Columbia Area Transit provides service to The Dog Mountain Trailhead along SR-14 on weekends between April 23 and June 12. It also provides service to Multhomah Falls all year from Gateway Transit Center in the Portland metro Area, Cascade Locks, and Hood River directly. The Grey Line Waterfall Trolley and Sasquatch Shuttles are two privately-run companies that provide access between Corbett, Crown Point (Vista House), Latourell Falls, Bridal Veil Falls, Angels Rest, Wahkeena Falls, Multhomah Falls (and Lodge), Horsetail Falls and Ainsworth State Park, and Troutdale for between \$15-21.15. Visitor Trips to Parks and Recreational Areas along the Columbia River Gorge by Year and Month



Source: Washington Parks Visitation Reports, USDA Forest Service Visitation and Visitor Characteristics at Forest Service Recreation Opportunities along the Historic Columbia River Highway

In addition to the trailhead and state park destinations described above, the following regionally significant areas were identified by the stakeholder advisory group and advisory committee as locations attracting visitors, tourists, local residents, and/or employees throughout the Gorge:

- The Port of Klickitat
- Hood River Waterfront
- Skamania Lodge
- Hood River Aquatic Center
- Goldendale Observatory
- Bonneville Dam and Fish Hatchery
- Additional trailheads including the Historic Highway State Park, Mark Hatfield Trailhead, Mosier Plateau Trailhead, Rowena Crest/Tom McCall Trailhead, The Dalles Riverfront Trial, and Tamanawas Falls Trail

### **Future Travel Patterns**

Portland State University (PSU) provides population forecasts for counties in Oregon from 2020 through 2040. The State of Washington Office of Financial Management created county growth management population projections in 2017 forecasting populations to 2040. The following trends were forecast:

- Hood River County, Wasco County, and Sherman County are all projected to grow in racial and ethnic diversity (this data not available for the counties in Washington although a similar trend is anticipated).
- The populations of all counties in the study area are aging and total fertility rates are declining.
- Hood River County is projected to continue to increase steadily, gaining 5,000 residents by 2045 and another 5,000 by 2070. The population growth is anticipated to slow due to a lower total

fertility rate and an aging population, however the County is projected to continue having net inmigration. Hood River City is projected to grow at a faster rate than the rest of the County, Cascade Locks and the areas outside UGBs are projected to grow slower.

- Wasco County is projected to grow at a slightly faster pace in the near-term compared to the long-term. Even so, Wasco County's total population is forecast to increase by nearly 4,400 over the next 19 years (2016-2035) and by more than 10,500 over the entire 50-year forecast period (2016-2066). The Dalles, Mosier, and the area outside UGBs are expected to grow the most of all of Wasco County's sub-areas.
- Total population in Sherman County as a whole, as well as within the majority of its sub-areas, will likely continue to decline to a slow pace throughout the forecast period. Population decline is largely driven by an aging population and natural decrease outpacing net in-migration. Sherman County's total population is forecast to decline by roughly 90 people over the next 25 years (2019-2044) and by more than 130 over the entire 50-year period (2019-2069).
- Klickitat County's growth rate is projected to decline and eventually become negative. Between 2020 and 2030 the total population in Klickitat County is projected to increase by 544 people and between 2030 and 2040 the population is projected to decrease by 259 people as a result from an aging population and projected increase in death rates.
- Skamania County's growth rate is projected to decline due to a decrease in birth rates and increase in death rates. The net in-migration is anticipated to maintain positive growth in the county: between 2020 and 2030 the total population in Skamania County is projected to increase by 973 people and between 2030 and 2040 the population is projected to increase by 697 people.

The increase in population in Hood River County, Wasco County, and Skamania County, the aging population base across all counties, and the increase in racial and ethnic diversity across Oregon and likely in Washington increases the communities' need for transit access to essential destinations including health facilities, recreation, shopping, and more. The increase in elderly populations may increase the demand on dial-a-ride and paratransit services that providers need to accommodate.

## Infrastructure Availability

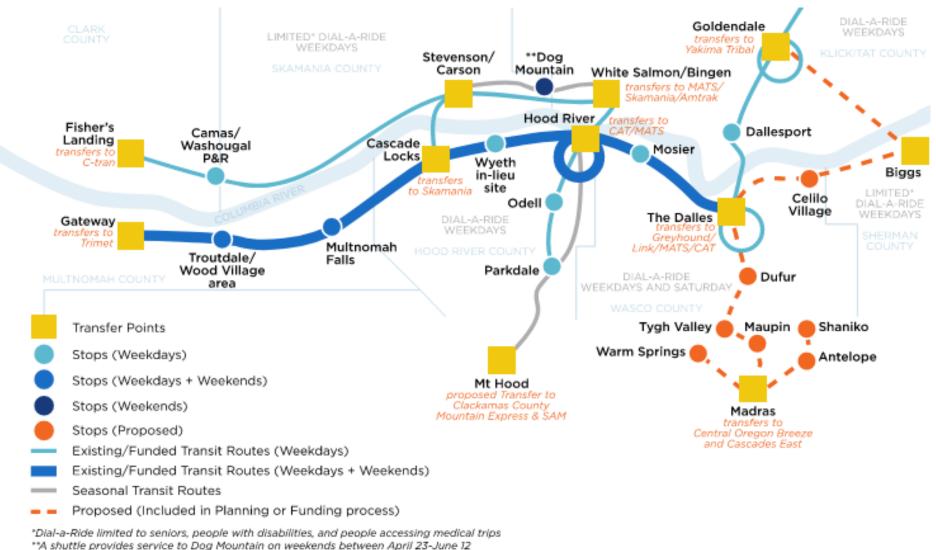
Figure 16 summarizes existing transit services in the study area. Table 3 describes the type of service provided in the area.

- Local fixed-route service is provided in Hood River, The Dalles, and Goldendale. This service is costefficient in areas with greater population and/or employment densities.
- Demand-response service is provided in all counties in the form of Dial-a-Ride transit. This service type is an effective way to serve populations reliant on transit living in areas with lower population density and people qualifying for ADA transit who require curb-to-curb service.
- Shuttles are provided by Sherman County Transit and The LINK to provide weekly shopping access to more rural communities.
- Rural intercity or commuter service is provided between Parkdale, Odell, and Hood River, between Wyeth State Park to Bridge of the Gods, between The Dalles and Goldendale, between Bingen, Stevenson, Cascade Locks, and Vancouver, and between White Salmon and Hood River. Frequency of this service can be scaled to meet demand.
- Intercity express service is provided between the Dalles, Mosier, and Hood River, and between Hood River and Portland. This service is appropriate where there is considerable demand or commute patterns between locations.

Most service providers provide service on weekdays only; CAT runs local and intercity service every day. The LINK also offers Dial-a-Ride on Saturday.

### Table 3. Service Type Descriptions

Service Type	Application
Local Fixed-Route Service	Local fixed-route services tend to be the most visible and are increasingly cost efficient as ridership increases and are suitable in areas with higher population and/or employment densities.
Demand-Response Service	Demand-response services improve accessibility to people in areas with lower population densities or to people who need curb-to-curb service, but the cost per trip can be significantly higher than other service types.
Shuttles	Shuttles are designed to serve regular trips to key local or regional activity centers such as commercial districts, grocery stores, or medical facilities. These routes may be the only regular or fixed-route service available within the area or times that they operate. Service models for shuttles are typically deviated fixed-route or demand-responsive.
Vanpools	Vanpools can be considered public transportation services. Vanpools are well-suited to commute trips between clustered residences and job locations, and vanpool fares can cover much of the expense of operating the program.
Volunteer Driver Program	Volunteer driver programs are intended to provide transportation services for those with unmet transportation needs. These programs are often focused on providing medical rides but can be expanded to provide access to other destinations.
Rural Intercity or Commuter Service	Rural intercity or commuter service is a longer-distance fixed-route service typically connects cities, serving relatively few major stops at key activity or employment centers and connecting to local service with each city. Intercity frequency is based on market size and can be scaled to meet demand; some may operate every day, while others are "Lifeline" routes that operate once a week.
Express Service	Express service typically is similar to rural intercity or commuter service in that it is a longer-distance fixed route service that connects two destinations. In addition, this service will only stop at the two major destinations on the route, skipping locations that may fall in between. This service may include intra-city routes with limited stops; for example, serving stops every mile as compared to non-express services serving every ¼ mile. This service type is most appropriate where there is considerable demand or commute patterns between two fixed locations



#### Figure 16: Existing Transit Service

## TRANSIT GAPS AND OPPORTUNITIES

### Summary of Previously-Identified Gaps and Opportunities

Participants in the GRTS Phase 1 noted significant gaps in the local services and regional connections. Specific destinations were mentioned as important access points that need more service:

- Columbia Gorge Community College campuses
- Native American In-lieu and Treaty Fishing Access Sites
- Healthcare facilities in the Portland Metro Area

The need for more coordination between public and private providers and more coordination between stakeholders and community partners were identified.

GRTS Phase 1 identified the following barriers to providing transit in the region:

- A lack of transit and active transportation infrastructure
- A lower population density in rural areas
- A lack of new funding sources
- A need for more marketing, branding, and public awareness of existing services

### First-Mile Last-Mile

People with disabilities and older adults rely on access to transit but require curb-to-curb transportation to make connections. In all counties, the populations are aging and the demand for demand-response transit is increasing.

Rural communities, like the City of Wasco, have high percentages of people commuting far for work but providing the connections between people living in outside of dense areas and longer transit services is challenging and outside the scope of first-mile last-mile transit in most cases.

Opportunities for first-mile/last-mile connections include the following:

- Biking
- Walking
- Dial-a-Ride
- Drive to/Drop-off a Park-and-Ride facility

First-Mile Last-Mile connections could be enhanced by improving the following:

- Building Park-and-Ride facilities along intercity routes
- Constructing enhanced crossing opportunities in the vicinity of transit stops and/or adjusting transit stops to be located by comfortable crossing locations
- Investing in projects that support walking and biking access to transit routes
- Providing access to electric carshare, bikeshare and/or scooter share systems that provide local connections to regional transit trips

### **Coordination Opportunities**

As highlighted in Figure 16, there are several existing transfer points that the Gorge TransLink Alliance utilizes to support regional transit connections. Additionally, the GOrge Pass provides a simple farepayment options for people to utilize service for Columbia Area Transit, The Link, Mt. Adams Transportation Service, and Skamania County Transit. The following existing coordination opportunities exist and should be explored further:

- Extend weekend fixed-route transit service in other counties outside of Hood River, allowing residents and visitors in Wasco County, Klickitat County, and Skamania County to connect to intercity routes with access to recreation and shopping on weekends.
- Coordinate between agencies to provide medical rides and other long-haul rides to Portland.
- Partner with Employers and Community-Based Organizations to encourage information-sharing and feedback from transit users. Encourage vanpooling between employees.
- Coordinate transit timetables to maximize the efficiency of transfers between services.
- Expand evening and weekend service, stakeholder advisory group members particularly emphasized the need to expand evening and weekend service between the Cities of Hood River, Bingen, and White Salmon
- Enhance trip planning support between services and provide real-time vehicle arrival information across services.
- Coordinate between public and private providers to serve congested tourism areas.

### Service Opportunities

The intent of the GRTS Phase 2 is to outline ways that members of the TransLink Alliance can support thriving Columbia River Gorge communities by providing access to critical services, higher education, jobs, and outdoor recreation while protecting the natural wonders of the Gorge. Service opportunities are organized into three levels of service scenarios: basic, moderate, and high.

### Basic Level of Service

Basic level of service opportunities includes options that maintain existing service or redistribute service to provide a comparable amount of service. Opportunities include:

- Coordinate transit timetables to maximize the efficiency of transfers between services
- Coordinate demand-response resources between communities to serve more long-haul medical trips
- Expand vanpool services to support commutes to common employers
- Enhance trip planning support between services and provide real-time vehicle arrival information across services
- Provide stops at popular recreation destinations along existing routes or where out-of-direction travel is minor

### Moderate Level of Service

Moderate level of service opportunities includes options that bring service up to a consistent level across services. Opportunities include:

- Extend service hours on all routes to provide service from 5:30 am to 8:00 pm
- Provide weekend service on all fixed routes and intercity routes
- Provide demand-response service in all counties on weekends

### High Level of Service

High level of service opportunities describes the ideal service that would be provided if funding was not limited. Opportunities include:

- Increase the number of intercity routes to provide more regional transit opportunities. Potential routes include:
  - A route serving Yakima, Goldendale, Vancouver, and Portland
  - A route between The Dalles, Dufur, Tygh Valley, Warm Springs, Shaniko, Antelope, Maupin, and Madras
  - A route between The Dalles, Celilo Village, Biggs, and Goldendale
  - A route providing service to Biggs along the I-84 corridor
- Increase the number of local city circulators to support connections to intercity routes
- Expand routes serving recreational areas
  - Provide service to additional trailheads and riverfront parks along the Columbia River Gorge National Scenic Area
  - Provide service between White Salmon and Goldendale (with a side journey up Hwy 8) could provide access to Lyle, many trails along Highway 14, wineries, and the Maryhill Museum
  - Provide service to Mount Adams (Gifford Pinchot National Forest)
  - Provide opportunities to access Mount Hood National Forest in the summer

## **Operations Costs**

Table 4 summarizes the operations costs of providing the service opportunities described above. These costs are estimated according to operating expenses per vehicle revenue hour presented in the National Transit Database 2019 Annual Agency Profiles. Costs exclude the capital and implementation costs. Appendix B provides more details on the assumptions used to produce these costs.

### Table 4. Operations Costs

Level of Service Scenario	Service Opportunity	Seasonal Cost <sup>1</sup>	Annual Cost <sup>1</sup>	Assumptions
Basic	Expand vanpool opportunities	Varies		Costs depend on the level of financial support from agencies, employers, and community organizations
Moderate	Extend service hours on all fixed routes and intercity routes to provide service from 5:30 am to 8:00 pm	\$100,000/season	\$420,000/year	Assumes service hours are extended on weekdays, assumes one vehicle is operated for the additional service hours
	Provide weekend service on all fixed routes and intercity routes	\$145,000/season	\$615,000/year	Assumes one vehicle is operated for the additional service hours

Level of Service Scenario	Service Opportunity	Seasonal Cost <sup>1</sup>	Annual Cost <sup>1</sup>	Assumptions		
	Provide demand- response service in all counties on weekends	\$85,000/season	\$365,000/year	Assumes one vehicle is operated for the additional service hours, assumes vehicle operates for the same number of hours as it does on weekdays. The cost of providing dial-a- ride in Sherman county was estimated by averaging the cost of providing dial-a-ride on other service hours.		
	Create additional intercity routes	\$45,000-\$140,000 per route/season	\$180,000- \$590,000 per route/year	Cost range provided based on the range of the cost/week for existing intercity routes		
High	Create additional local routes	\$12,000-\$100,000 per route/season	\$55,000- \$430,000 per route/year	Cost range provided based on the range of the cost/week for existing local routes		
	Expand routes serving recreational areas	\$90,000-\$140,000 per route/season	\$390,000- \$590,000 per route/year	Cost range provided based on the range of the cost/week for existing recreational routes		

<sup>1</sup>Seasonal Cost assumes service is provided for 12 weeks, annual cost assumes service is provided for 52 weeks.

## NEXT STEPS

This draft memorandum will be reviewed with the Project Management Team (PMT), Advisory Committee (AC), and Stakeholder Advisory Group (STAG) to confirm travel patterns, transit gaps, and opportunities. This information will be used to draft a regional transit vision and explore funding opportunities as part of Memo#4: Regional Transit Service Vision and Funding Opportunities.

## APPENDIX A. JOBS AND EMPLOYMENT DATA

This section provides the LEHD data in the study area. This dataset provides valuable information about where workers live and work. Since this dataset is generated based on administrative records, some work locations may be over- or underrepresented. For example, if for example, state workers in The Dalles have their paychecks processed with an address in Salem, their job site may be shown in Salem instead of The Dalles, if no local address is given in the administrative data. All data in this section are from 2019, which is the most recent year with complete data.

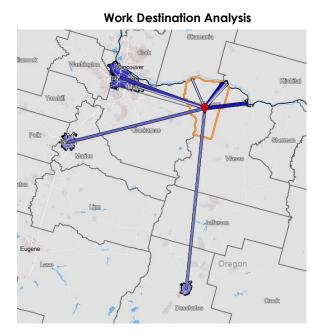
Under each county the following information is provided:

- The work destinations for people who live in the county.
- The work destinations for people who live in the city with the highest population.
- The home destinations for people who live in the county.
- The home destinations for people who live in the city with the highest population.

The work destinations map shows where people work who live in that area and the home destination map show where people live who work in that area live.

## **Hood River**

As shown in Table 5, approximately one-third of the residents in Hood River County work in The City of Hood River. Other common work destinations for residents of Hood River County are The Dalles and Portland, which could benefit from increased transit connections.





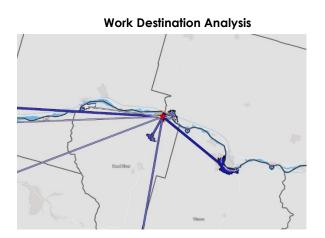
### Home Destination Analysis

Hood River Resident Work Locations	Count	Share	ł	Hood River Employee Home Locations	Count	Share
Hood River City, OR	3,416	31.9%		Hood River City, OR	2,089	17.6%
The Dalles City, OR	571	5.3%		The Dalles City, OR	831	7.0%
Portland City, OR	540	5.0%		Odell CDP, OR	748	6.3%
Odell CDP, OR	419	3.9%		Portland City, OR	475	4.0%
Salem City, OR	140	1.3%		Cascade Locks City, OR	276	2.3%
Bend City, OR	134	1.2%		White Salmon City, WA	160	1.3%
White Salmon City, WA	121	1.1%		Gresham City, OR	124	1.0%
Cascade Locks City, OR	114	1.1%		Chenoweth CDP, OR	112	0.9%
Gresham City, OR	96	0.9%		Parkdale CDP, OR	80	0.7%
Bingen City, WA	87	0.8%		Mount Hood CDP, OR	75	0.6%
All Other Locations	5084	47.4%		All Other Locations	6929	58.2%

### Table 5. Employees Coming To and Going From Hood River County

## City of Hood River

As shown in Table 6, there are high volumes of commuters travelling between The City of Hood River and The Dalles that could benefit from increased frequency of intercity transit and/or increased vanpool options.



Home Destination Analysis

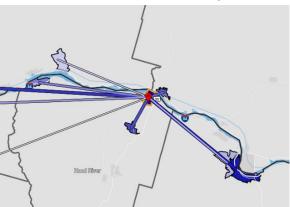


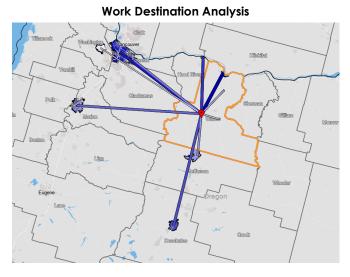
Table 6. Employees Coming To and Going From City of Hood River

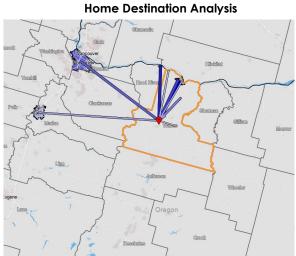
GRTS Phase 2

Hood River Resident Work Locations	Count	Share	Hood River Employee Home Locations	Count	Share
Hood River City, OR	1,543	39.0%	Hood River City, OR	1,543	21.8%
The Dalles City, OR	283	7.1%	The Dalles City, OR	507	7.2%
Portland City, OR	200	5.1%	Portland City, OR	316	4.5%
Odell CDP, OR	80	2.0%	Odell CDP, OR	285	4.0%
Bend City, OR	54	1.4%	White Salmon City, WA	132	1.9%
White Salmon City, WA	52	1.3%	Cascade Locks City, OR	104	1.5%
Salem City, OR	50	1.3%	Gresham City, OR	82	1.2%
Gresham City, OR	38	1.0%	Chenoweth CDP, OR	64	0.9%
Bingen City, WA	37	0.9%	Carson CDP, WA	46	0.6%
Cascade Locks City, OR	23	0.6%	Salem City, OR	42	0.6%
All Other Locations	1,600	40.4%	All Other Locations	3,957	55.9%

## Wasco County

As shown in Table 7, approximately 40% of the residents in Wasco County work in The Dalles. Other common work destinations for residents of Wasco County are Hood River and Portland which could benefit from increased transit connections.



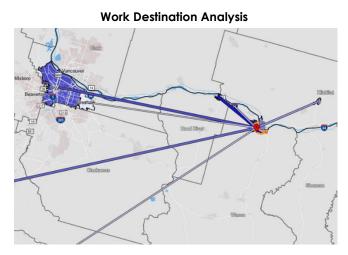


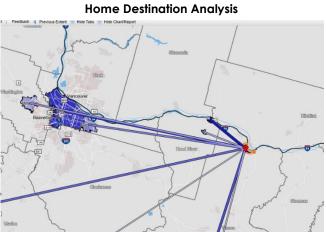
### Table 7. Employees Coming To and Going From Wasco County

Wasco Resident Work Locations	Count	Share	Wasco Employee Home Locations	Count	Share
The Dalles City, OR	4,274	38.4%	The Dalles City, OR	3,663	40.9%
Portland City, OR	725	6.5%	Hood River City, OR	295	3.3%
Hood River City, OR	691	6.2%	Chenoweth CDP, OR	288	3.2%
Bend City, OR	201	1.8%	Portland City, OR	190	2.1%
Salem City, OR	150	1.3%	Dufur City, OR	81	0.9%
Gresham City, OR	135	1.2%	Pine Hollow CDP, OR	77	0.9%
Warm Springs CDP, OR	134	1.2%	Salem City, OR	77	0.9%
Dufur City, OR	113	1.0%	Mosier City, OR	68	0.8%
Maupin City, OR	110	1.0%	Dallesport CDP, WA	68	0.8%
Hillsboro City, OR	95	0.9%	Maupin City, OR	67	0.7%
All Other Locations	4,488	40.4%	All Other Locations	4,083	45.6%

### The Dalles

As shown in Table 8, there are high volumes of commuters travelling between The City of Hood River and The Dalles that could benefit from increased frequency of intercity transit and/or increased vanpool options. There are also moderate volumes of commuters traveling between the City of Goldendale and The Dalles that could benefit from increased vanpool options.



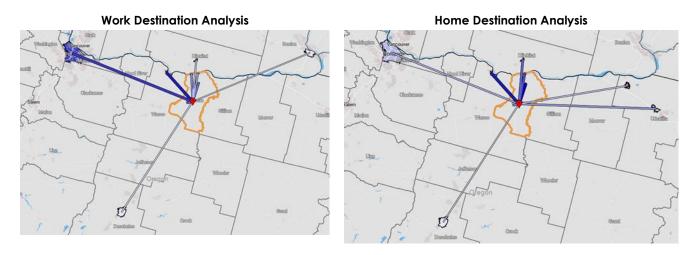


### Table 8. Employees Coming To and Going From The Dalles

The Dalles Resident Work Locations	Count	Share	The Do	alles Employee Home Locations	Count	Share
The Dalles City, OR	3,508	44.6%	The	Dalles City, OR	3,508	43.5%
Hood River City, OR	283	3.6%	Ноос	d River City, OR	507	6.3%
Chenoweth CDP, OR	259	3.3%	Por	tland City, OR	474	5.9%
Portland City, OR	156	2.0%	Be	end City, OR	155	1.9%
Salem City, OR	64	0.8%	Sa	llem City, OR	110	1.4%
Dallesport CDP, WA	60	0.8%	Gre	sham City, OR	100	1.2%
Goldendale City, WA	55	0.7%	Hills	sboro City, OR	58	0.7%
Mosier City, OR	53	0.7%	0	dell CDP, OR	50	0.6%
Eugene City, OR	51	0.6%	Red	mond City, OR	49	0.6%
Gresham City, OR	46	0.6%	Eu	gene City, OR	46	0.6%
All Other Locations	3,325	42.3%	All O	)ther Locations	3,009	37.3%

## **Sherman County**

As shown in Table 9, approximately 15% of the residents in Sherman County work in Moro City, and approximately 10% of employees working in Sherman County live in Wasco City. Other common work destinations for residents of Wasco County are The Dalles and Portland, though the volumes of commuters would not be conducive of fixed-route transit service. Transit opportunities should focus on improved connections to larger regional transit services in The Dalles and vanpool opportunities for residents.

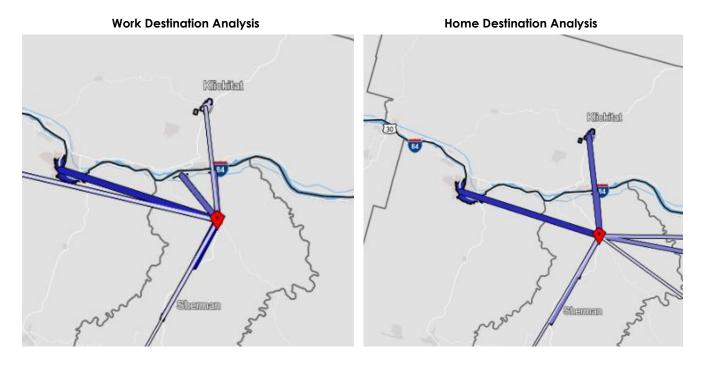


#### Table 9. Employees Coming To and Going From Sherman County

Sherman Resident Work Locations	Count	Share	Sherman Employee Home Locations	Count	Share
Moro City, OR	103	15.7%	Wasco City, OR	65	9.7%
The Dalles City, OR	69	10.5%	The Dalles City, OR	62	9.2%
Portland City, OR	40	6.1%	Moro City, OR	38	5.7%
Grass Valley City, OR	32	4.9%	Rufus City, OR	31	4.6%
Wasco City, OR	30	4.6%	Goldendale City, WA	28	4.2%
Biggs Junction CDP, OR	28	4.3%	Grass Valley City, OR	26	3.9%
Rufus City, OR	19	2.9%	Pendleton City, OR	17	2.5%
Goldendale City, WA	12	1.8%	Portland City, OR	13	1.9%
Bend City, OR	11	1.7%	Hermiston City, OR	9	1.3%
Kennewick City, WA	11	1.7%	Bend City, OR	6	0.9%
All Other Locations	300	45.8%	All Other Locations	376	56.0%

## Wasco City

As shown in Table 10, almost 95% of the residents of Wasco City work outside the city. The low numbers of commuters make it difficult to provide transit services outside demand-response service for access to essential destinations.



### Table 10. Employees Coming To and Going From Wasco City

Wasco City Resident Work Locations	Count	Share	W	lasco City Employee Home Locations	Count	Share
Moro City, OR	29	18.4%		Wasco City, OR	10	14.1%
The Dalles City, OR	20	12.7%		The Dalles City, OR	6	8.5%
Wasco City, OR	10	6.3%		Rufus City, OR	5	7.0%
Biggs Junction CDP, Or	7	4.4%	(	Goldendale City, WA	5	7.0%
Rufus City, OR	7	4.4%	(	Grass Valley City, OR	3	4.2%
Portland City, OR	6	3.8%		Pendleton City, OR	3	4.2%
Grass Valley City, OR	5	3.2%		Hermiston City, OR	2	2.8%
Goldendale City, WA	3	1.9%		Moro City, OR	2	2.8%
Hillsboro City, OR	2	1.3%		Baker City City, OR	1	1.4%
Redmond City, OR	2	1.3%		Bend City, OR	1	1.4%

Wa	sco City Resident Work Locations	Count	Share	Wasco City Employee Home Locations	Count	Share
А	ll Other Locations	67	42.4%	All Other Locations	33	46.5%

## **Klickitat County**

As shown in Table 11, approximately 13% of the residents in Klickitat County work in Goldendale. Other common work destinations for residents of Klickitat County are Hood River, The Dalles, White Salmon, and Portland which could benefit from increased transit connections.

Work Destination Analysis

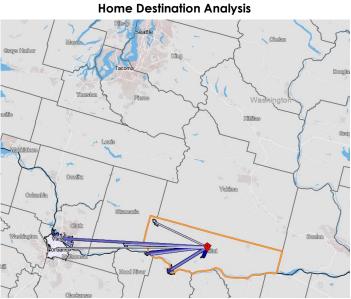
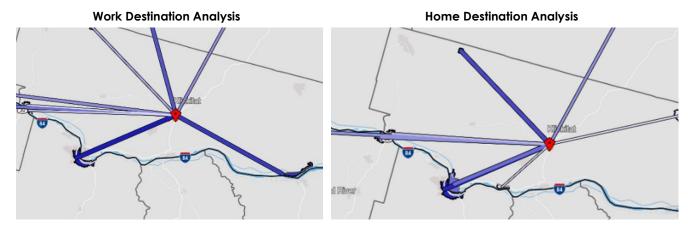


 Table 11. Employees Coming To and Going From Klickitat County

Klickitat Resident Work Locations	Count	Share	Klickitat Employee Home Locations	Count	Share
Goldendale City, WA	903	12.7%	Goldendale City, WA	668	10.0%
Hood River City, OR	466	6.5%	White Salmon City, WA	401	6.0%
The Dalles City, OR	450	6.3%	The Dalles City, OR	285	4.3%
White Salmon City, WA	446	6.3%	Hood River City, OR	238	3.6%
Portland City, OR	307	4.3%	Vancouver City, WA	145	2.2%
Bingen City, WA	226	3.2%	Dallesport CDP, WA	126	1.9%
Seattle City, WA	198	2.8%	Bingen City, WA	100	1.5%
Yakima City, WA	139	2.0%	Carson CDP, WA	80	1.2%
Vancouver City, WA	137	1.9%	Trout Lake CDP, WA	78	1.2%
Roosevelt CDP, WA	130	1.8%	Portland City, OR	69	1.0%
All Other Locations	3,717	52.2%	All Other Locations	4,470	67.1%

## Goldendale

Table 12 shows the commute patterns for employees going to and from Goldendale. There are moderate volumes of commuters traveling between Goldendale and The Dalles that could benefit from increased vanpool options.

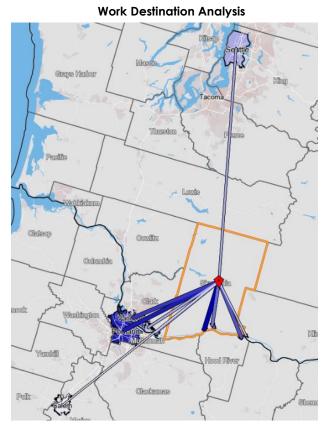


### Table 12. Employees Coming To and Going From Goldendale

Goldendale Resident Work Locations	Count	Share	Goldendale Employee Home Locations	Count	Share
Goldendale City, WA	344	26.6%	Goldendale City, WA	344	26.4%
The Dalles City, OR	55	4.2%	The Dalles City, OR	29	2.2%
Roosevelt CDP, WA	50	3.9%	Glenwood CDP, WA	23	1.8%
Seattle City, WA	38	2.9%	Dallesport CDP, WA	18	1.4%
Portland City, OR	35	2.7%	Hood River City, OR	11	0.8%
Vancouver City, WA	30	2.3%	Portland City, OR	11	0.8%
Yakima City, WA	30	2.3%	Yakima City, WA	11	0.8%
Glenwood CDP, WA	25	1.9%	White Salmon City, WA	10	0.8%
Bingen City, WA	19	1.5%	Bickleton CDP, WA	9	0.7%
White Salmon City, WA	17	1.3%	Wishram CDP, WA	9	0.7%
All Other Locations	652	50.3%	All Other Locations	830	63.6%

## Skamania County

As shown in Table 13, approximately 13% of the residents in Skamania County work in Stevenson. Other common work destinations for residents of Skamania County are Portland and Vancouver (WA) which could benefit from increased transit connections.



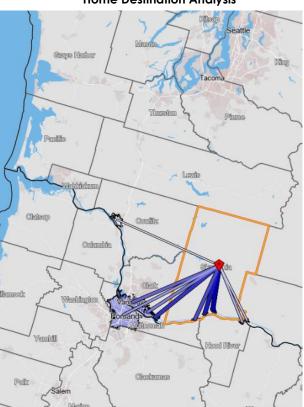


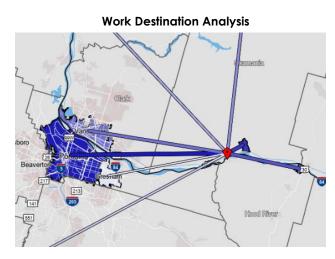
Table 13. Employees Coming To and Going From Skamania County

Skamania Resident Work Locations	Count	Share	Skamania Employee Home Locations	Count	Share
Stevenson City, WA	713	13.7%	Carson CDP, WA	336	16.4%
Portland City, OR	522	10.0%	Stevenson City, WA	241	11.7%
Vancouver City, WA	416	8.0%	Washougal City, WA	72	3.5%
Hood River City, OR	206	3.9%	North Bonneville City, WA	57	2.8%
Carson CDP, WA	201	3.9%	Vancouver City, WA	54	2.6%
Washougal City, WA	153	2.9%	Camas City, WA	42	2.0%
Camas City, WA	108	2.1%	Portland City, OR	37	1.8%
Seattle City, WA	108	2.1%	Hood River City, OR	25	1.2%

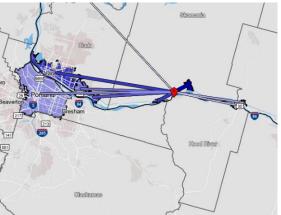
Skamania Resident Work Locations	Count	Share	Skamania Employee Home Locations	Count	Share
White Salmon City, WA	95	1.8%	White Salmon City, WA	24	1.2%
Salem City, OR	81	1.6%	Longview City, WA	21	1.0%
All Other Locations	2,617	50.1%	All Other Locations	1,146	55.8%

### Stevenson

Table 14 shows the commute patterns for employees coming to and going from Stevenson. The City may benefit from vanpool options to commute to Portland and Carson.



Home Destination Analysis



#### Table 14. Employees Coming To and Going From Stevenson

Stevenson Resident Work Locations	Count	Share	Stevenson Employee Home Locations	Count	Share
Stevenson City, WA	203	29.0%	Carson CDP, WA	224	18.7%
Portland City, OR	51	7.3%	Stevenson City, WA	203	17.0%
Carson CDP, WA	27	3.9%	North Bonneville City, WA	30	2.5%
Hood River City, OR	23	3.3%	Vancouver City, WA	30	2.5%
Vancouver City, WA	21	3.0%	Washougal City, WA	29	2.4%
Seattle City, WA	16	2.3%	Camas City, WA	21	1.8%
Longview City, WA	12	1.7%	Portland City, OR	20	1.7%
Salem City, OR	10	1.4%	White Salmon City, WA	17	1.4%
Gresham City, OR	9	1.3%	Hood River City, OR	15	1.3%
North Bonneville City, WA	9	1.3%	Longview City, WA	9	0.8%
All Other Locations	319	45.6%	All Other Locations	597	50.0%

## **APPENDIX B. SERVICE COST ASSUMPTIONS**

Service Provider	Service	Service Location	Runs/Day	Time/Run	Cost/Hour2019+ 10% (\$/Hr)	Hours	Days
CAT	Hood River	Town Loop Within Hood River	17.5	0.8	\$ 90	7am - 8pm	Everyday
CAT	Upper Valley	Parkdale, Odell, Hood River	8	1.0	\$ 90	7:30am-6:15pm	Monday-Friday
CAT	Cascade Locks	Wyeth State Park to Bridge of The Gods	12	.0	\$90	5:30am-7:35pm	Everyday
CAT	Hood River Connect	Town Loop focused on access to downtown hood river	5	0.3	\$90	9:30am-3:50pm	Everyday
CAT/The LINK	The Dalles Hood River	The Dalles to Mosier to Hood River	4	2.0	\$80	5:30am-7:30pm	Everyday
CAT	Falls to Locks/Columbia Gorge Express	Hood River to Portland	13	2.5	\$ 50	5:30am-7:30pm	Everyday
CAT	Dial-a-Ride	Hood River County	varies	varies	\$140	8:15am-4:45pm	Monday-Friday
Skamania County Transit	Dial-a-Ride	Skamania County	varies	varies	\$ 30	Assumed 8.5 hours	Monday-Friday
Skamania County Transit	Bingen-Stevenson-Vancouver	Bingen-Stevenson- Vancouver	7	1.5	\$110	5:30am-8:00pm	Monday-Friday
Mt. Adams Transportation Services	The Dalles to Golderndale	The Dalles to Golderndale	4	2.3	\$70	7am-7pm	Monday-Friday
Mt. Adams Transportation Services	White Salmon to Hood River	White Salmon to Hood River	9	1.1	\$0	7am-7pm	Monday-Friday
Mt. Adams Transportation Services	Dial-a-Ride	Klickitat County	varies	varies	\$60	Assumed 8.5 hours	Monday-Friday
Sherman County	Dial-a-Ride, Monday Bus, Tuesday Shopping Bus to The Dalles, Thursday Bus	Sherman County	varies	varies	\$90	8am-5pm	Monday-Thursday
The LINK	Red Route	Town Loop within The Dalles	9	2.0	\$80	7:00am-5:40pm	Monday-Friday
The LINK	Blue Route	Town Loop within The Dalles	16	1.0	\$80	7:00am-5:40pm	Monday-Friday
The LINK	Dial-a-Ride, Deviated Fixed- Route, Shopping bus, south county shuttle	The Dalles, Wasco County	varies	varies	\$100	7am-6pm	Monday-Saturday