

TRANSPORTATION

6

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APPENDIX 6

I. TRANSPORTATION FACILITIES INVENTORY AND LOS ANALYSIS

Transportation in San Juan County is a complex, multimodal system dictated by geography. The county is surrounded by water and contains 176 named islands and reefs. The only way to travel between islands or to and from the mainland is via boats or airplanes. There are no land-based state highways; San Juan County's highway is the Washington State Ferry (WSF) ferry route. All residents, visitors and freight are dependent on the marine and air transport systems to support the economics of the area.

The Washington State Office of Financial Management (OFM) estimates the County 2024 population as 17,778. This figure soars in the summer, with visitors arriving from numerous origins to enjoy the San Juan Islands. Based on ferry ridership data presented in the WSF Traffic Statistics Rider Segment Report for 2024; 1,919,272 people (drivers and passengers) travel to the San Juan Islands from Anacortes each year:

- 32,361 to Shaw Island;
- 306,538 to Lopez Island;
- 611,335 to Orcas Island; and
- 889,402 to San Juan Island.

The purpose of the Transportation Element is to provide a framework of analysis, goals, policies, and strategies necessary to develop the transportation facilities that will serve San Juan County in the future. The Growth Management Act (GMA) requires a systematic approach for estimating and planning for future transportation needs, based on an analysis of existing conditions and a projection of future needs.

Appendix 6 to the Transportation Element provides information regarding existing transportation facilities, demand/capacity analysis, expenditure/revenue analysis, and planning recommendations to ensure adequate current and future transportation capacity.

A. Air Transportation

Aviation is a vital transportation component connecting non-ferry served island to other locations in the island and to the mainland, providing passenger travel, freight and mail transport, medical evacuation to mainland hospitals, disaster staging/relief, and other essential services. The vast majority of air traffic now uses public airports on San Juan, Orcas and Lopez Islands, owned by the port districts, to reach Seattle, Bellingham, Anacortes, and other mainland destinations. Additional

private landing fields exist on many other inhabited islands. Seaplanes use designated harbors and private docks. The general locations of the public and private air transportation facilities within San Juan County are presented in Figure 1.

Figure 1 - Air Transportation



1. *Inventory of Facilities and Services*

a. Friday Harbor Airport

Friday Harbor Airport is classified as a commercial service airport, which is owned and operated by the Port of Friday Harbor. Its location spans the Town of Friday Harbor's (Town) boundary with San Juan County. The airport is a "primary service" airport. Its location adjacent to the Town makes it a destination for recreational pilots from throughout the region.

Friday Harbor Airport has a 3,400-foot runway that is rated for aircraft of 12,500 pounds. The airport designation is B-1 Small. Business activities include passenger terminal, air freight, air charter, flight training, full-service aviation mechanic, and medical evacuation to mainland hospitals by helicopter or fixed-wing air ambulance. The airport is adjacent to Peace Island Medical Center. Friday Harbor Airport, the Friday Harbor Seaplane Base and the Roche Harbor Seaplane Base are served by U.S. Customs and Border Protection personnel, who clear hundreds of international flights each year. Friday Harbor Airport has an average of 50,000 to 60,000 operations each year. Comprehensive airport details are available in the airport master plan on the Port of Friday Harbor website.

b. Orcas Island Airport

The Port of Orcas operates the Orcas Island Airport. The facility is classified as a commercial service airport. Business activities include passenger terminal, air freight, air charter, flight training, aviation mechanic, and medical evacuation to mainland hospitals by helicopter or fixed-wing air ambulance. Orcas Island Airport has a 2,901-foot runway that is rated for aircraft of 12,500 pounds. The airport designation is B-1 Small. Comprehensive airport details are available in the airport master plan on the Port of Orcas website.

c. Lopez Island Airport

The Port of Lopez operates the Lopez Airport, which is classified as a community service airport. The facility has a 2,900-foot runway. According to Port staff in 2018, it is a "general aviation" airport (i.e., public/private facility with general aviation usage). The Port of Lopez does not currently have any full-time employees and daily flight operations are not monitored. Business activities include the airport office and waiting room. Comprehensive airport details are available in the airport master plan on the Port of Lopez website.

d. Seaplane Facilities and Services

Currently, scheduled seaplane service to San Juan County is provided by Kenmore Air, Friday Harbor Seaplanes, and San Juan Airlines. Seaplane service is provided at the following locations: Islander/Islands Marine Center on Lopez; West Sound Marina, Deer Harbor Marina, Rosario Resort and West Sound Marina on Orcas Island; and Roche Harbor Resort and Friday Harbor Marina on San Juan Island. Of the airlines serving the county, Kenmore Air and San Juan Airlines offer multiple daily scheduled flights year round while Friday Harbor Seaplanes operates scheduled daily service May through early October.

2. Demand/Capacity

Periodically the ports assess demand and capacity trends to determine the most effective improvements to meet the project demands.

a. Friday Harbor Airport

The current Friday Harbor Regional Airport Master Plan was completed in 2019. This master plan was prepared because the airport did not meet current design standards for the B-II(s) category/group of aircraft. The current plan identifies a 20-year project list costing an estimated \$41.4 million. Improvements include road and taxiway expansions, runway maintenance, drainage improvements, and building construction which will help bring the airport up to FAA standards. The share of projects eligible for funding is estimated to be \$36.4 million from FAA, \$2.0 million from WSDOT, and 2.9 million from local funds. The Plan found that the airport's expenses exceeded its revenue in 2017 and 2018 and identified the need for additional funding sources for CIP projects. These include state and federal grants for qualifying projects, Passenger Facility Charges, the Port of Friday Harbor general fund, bonds, and ground lease options.

Orcas Island Airport

In 2019, Orcas Island Airport completed an airport master plan that will guide development over the next 20 years. This master plan was prepared because the airport does not meet current design standards for the B-II(s) category/group of aircraft. The capital improvements listed include building relocation, land acquisition, runway widening and other maintenance activities with a total cost of \$36.79 million. FAA funding is assumed to cover 30.8 million, with WSDOT funding a further \$1.41 million. The remaining \$4.47 million is to come from local funding sources. However, the cost of only those projects needed to meet federal B-II standards is much lower at \$25.39 million, with only \$1.3445 million expected to come from local funds.

b. Lopez Island Airport

In its 2012 "Airport Compliance Inspection Report" the Federal Aviation Administration (FAA) listed both ends of the airport as unsafe for landing aircraft, because of the obstructing trees. In 2013-2014, the Port acquired most of the critical parcels at each end of the airport and it has removed most of the trees obstructing landing and departing airplanes, making the airport safer and meeting FAA requirements. The critical properties were converted into pasture land for local farming. In 2018, the airport completed an airport master plan that will guide development over the next 20 years. The follow up to the master plan will be the FAA-required environmental assessment of future projects identified in the master plan.

3. Long Range Transportation Planning Recommendations

The Ports receive federal funding through the FAA for improvements at the major public island airports. Capital project funding is also available through the Washington State Department of Transportation/Aviation Division. The updated airport master plans and 20-year capital

improvement plans will be used to prioritize airport improvements and identify potential funding. The County shall provide support to the Ports in response to community needs.

B. Marine Transportation

Marine transportation services and facilities are the primary means for movement of people and goods among the islands, and between the islands and the mainland. Marine transportation facilities and services are provided by Washington State Ferries (WSF), public ports, public docks and ramps, and private marinas. In addition to public ferry service, private commercial vessels and barges provide transportation opportunities.

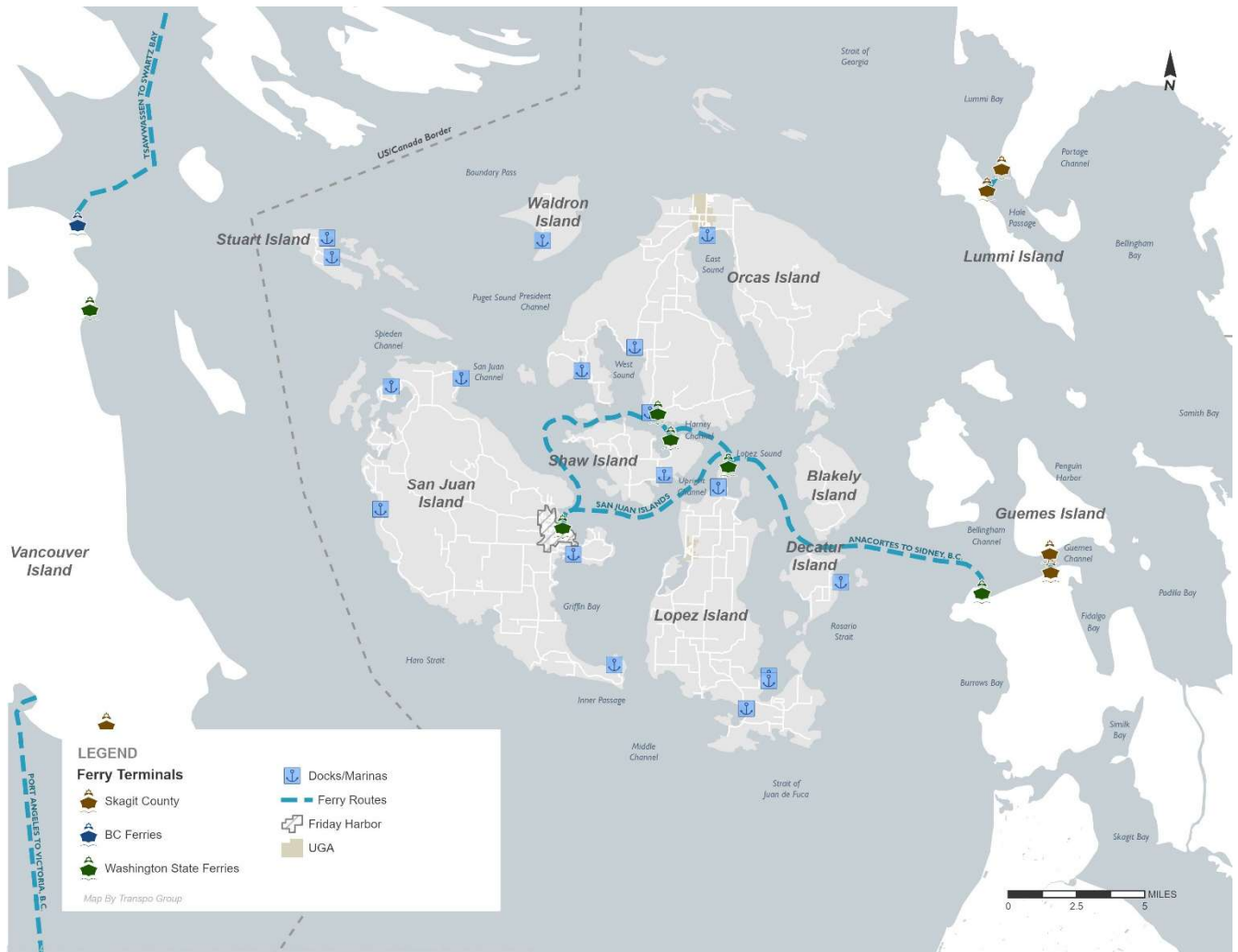
1. Washington State Ferry System

Washington State Ferries (WSF) is the principal provider of marine transportation between mainland and the islands of San Juan County (see Figure 2). There are several daily sailings from Anacortes to and from Shaw, Lopez, Orcas and San Juan islands, as well as an inter-island ferry which allows for travel between the islands. WSF previously included a route between Anacortes, Friday Harbor and Sydney, British Columbia, however, due to crew and vessel shortages, this route has not been restored since its suspension in 2020 during the COVID-19 pandemic. The ferry system is shown in Figure 2.

Demand for ferry services in the county varies with the season; demand is higher in summer and lower in winter. WSF sets seasonal schedules, with fewer sailings in winter months compared to summer. Creating workable schedules is complex, with efforts made to accommodate diverse factors such as school bell schedules, morning and evening rush hours, load and unload times, the wishes of community members, local event schedules, and staffing requirements from the US Coast Guard, among others. WSF has trialed revised winter, spring, and summer sailing schedules to accommodate the above factors and reduce sailing cancellations.

In addition to scheduling difficulties, the ferry system is facing some systemic challenges which have led to frequent service cancellations along crucial ferry routes to the San Juans. Island residents have expressed frustration with the ferry services' unpredictability which has had a detrimental impact on the delivery of medical, freight, and utility services, and has interrupted essential trips for all residents, including students, seniors and those with disabilities. The chief cause of these cancellations has been a lack of crew members available to staff sailings. The other major factor is the size and condition of WSF's aging fleet. WSF has 21 vessels in active service, but since 2016 4 vessels have been taken out of service and not replaced, while many of the vessels that remain in service are aging and vulnerable to breakdowns. Two new vessels are scheduled to join the fleet as early as 2028, with more on the way, but until that time reliable service in the San Juans is likely to remain a challenge.

Figure 2 - Marine Transportation - Washington State Ferries



a. Inventory of Existing Facilities and Services

Ferry travel is dependent on the size and frequency of the ferries, the parking available at the ferry landing, and the reservation system. Currently, all ferry facilities are planned to accommodate and handle the highest peak of demand occurring in the summer months.

Ferries: The assignment of ferry vessels during the year varies seasonally based on demand. Which boats are in service depends on the season and on scheduled or unscheduled maintenance and repairs.

There are four vessels assigned to the Anacortes terminal year round. In general, three of the ferries are larger vessels with vehicle capacity of up to 144 providing service between Anacortes and the four island terminals. The fourth ferry is a smaller vessel with a capacity of 90 vehicles and is assigned to interisland service. The four ferries represent 19% of the current WSF fleet, although the San Juan Islands represent about 10% of the total system traffic demand. WSF’s 2025 Service Contingency Plan indicates that they will keep 4 vessels

assigned to the San Juans regardless of fleet constraints on other routes.

In the winter, the inter island ferry is not in service on the weekends, such that for three months there are two different schedules within each week. The four ferries assigned to the islands during the winter period represent 19% of the fleet while representing about 7% of the system demand.

Ferry Parking and Services: WSF provides parking facilities at each of the island ferry terminals and has a contract with San Juan County for maintenance of the parking lots.

San Juan Island: WSF operates a paved park-and-ride lot for ferry patrons, located south of the intersection of Nichols Avenue and "B" Street, just east of the upper auxiliary holding area. This lot has a capacity of 57 spaces. Some walk-on ferry patrons park in front of the Town of Friday Harbor's Sunken Park, at the intersection of "B" Street and Nichols Avenue, and some park on Nichols Avenue, adjacent to the north boundary of the upper boundary of the upper auxiliary holding area. The Town of Friday Harbor (Town) is within walking distance of the ferry landing and provides a wide range of services and resources. Traffic in Town is significantly impacted by ferry unloading.

Orcas Island: WSF provides parking in two areas at the Orcas ferry terminal, located in Orcas Village. West of the upper holding lanes are 20 parking spaces along the southern boundary of the entrance to the holding lanes. Parking is available at this location daily excluding Sundays and holidays and is primarily used by commuters and day trippers.

Just to the south of the upper holding lanes is another parking area, which contains 36 parking spaces and one ADA parking stall. This lot is adjacent to the public restroom and is used by commuters and long-term travelers. This parking lot is posted for a maximum parking limit of 72 hours. This parking lot is typically full, particularly in the summer months.

Historically, overflow parking tended to occur at various locations within Orcas Village. Overflow parking along road shoulders, particularly along Orcas Road to the north and Killebrew Lake Road to the east, were the areas most impacted during the summer season. These areas are uncontrolled and unsigned.

In 2017, San Juan County constructed a park-and-ride facility on the WSF property north of the holding lanes. This facility contains about 80 parking spaces. The unsafe parking areas along Orcas Road have been posted "No Parking" to improve safety.

To the east of the ferry terminal and adjacent to the Post Office, there are three private parking lots. Orcas Landing, within walking distance of the ferry landing, has a grocery store, hotel, restaurants, post office, retail shops, and rental car services.

In 2017, WSF made safety improvements to the ferry landing, including relocating the ticket booth to enlarge the roadway for large vehicles exiting the ferry, pedestrian/bicycle safety and accessibility improvements, and side upgrades.

Lopez Island: Parking for ferry patrons is provided in two areas in close proximity to the Lopez terminal. A WSF-owned, gravel parking lot containing 58 spaces is located 200 feet south of the terminal building and east of the vehicle holding area. The parking lot is posted for a maximum parking limit of 72 hours. This parking lot is usually filled to capacity during the summer months. When the lot is full, overflow traffic parks along the western road shoulder beyond Penny Lane (entrance to Land Bank preserve). The shoulder is posted for no parking from 1 a.m. to 5 a.m.

A small paved parking lot owned by WSF is located across from the terminal building and contains 4 spaces, posted for 10 minute parking. Four spaces are reserved for ferry employees, 2 more spaces are labeled for ADA, and one for the local taxi. The total present parking supply in the vicinity of the Lopez Island ferry terminal is approximately 69 spaces.

The remoteness of the terminal location means that there is no other alternative to parking or being dropped off at the terminal. There are no park-and-ride lots on Lopez.

There are four car holding lanes. The easternmost lane (Lane 1) is reserved for Anacortes-bound vehicles. When the number of cars exceeds the lane capacity, cars park and wait along the eastern road shoulder. During the peak summer periods, this extension of Lane 1 may contain cars backed up in the shoulder nearly to Odlin Park, a distance of one mile to the south.

Available services within the Lopez terminal include a ferry ticket vending machine, a newspaper box, a community bulletin board, and a display of used books for sale which is stocked by Friends of the Lopez Library. Outside the terminal are three portable toilets, within the small paved parking lot. Two more portable toilets are located on the rise east of the large, gravel parking lot.

Shaw Island: The Shaw Island ferry landing was rebuilt in the mid-1990's and currently includes two regular holding lanes, one oversize holding lane, and 6 parking spaces including one ADA space. A restroom facility, a small customer waiting room and a ferry office are also located at the dock. A bike rack is located east of the transfer span.

One holding lane is used exclusively for interisland ferry traffic and can accommodate 11-12 vehicles. The second holding lane is used exclusively for the Anacortes-Shaw route and

can accommodate 12-13 vehicles. Capacity of the holding lanes is usually adequate for vehicle queuing, except for busy days and weekends during the summer when the Anacortes lane is regularly overloaded. Overloading of the ferry holding lanes creates a safety concern as vehicles queued for the ferry extend out into the northbound driving lane of the county road, up a steep hill and around a blind corner.

In addition to the facilities provided by Washington State Ferries, there is a privately owned store with about 8 parking spots, located just north of the ferry holding lanes. The store is the only commercial retail facility on Shaw Island and is regularly visited during daylight hours throughout the year. The store complex includes the Shaw Island Post Office, which generates a significant number of vehicle trips each day. Traffic visiting the store and/or post office must cross the loading and unloading ferry traffic.

A privately-owned gravel parking area, adjacent to and west of the county road between the ferry holding lanes and the oversize vehicle lane, is available for public parking. This area is often filled to, or beyond, capacity during the daytime because it is used by commuters who walk on to the interisland ferry. Approximately 10 parking spaces are available in this location.

Long-term lease parking is provided by the Shaw General Store to the east of the ferry holding lanes. Approximately 10-12 spaces are available. Several of these spaces are permanently leased by utility service providers, such as OPALCO, Century Tel, and San Juan County.

b. Demand/Capacity

In 2019, WSF finalized its 2040 Long Range Plan (LRP). The LRP provided a twenty year plan for ferry service expansion and enhancements to accommodate anticipated ferry ridership growth. However, since the onset of the COVID-19 pandemic, limited vessel availability and an ongoing shortage of U.S. Coast Guard (USCG) credentialed crew has presented significant challenges for WSF. While WSF has made some service improvements since 2019, WSF has primarily been focused on restoring ferry capacity to pre-pandemic levels.

The Washington State Ferry Service Contingency Plan published in May 2025 outlines WSF's immediate plans to restore and enhance service. The plan notes that WSF requires at least 26 vessels to provide pre-pandemic level service, but currently WSF only has 21 vessels in operation that range from 5 to 64 years old. WSF has funding for five new ferries needed to meet baseline service levels, but the vessels are unlikely to enter service until 2029.

The WSF Service Contingency Plan also outlines planned staffing increases and other priority investments needed to bring service levels back to pre-pandemic levels and minimize trip cancellations.

As a result, WSF service in San Juan County is likely to face continued disruption, cancellation and service cuts for the next few years.

c. Long Range Transportation Planning Recommendations

The County shall continue to set a high priority on maintaining and constructing marine facilities that provide non-ferry served island residents with access to WSF ferry landings. The County shall maintain the roadways that provide access to the ferry landing. The County shall continue to collaborate with WSF to establish additional parking at the ferry landings to improve access and safety for the community.

2. Passenger Ferries

Private passenger-only ferries (POF) from Bellingham (San Juan Cruises), Port Townsend (Puget Sound Express), and Seattle (Victoria Clipper) land at the Port of Friday Harbor and Orcas Landing during the summer tourist season.

WSF does not currently operate POF service. WSF did provide POF service in the 1990s, but it was discontinued a decade later by legislative restrictions on operating funds after the scaling back of Motor Vehicle Excise Tax (MVET). POF service is not an allowable use for gas tax revenue. King and Kitsap counties both now operate POF service with voter-approved local revenue sources.

The County does not plan to operate a passenger-only ferry; however, the County would support a passenger-only ferry by providing roadway and marine facility access, as appropriate. Between April-June 2025, Island Water Taxi provided a by-donation inter island passenger service as a stop gap whenever the regular inter island route operated by WSF was cancelled. This initiative was supported by the County Council, which also received \$1 million in emergency funds in 2024 to allow contracts with other water taxi and barge service providers whenever the inter island service was cancelled.

3. County Marine Facilities

Because of the marine orientation of the San Juan Islands, marine facilities (piers, floats, and ramps) -- both public and private facilities -- are a significant part of the transportation system. Public marine facilities are, in a sense, a contiguous part of the County road system, and thus are the responsibility of the County. Figure 3 presents the location of the various county marine facilities.

Figure 3 Marine Transportation - County Marine Facilities



a. Inventory of Existing County Marine Facilities and Services

San Juan County Public Works Department currently operates and maintains 16 public marine facilities:

- 9 public piers with floats;
- 7 boat ramps;
- 1 barge landing site, at the old gravel pit on San Juan Island; and
- The County leases one moorage dock, at Deer Harbor.

The details of the marine facilities operated by Public Works are provided in the Annual Marine Facility Report. That report includes annual maintenance activities, capital improvements, physical assessment results, and Comprehensive Plan Review. A copy of the annual report is available on the Public Works page of the County website.

In addition to Public Works, San Juan County Parks operates and maintains boat ramps, at Small Pox Bay on San Juan Island and at Indian Cove on Shaw Island. The Port of Friday Harbor operates the boat ramp and dock at Jackson Beach. The Port also manages a marine fuel dock and public dock at Friday Harbor. The Port has recently purchased Jensen's Shipyard and Shipyard Cove. They are in the process of developing a plan for use of the site. Numerous private marine facilities exist on the islands, from large marinas like Roche Harbor, Shipyard Cove, Deer Harbor, Cayou Quay, Rosario, and Fisherman Bay to the single docks constructed for use by individual or small groups of property owners.

The County also has numerous inventoried and non-inventoried shore access points resulting from County roads that end at the shoreline (coastal or lakes). These shore access points may provide for:

- Delivery of people, vehicles, and freight via a barge or freight ferry
- Marine recreation including shore access and small boat launching

Some shore access points are listed in the County's Recreation, Open Space, and Stewardship (Ross) Plan and improvements to the public right of way may be included in the County Public Works transportation improvement plans or the Parks capital improvement plans.

Several private barge companies serve the islands for most freight needs. A number of the County's ramps are routinely used by the barges for delivery of freight and construction materials, including ramps on Orcas, Lopez, Decatur, Stuart, and Waldron.

b. Demand/Capacity

Capital improvements to the County PW marine facilities are based on several factors: priority of facility, condition of facility, and evidence of inadequate capacity. These factors are evaluated and reported upon in the Marine Facility Annual Report.

Updated information on completed, in-progress, and planned capital projects for marine facilities are available in the 6-Year TIP and the Annual Marine Facility Report, both of which are available on the County website, Public Works page.

c. Long Range Transportation Planning Recommendations

The County has set a high priority on maintaining and constructing marine facilities that provide non-ferry served island residents with access to ferry served islands. Long-range planning needs for County marine facilities are evaluated annually and documented in the Annual Marine Facility Report.

C. Land Transportation

San Juan County has approximately 745 miles of roadways spread over 13 islands. Public Works maintains 270 miles of public roads located on 7 islands (Orcas, Lopez, San Juan, Shaw, Stuart, Waldron, and Decatur). Most of the roads in the County -- 450 miles -- are privately owned and maintained. There are also federal and state park roads, and the Town of Friday Harbor manages about 16 miles of roads. In 2008, some county roads on San Juan and Orcas Islands, along with the marine route from Anacortes to the Islands, were designated as the San Juan Islands Scenic Byway. *Figure 4* shows the official route of the Byway.

County roads provide transportation corridors for multi-modal access: motor vehicles, transit vehicles, pedestrians, and bicyclists. The County's Recreation, Open Space, and Stewardship (Ross) Plan provides goals, policies and plans for the County's pedestrians and bicyclists. These plans include integrating roadway access (shoulder widening), separated trails adjacent to the roadways, and off-road trails to provide multi-modal access in the County. The Parks Plan states:

"...one of the most pressing issues identified through the community outreach undertaken in preparation for this plan is the need for non-motorized transportation opportunities. There is a need expressed by the community to connect our islands together with a well-planned transportation system of multi-modal trails".

In 2018, the County adopted the Complete Streets Program Ordinance to ensure that future planning, design, and construction of motorized and non-motorized transportation facilities incorporate Complete Streets principles. The ordinance directs the County Engineer to prepare an

annual report on the recommended application of Complete Streets principles. This report is available on the County website, Public Works page. The vision for active transportation within San Juan County is further defined in the Multimodal Level of Service section.

County roads are categorized according to their role and usage in carrying vehicles. These categories are defined by US Department of Transportation, Federal Highway Administration (FHWA) in its roadway functional classification system. The Functional Classification System includes designations for rural and urban roads, including: Interstates, Freeways/Expressways, Principal Arterials, Minor Arterials, Major Collectors, Minor Collectors, and Local Access. San Juan County does not have any Interstate, Freeway, or Arterial roads. San Juan County has roadways in three functional classifications, as shown on Figure 5. The functional classifications are described as follows:

Rural Major Collectors provide the main access from the ferry landings. These are the highest volume roads, with the highest speeds, and are the primary freight routes.

Rural Minor Collectors provide connections between the major collectors and the local access roads or provide a secondary access to parts of the islands.

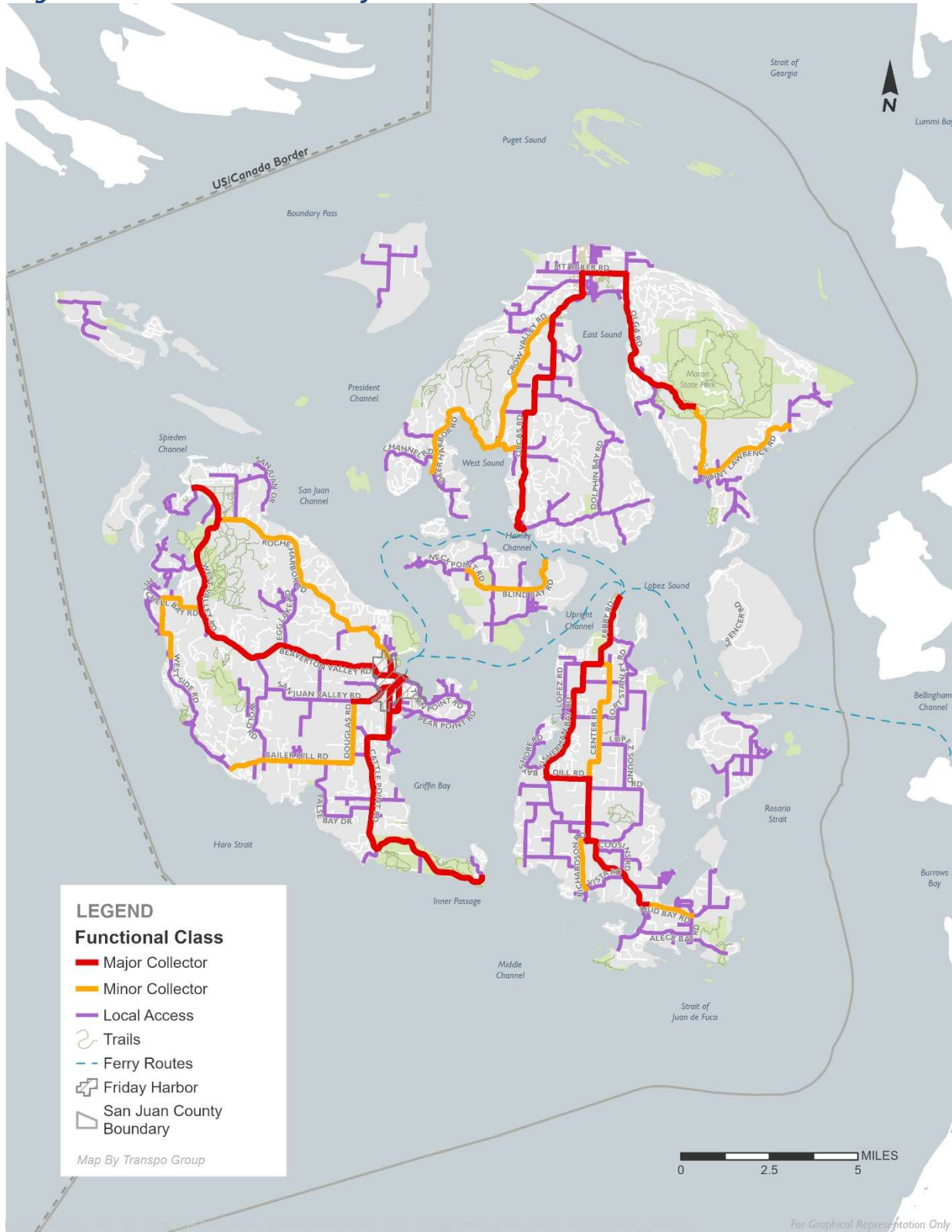
Rural Local Access Roads provide direct access to abutting land uses and carry traffic to the collector roads. Local access roads typically carry low volumes of traffic, traveling at low speeds.

The functional classifications in San Juan County were established in 1968. In 2018, four road segments on Orcas Island were changed from local access roads to major collectors: Main Street, Crescent Beach Road, Prune Alley, and North Beach Road from School Road to Mount Baker Road.

Figure 4 San Juan Islands Scenic Byway



Figure 5 Roads – San Juan County



The Town of Friday Harbor (Town) on San Juan Island developed the Transportation Element of its Comprehensive Plan in 2002. The plan is amended annually to reflect changes to the Six-Year Transportation Improvement Plan and the Summary of Capital Facility Improvements. Traffic circulation within the Town is affected by the loading/unloading of the Washington State Ferry at the harbor. The County and Town work together to maintain roads that transition from Town to County. In 2019, Town and County worked together to improve Argyle Avenue, as it transitions from Town to County jurisdiction near the Fairgrounds.

1. Roads

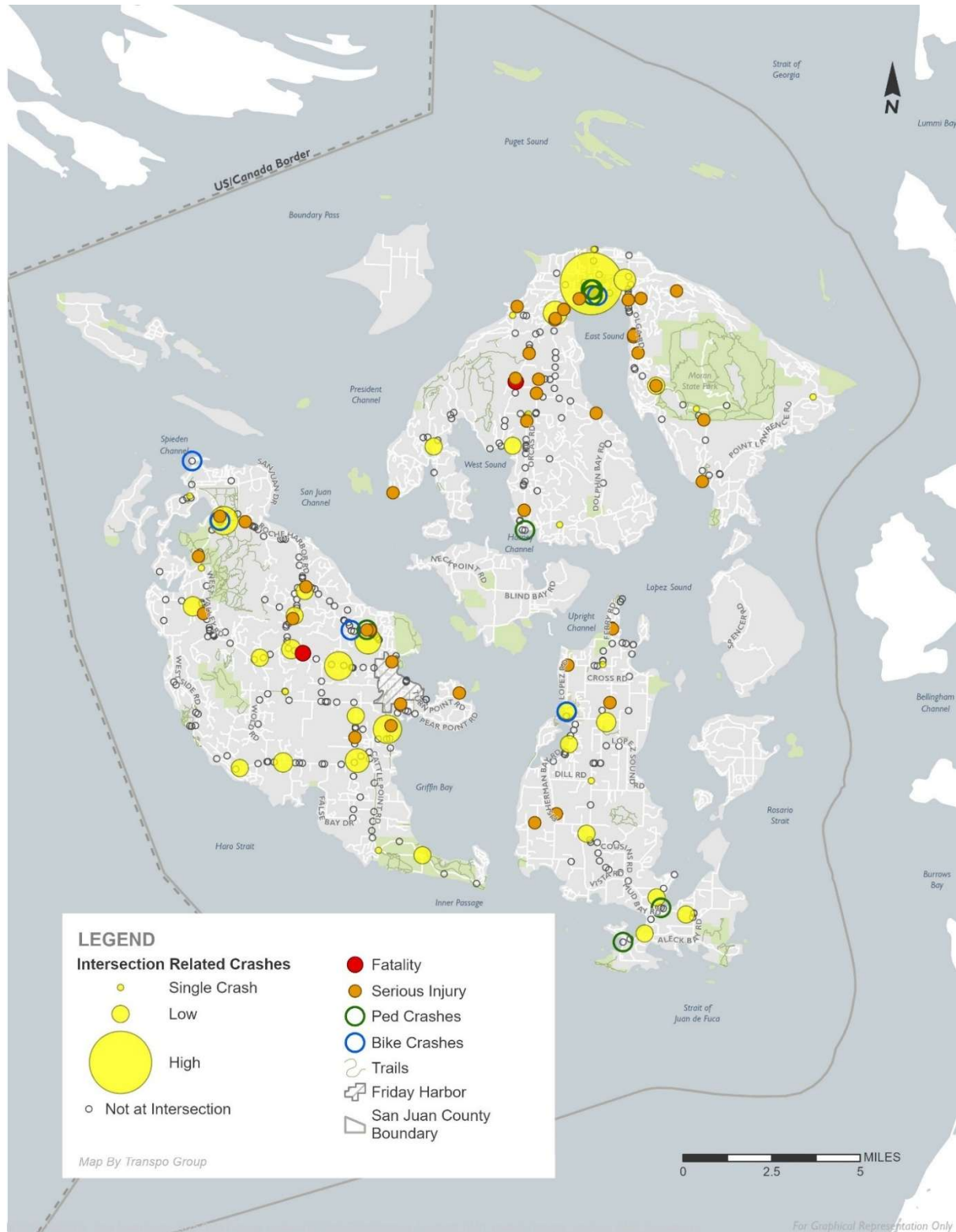
a. Inventory of Existing Facilities and Services – County Roads

The County's 270 miles of public roads are divided into three districts; see Figure 5. The road crew in each district is responsible for the operation and maintenance of the facilities within each of the districts. Roadway maintenance includes mowing and brushing within the road right-of-way to maintain sight distance, sign installation, repairing and paving the roads, and general preservation of the facilities.

b. Safety

The goal of the transportation system is to move people and goods in a safe and efficient manner. Within any region, certain locations will have a higher incidence of collisions than others due to factors such as general physical characteristics of the roadway and speed limits. Figure 6 below displays collisions as well as serious injuries and fatalities for the period from 2019 – 2023 for County Roads in San Juan County. In general, collisions are more frequent at intersections and within the East Sound UGA area. It is notable that the County has a high number of fixed object collisions that are not intersection related, many of which resulted in a serious injury. This may indicate the unforgiving nature of roads in the County where narrow, winding roadways coupled with lapses in judgement, intoxication, or inattention frequently result in vehicles leaving the roadway and colliding with roadside objects.

Figure 6 Collision History 2019 - 2023 – San Juan County



c. Level of Service Standards and Performance

The County evaluates several factors when prioritizing transportation improvement projects. These factors include: roadway capacity (level of service), safety issues, operational/maintenance elements, and Complete Street principles (bicycle, pedestrian, and public transportation users). Roadway capacity (level of service, LOS) determines the maximum acceptable threshold for traffic volume prior to considering improvements to address potential congestion.

In 2011, the County established LOS thresholds for County roadways. It is the industry standard to define the maximum roadway capacity as LOS F. A roadway operating at LOS F is at or above maximum capacity, resulting in forced or breakdown traffic flow; see the descriptions in Table 1. The maximum roadway capacity for county roads was estimated at an annual daily traffic volume of 11,670 vehicles based the typical roadway characteristics using the 2000 Highway Capacity Manual. Based on this value, the remaining LOS thresholds were scaled by applying a relative percentage of total capacity. In 2011, the County established LOS D as the maximum acceptable threshold for traffic volume, and set LOS D at annual average daily traffic (AADT) <4,380.

In 2018, the County reviewed its LOS standards based on observed traffic flow at measured traffic volumes, in order to revise the LOS standards to more appropriate traffic flow numbers. The maximum roadway capacity was reviewed and kept at 11,670 AADT. The highest volume of daily traffic measured during the summer, 5,300 AADT on Roche Harbor Road, was set as LOS C, Stable Flow. The remaining LOS thresholds were scaled by applying a relative percentage of total capacity and adjusted as shown in Table 1. The maximum acceptable threshold for traffic volume remains LOS D, but is now AADT < 7,900 as shown in Table 1.

Table 1
Level of Service (LOS) Description and AADT

LOS	Description	Annual Average Daily Traffic (AADT)
A	Free Flow-Traffic flows at or above the posted speed limit. Motorists have a high level of physical and psychological comfort.	<5,300 For both A/B
B	Reasonable Free Flow-Speeds are maintained, maneuvering is slightly restricted. Motorists still have a high level of comfort.	
C	Stable Flow or Near Stable Flow. Ability to maneuver is noticeably restricted and passing requires more drive awareness.	5,300-6,535
D	Approaching Unstable Flow. Speeds slightly decrease as volumes slightly increase.	6,535-7,900
E	Unstable Flow, operating at capacity. Flow becomes irregular and speed varies rapidly. Speeds rarely reach the posted limit. Drivers' level of comfort is poor.	7,900-11,670
F	Forced or Breakdown Flow. Every vehicle moves in lock step with the vehicle in front of it, with frequent slowing required. A road in constant traffic jam is at LOS F.	>11,670

Source: Highway Capacity Manual 2010, Transportation Research Board, 2010

Every two years the County measures traffic volume at specific roadway locations. Daily traffic in San Juan County varies greatly from the wintertime, when County residents are the primary road users, to the summertime, when traffic increases significantly due to the large number of tourists. The seasonal factor in traffic volume has been determined and was used to calculate the AADT. The 2045 traffic volumes were forecast based on the Population Projections adopted by the County Council in 2018. Current and forecasted AADT and LOS for collector road segments in the three road districts are shown in Table 2, Table 3, and Table 4.

All of the County collector road segments are currently operating at LOS A/B, free-flowing traffic volume. The 2045 LOS forecast predicts that almost all County collector roads will operate at or above the established LOS Standard D, as shown below.

Table 2
AADT and LOS for San Juan Island

San Juan Island Collector Roads						
County Road #	Mile Post	Road Name	2018		2045	
			AADT	LOS	AADT	LOS
7	0.46	Argyle Ave	2830	A/B	4050	A/B
7	0.92	Argyle Ave	1916	A/B	2740	A/B
1	3.52	Bailer Hill Rd	1654	A/B	2365	A/B
1	6.23	Bailer Hill Rd	498	A/B	710	A/B
2	1.05	Beaverton Valley Rd	3109	A/B	4450	A/B
2	3.52	Beaverton Valley Rd	2476	A/B	3545	A/B
18	0.75	Cattle Point Rd	3948	A/B	5650	C
18	1.95	Cattle Point Rd	3176	A/B	4545	A/B
18	2.61	Cattle Point Rd	2048	A/B	2930	A/B
18	3.87	Cattle Point Rd	1595	A/B	2280	A/B
18	5.22	Cattle Point Rd	961	A/B	1375	A/B
18	5.75	Cattle Point Rd	738	A/B	1055	A/B
18	6.82	Cattle Point Rd	534	A/B	765	A/B
1	2.15	Douglas Rd	1683	A/B	2410	A/B
1	14.6	Mitchell Bay Rd	965	A/B	1380	A/B
18	0.65	Mullis Rd	3275	A/B	4685	A/B
3	0.83	Roche Harbor Rd	4719	A/B	6750	D
3	2.15	Roche Harbor Rd	2796	A/B	4000	A/B
3	5.0	Roche Harbor Rd	2149	A/B	3075	A/B
3	6.53	Roche Harbor Rd	1829	A/B	2615	A/B
3	7.63	Roche Harbor Rd	1257	A/B	1800	A/B
2	9.72	Roche Harbor Rd	1419	A/B	2030	A/B
2	10.82	Roche Harbor Rd	1062	A/B	1520	A/B
1	1.19	San Juan Valley Rd	2716	A/B	3885	A/B
2	4.75	West Valley Rd	1472	A/B	2105	A/B
2	6.91	West Valley Rd	919	A/B	1315	A/B
2	9.6	West Valley Rd	575	A/B	820	A/B

Source: Growth rates and 2018 volumes taken from 2018 County Traffic Counts and Transpo Group Memoranda September 26, 2018; San Juan County Level of Service Analysis

Table 3
AADT and LOS for Orcas Island

Orcas Island Collector Roads						
County Road #	Mile Post	Road Name	2018		2045	
			AADT	LOS	AADT	LOS
4	8.90	Crescent Beach Rd	4172	A/B	7195	D
51	0.16	Crow Valley Rd	819	A/B	1415	A/B
51	1.9	Crow Valley Rd	1074	A/B	1850	A/B
51	3.59	Crow Valley Rd	1625	A/B	2805	A/B
45	0.1	Deer Harbor Rd	731	A/B	1260	A/B
45	1.0	Deer Harbor Rd	1132	A/B	1955	A/B
45	3.8	Deer Harbor Rd	866	A/B	1495	A/B
45	4.36	Deer Harbor Rd	540	A/B	930	A/B
52	0.08	Lovers Ln	2448	A/B	4220	A/B
52	0.46	Lovers Ln	2448	A/B	4220	A/B
4	8.20	Main St	4257	A/B	7345	D
58	0.1	Mount Baker Rd	1952	A/B	3365	A/B
58	0.79	Mount Baker Rd	2818	A/B	4860	A/B
58	1.17	Mount Baker Rd	2953	A/B	5095	A/B
53	0.35	North Beach Rd	4213	A/B	7265	D
4	9.45	Olga Rd	2919	A/B	5035	A/B
4	11.5	Olga Rd	2919	A/B	5035	A/B
4	14.36	Olga Rd	1089	A/B	1880	A/B
4	15.94	Olga Rd	250	A/B	430	A/B
4	0.75	Orcas Rd	2336	A/B	4030	A/B
4	3.92	Orcas Rd	2477	A/B	4270	A/B
4	6.93	Orcas Rd	3828	A/B	6605	D
4	7.0	Orcas Rd	4856	A/B	8375	E
63	0.1	Point Lawrence Rd	1045	A/B	1800	A/B
63	0.56	Point Lawrence Rd	554	A/B	955	A/B
63	3.31	Point Lawrence Rd	332	A/B	570	A/B
54	0.47	Prune Alley	2227	A/B	3840	A/B
57	0.03	Terrill Beach Rd	2157	A/B	3720	A/B
57	0.68	Terrill Beach Rd	1093	A/B	1885	A/B

Source: Growth rates and 2018 volumes taken from 2018 County Traffic Counts and Transpo Group Memoranda September 26, 2018; San Juan County Level of Service Analysis

Table 4
AADT and LOS for Lopez and Shaw Islands

Lopez and Shaw Collector Roads						
County Road #	Mile Post	Road Name	2018		2045	
			AADT	LOS	AADT	LOS
5	2.24	Center Rd	508	A/B	540	A/B
5	3.3	Center Rd	720	A/B	765	A/B
5	4.85	Center Rd	1545	A/B	1640	A/B
5	6.17	Center Rd	1769	A/B	1880	A/B
5	7.12	Center Rd	1415	A/B	1505	A/B
108	0.1	Dill Rd	754	A/B	800	A/B
5	0.16	Ferry Rd	929	A/B	985	A/B
5	1.98	Ferry Rd	1145	A/B	1215	A/B
103	0.4	Fisherman Bay Rd	849	A/B	900	A/B
103	1.75	Fisherman Bay Rd	1167	A/B	1240	A/B
103	2.26	Fisherman Bay Rd	1824	A/B	1940	A/B
103	3.0	Fisherman Bay Rd	1824	A/B	1940	A/B
103	3.76	Fisherman Bay Rd	1304	A/B	1385	A/B
103	4.0	Fisherman Bay Rd	1304	A/B	1385	A/B
114	0.1	Mud Bay Rd	915	A/B	970	A/B
114	0.55	Mud Bay Rd	915	A/B	970	A/B
114	2.3	Mud Bay Rd	720	A/B	765	A/B
114	2.94	Mud Bay Rd	450	A/B	480	A/B
5	8.1	Richardson Rd	226	A/B	240	A/B
5	9.2	Richardson Rd	226	A/B	240	A/B
96	1.0	Shaw Island-Blind Bay Rd	233	A/B	235	A/B
96	2.21	Shaw Island-Blind Bay Rd	233	A/B	235	A/B

Source: Growth rates and 2018 volumes taken from 2018 County Traffic Counts and Transpo Group Memoranda September 26, 2018; San Juan County Level of Service Analysis

Each roadway (except for Orcas Road at approximately milepost 7) is forecast to operate within the established LOS Standards. There is a potential that intersections could be negatively impacted by population growth and changes in land use. Intersection LOS standards may be used to assess the adequacy of the transportation system within Urban Growth Areas (UGAs), such as Eastsound and Lopez Village. As UGAs increase in density, more vehicles (and pedestrians and bicycles) will be competing for the same street space. By setting intersection-based standards and evaluating UGA intersection LOS periodically, the need for intersection improvements can be identified.

Intersection LOS is based on the vehicular delay traveling through an intersection during the busiest one-hour period. Smaller delays result in better LOS (A, B, C), while longer delays mean worse LOS (D, E, F).

Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	10 – 15
C	15 – 25
D	25 – 35
E	35 – 50
F	50

Transpo Group recommends that the Intersection LOS D be adopted as the maximum acceptable intersection delay for the key intersections in Eastsound and Lopez Village UGAs. The key intersections are collector road intersections used for moving traffic in and out of the UGA and are listed below.

In 2019/2020, intersection flow was measured for existing conditions and modeled to predict intersection flow in 2036. When long-range planning, typical traffic forecasting methodology utilizes historic population and traffic growth, as well as forecasted population growth, to estimate future traffic volumes for a specific future year, such as 20 years in the future. The analysis performed was based on the historically achieved density and floor area ratios. The future buildout may or may not occur. If it does, it may take much longer than 20 years. The existing and projected LOS for the study intersections in LV- UGA are shown in Table 5 and in Eastsound in Table 6.

Table 5
Lopez UGA Intersection LOS Existing and Projections

LOPEZ UGA INTERSECTIONS	2025 Existing		2045 Projection	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Weeks Rd/Fisherman Bay Rd	9.2	A	9.6	A
Lopez Rd/Fisherman Bay Rd	9.2	A	10.0	B
Fisherman Bay Rd/Hummell Lake Rd	9.6	A	10.6	B
Weeks Rd/Lopez Rd	9.2	A	9.9	A

Source; Transpo Group 2020-06-16 Final Lopez Village UGA LOS and Circulation Memo

All four LV-UGA study intersections which currently operate at LOS A are forecasted to operate at LOS A or B in 2045.

Table 6
Eastsound UGA Intersection LOS Existing and Projections

EASTSOUND UGA INTERSECTIONS	2025 Existing		2045 Projections	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
N Beach Rd/Mt Baker Rd	24.0	C	198.7	F
Lovers Ln/Mt Baker Rd	9.8	A	11.7	B
Orcas Rd/Main St	14.9	B	26.7	D
Prune Alley/Main St	15.5	C	21.3	C
Prune Alley/School Rd	11.6	B	18.0	C
Terrill Beach/Crescent Beach Dr	8.6	A	9.0	A
Terrill Beach/Mt Baker Rd	9.5	A	9.7	A

Source; Transpo Group 2020-06-23 Final Eastsound UGA LOS and Circulation Memo

All of the Eastsound UGA study intersections are currently operating at LOS C or better.

The 2045 projections show that the intersection of North Beach Road and Mount Baker Road is forecasted to operate at LOS F, while the other intersections will operate at LOS D or better. Future analysis of intersection LOS will be used to confirm projected impact of UGA growth to key intersections.

In addition to evaluating the UGA intersection LOS, the County contracted with Transpo Group to review future road improvement options that may mitigate future development and maintain LOS standards in the UGAs. The purpose of the analysis was to understand the impact to vehicular and non-motorized traffic and what impacts these changes may have on intersection LOS within the UGA. Implementation of these improvements would be considered only if LOS standards in the UGA are negatively impacted by development or other factors. The discussion of the new improvements within this memorandum is focused on a connectivity and level of service standpoint. The specific alignment, engineering feasibility and construction costs of the improvements were not analyzed.

Two road connections in LV-UGA and three road connections in Eastsound were analyzed in order to evaluate their impact on intersection LOS.

LV-UGA Weeks Road: Weeks Road is a two-lane road with no shoulders or bike lanes and an unpaved path on the north side of the road. It is one of the primary access points to the Lopez Village. Under the UGA buildout is forecasted to operate above the LOS standard at the intersections with Lopez Road and Fisherman Bay Road. Based on the number of forecasted vehicles, along with the resulting forecast intersection LOS, no roadway improvements are expected from a capacity or level of service standpoint. However, with the buildout of the UGA, there will likely be an increased need for

multimodal facilities to improve walking and biking experiences along this roadway and increase multimodal access to the developing commercial area in the UGA.

LV-UGA Hummel Lake Road and Cross Road Connection: The potential new roadway connection might be necessary for one of two reasons. First, if there was not enough north-south capacity in and around the UGA, or second, if development occurred east of the UGA and future roadways were required to provide for adequate circulation and access to serve the new developments and land uses. The future Lopez Village UGA buildout scenario does not include any significant development east of the UGA. Therefore, any additional north-south connections would not be required from a vehicle connectivity standpoint. Additionally, the forecast volumes show ample north-south roadway capacity along both primary north-south corridors in the UGA, Fisherman Bay Road and Lopez Road. The additional roadway capacity in the UGA indicates that no additional north-south connections are necessary from a LOS or capacity perspective.

Eastsound A Street Connection: The west end of A Street has significant turnaround traffic, which has prompted the County to consider a connection to Lover's Lane. This connection would likely change the way vehicular traffic accesses the downtown area, particularly from the west side of the study area. This connection would result in only slight improvements to the UGA intersection LOS. The connection would not be necessary unless the UGA intersection LOS degrades or if there are other safety reasons to make this connection.

Eastsound School Road North-South Connection: This scenario would involve a north-south connection between Rose Street and School Road, and a connection north to Mount Baker Road. This connection is intended to improve the north-south circulation around the downtown area and reduce the vehicular impact on Prune Alley and Lovers Lane, while providing improved access to Orcas Island Elementary and Middle Schools. Due to the small number of vehicles expected to use the new School Road connection, there is a negligible improvement in intersection LOS for all study intersections. The connection would not be necessary unless the UGA intersection LOS degrades or if there are other safety reasons to make this connection.

Eastsound Crescent Beach Road Closure: The potential closure of Crescent Beach Drive as a result of the increasing storm frequency and rising sea levels may result in the County's inability to continue maintaining the roadway. This scenario is intended to evaluate how well the other roadways would be able to absorb the traffic under UGA buildout should Crescent Beach Drive be closed. The analysis of the closure of Crescent Beach Drive shows that intersection improvements will be needed at the intersections of North Beach Road and Mt Baker Road, Lovers Lane and Mt Baker Road, and Prune Alley and School Road. Specific alignment and engineering feasibility would be required to determine the appropriate transportation improvements.

d. Multimodal Level of Service Standards

Multimodal transportation is a transportation system that includes and integrates more than one travel mode (i.e. highway, transit, marine transportation, active transportation) in order to move people and goods.

Active Transportation

Active transportation (aka non-motorized transportation) refers to human-powered travel, such as walking, biking, and rolling for wheelchairs, scooters, skateboards, and other mobility devices. A network of facilities for active transportation travel enhances community access, promotes healthy lifestyles, and provides residents with the option to not drive for some trips, which can help to reduce vehicle miles travelled and greenhouse gas emissions. The GMA requires that the Transportation Element include an active transportation component that includes collaborative efforts to identify and designate planned facility improvements for ADA, pedestrian, and bicycle travel.

Active Transportation Network (ATN)

The Active Transportation Network (ATN) is a countywide system of facilities for people walking, biking, and rolling (Wheelchairs, scooters, skateboards, etc.) These facilities can be adjacent to roadways or separated from them. Network planning for ADA, pedestrians, and bicyclists involves different considerations than roadway planning, which focuses on vehicle capacity and speed, and instead focuses on the completeness and connectivity of sidewalk, bikeway, and multiuse trail networks.

- Walkways serve pedestrians well when they provide a safe, convenient, and continuous route to their destination.
- Pedestrians are well-served by adequately spaced crosswalks and sidewalks are appropriate in portions of urban growth areas and areas of more intensive rural development, but not in rural areas, where wide shoulders can suffice.
- Bicyclists may be well-served by a shared local access roadway in an urban or UGA location characterized by lower speeds and traffic volumes but may benefit from a wide shoulder or designated bike lane on a higher speed and/or higher volume rural road.

Support for Bicycle and Pedestrian Infrastructure

Planning for active transportation infrastructure in San Juan County has received wide support from community outreach surveys, with recent surveys showing as high as 86 percent approval given for enhanced road shoulders, separated trails or both . In addition, the 2018 Complete Streets Program Ordinance states that all projects in the County's six-year Transportation Improvement Program must incorporate

complete streets where feasible, while the Parks, Recreation and Open Space plan supports the construction of multiuse trails to connect important destinations through the county. Finally, the county has many existing goals and policies that are in support of active transportation improvements.

Challenges and Solutions

Funding and constructing pedestrian, bicycle, and multiuse trail facilities in low-density rural areas can be expensive, environmentally challenging, and may require partnerships with cities and WSDOT. Given the large geographic area of San Juan County, the extensive mileage of the network, and the significant cost of construction, it may not be reasonable to expect a countywide active transportation network to be completed by 2045, which is the twenty-year timeframe of this plan.

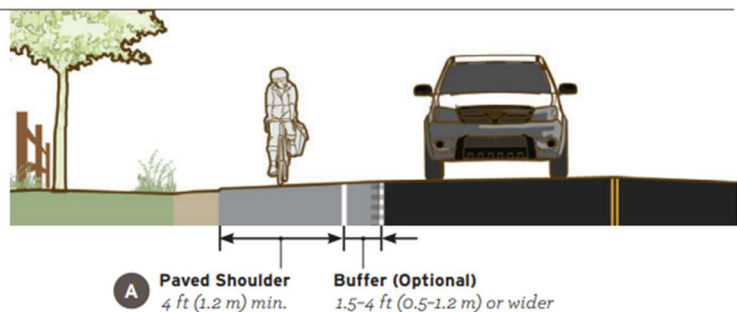
Establishing an Active Transportation Network can be very challenging for an unincorporated rural geography. The land use context and reality of living in a rural environment demands a different societal expectation for what type of walking and bicycle facilities can be provided. The first step is to take an inventory of regional walking, biking, and multiuse facilities that currently exist. The next step is to examine the physical space and constraints of the existing countywide roadway system to determine if there are opportunities to enhance what already exists, such as roadway shoulders. Some roads currently have paved shoulders, which may not be ideal for comfort and safety, but can serve as places to walk and bike outside of the vehicle travel lane.

In a rural environment, a 4-foot paved shoulder is considered the minimum standard for a designated bicycle facility (Source: FHWA Small Town and Rural Design Guide, 2017; Paved Shoulder illustration below).

Figure 7 Paved Shoulder Bike Lane

Paved Shoulder

Shoulders can improve bicyclist comfort and safety when traveling in higher speed and/or volume situations but only when adequate width is provided. If used, locate rumble strips on the edge line or within a buffer area that will not reduce usable space for bicyclists.



There are several County roads that have shoulders equal to or greater than 4ft including Roche Harbor and Cattle Point Roads on San Juan Island, Fisherman

Bay Road on Lopez Island, and the portion of Orcas Rd leading down to the Ferry Landing on Orcas Island. However, most roads in the county are much narrower with little or no shoulder and a Right-of-Way (ROW) width of 60ft or less which is not usually wide enough to accommodate more than two lanes with drainage elements. Where adequate ROW width exists, it may be possible to construct shoulders along some county roadways, but in other cases a better alternative may be to construct off street multi-use paths, or to consider Advisory Shoulders.

Advisory Shoulders can accommodate low to moderate volumes of two-way motor vehicle traffic while providing a prioritized space for bicyclists with little or no widening of the paved roadway surface. Advisory shoulders consist of a two-way center travel lane with shoulder space on both sides for active users. Vehicles travelling in the center lane must encroach into the advisory shoulders to pass oncoming traffic, but they must also yield to vulnerable users in the advisory shoulder.

(Source: FHWA Small Town and Rural Design Guide, 2017; Advisory Shoulder illustration below).

Figure 8 Advisory Shoulders

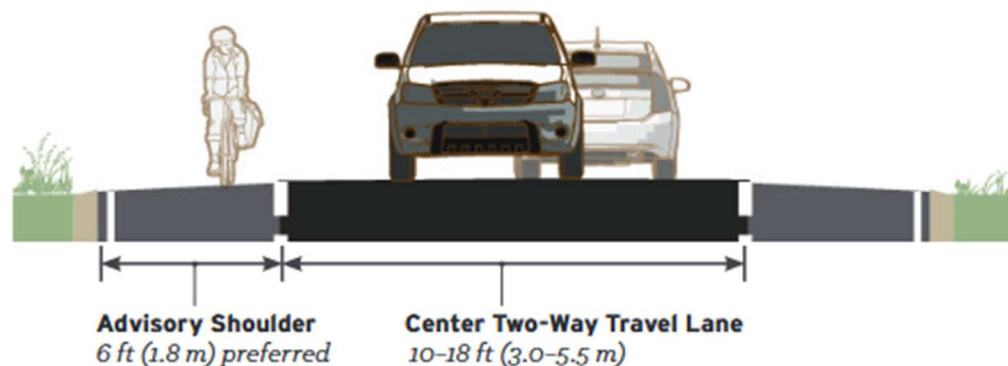


Figure 2-9. Advisory shoulders clarify positioning and yield priority on roads too narrow to provide exclusive travel space. When pedestrians or bicyclists are present, motorists may need to yield to users present in the advisory shoulder before passing.

This method of creating multi use roadways has many potential benefits and may be an appropriate solution for the constrained roadways of San Juan County, however it should be noted that implementation requires approval of an official “Request to Experiment” from the Federal Highway Administration, and further study and pilot programs are recommended before broad implementation is considered.

Active Transportation LOS Standards

In addition to LOS for vehicles, the GMA also requires counties to include LOS standards for active transportation in the transportation element. Active Transportation LOS standards were developed based on the planned countywide Active Transportation Network (ATN).

Development of the ATN was informed by the County's policy goal of connecting ferry terminals with on-island destinations via multimodal networks, the existing planning efforts to build multi use trails on San Juan island, and the existing scenic byway network and recommended bike routes documented by the county. Also considered was the importance of using low volume roadways to reduce the level of traffic stress experienced by active users. The countywide ATN is shown below in *Figure 9*.

Figure 9 Planned Active Transportation Network



- The Active Transportation LOS standards shown in

Table 7 emphasizes system level of traffic stress. In the rural context of San Juan County, level of traffic stress factors include speed limits, roadway signage, vehicular traffic volume and shoulder or bike lane widths. Higher speeds and higher volumes lead to higher stress levels and decreased safety for active users. The presence of a bike lane, shoulder or other dedicated space can lead to lower stress levels for users, although the stress mitigation value of a bike lane goes down quickly as speeds and volumes increase. Signage can also play a significant role in creating an expectation for all users to share road facilities and can help drivers anticipate the presence of active users.

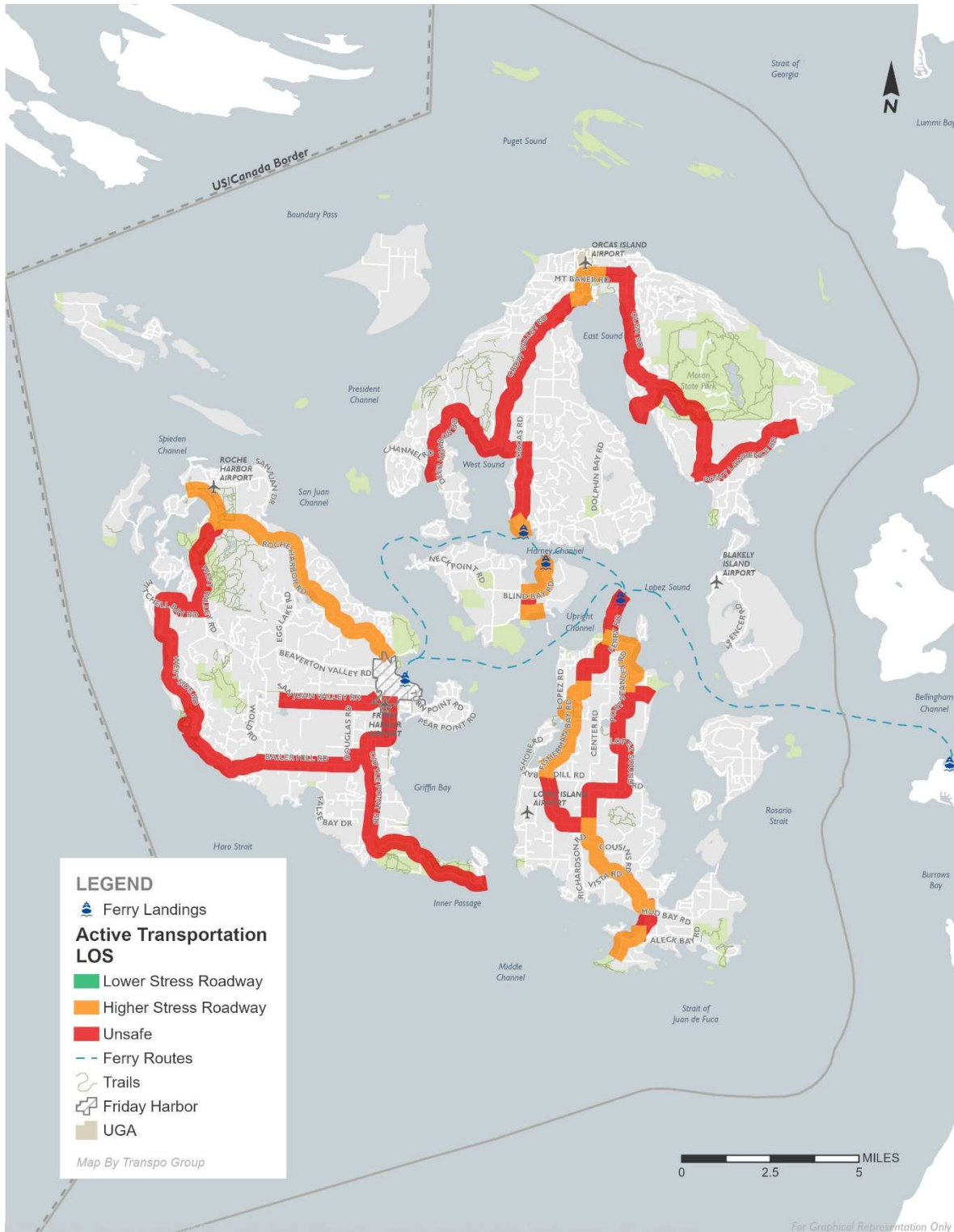
- **Green** LOS indicates an active transportation facility that provides a lower level of traffic stress where active road users are unlikely to come into conflict with vehicular road users. Facilities can include protected bike lanes and multi-use pathways.
- **Orange** LOS indicates an active transportation facility or shared use roadway that provides some level of accommodation to active users but does so at higher traffic stress levels. Facilities can include shoulders or advisory shoulders as defined previously, or roadways with very low traffic volumes (ADT < 1500) and speed limits under 25mph along roadways with minimal vertical and horizontal curves.
- **Red** LOS indicates an unsafe roadway for an active transportation user

Table 7 Active Transportation Levels of Service Overview

LOS	Standard
Green	Active Transportation facilities built to provide lower levels of traffic stress
Orange	Shoulder present OR low volume, low speed shared use roadway with higher levels of traffic stress
Red	No active transportation facility or shoulder, unsafe roadway for active transportation user

Figure 10 shows the existing level of service for the planned active transportation network. The majority of the county’s active transportation network is outlined in red indicating that no facilities exist. Most facilities that do exist are paved shoulders along roadways, or roadways with low speed limits or traffic volumes; these are marked in orange. None of the county’s roadways currently meet the standard for a low stress route, however the multiuse trail project currently in the planning phases on San Juan Island would satisfy this standard. Roadways with very low volumes including large portions of the network on Lopez Island could be considered acceptable if speed limits were reduced to 25mph. On Orcas and San Juan, roadways with higher volumes such as Bailer Hill, Cattle Point, Orcas, Crow Valley, and Olga, it may be necessary to widen roadways or consider advisory shoulder configurations to accommodate all road users.

Figure 10 Active Transportation Network Existing Level of Service



e. Long Range Transportation Planning Recommendations

Currently, all County roadways are operating within the established LOS Standard (LOS D) or better and all but one segment (Orcas Road) are expected to continue to operate at acceptable traffic volume levels for the next 20 years based on estimated traffic growth. Traffic volumes on Orcas Road should be monitored as developed occurs to understand if and when capacity increases are needed. Other county roadways are expected to provide adequate capacity to meet anticipated increases in traffic volumes. Other roadway improvements should be focused on safety enhancements and providing multi-modal access, while preserving rural characteristics.

The UGA key intersections are currently operating at LOS C or better. However, modeling of the intersections for 2045 growth, projects that North Beach Road and Mount Baker Road intersection will have excessive side street delays. In addition, the potential closure of Crescent Beach due to rising sea levels and increased storm events due to climate change may result in excessive traffic delay at several key intersections. Intersection delays will continue to be monitored by future traffic studies. Intersections with LOS D or worse shall be evaluated and improvements to reduce traffic delays will be considered based on; traffic flow predictions, intersection geometry, available road right of way, and demand management options. Potential intersection improvements will go through the standard county project planning and review process to ensure improvements are in compliance with the Comprehensive Plan Transportation Element goals and policies.

The County shall use the following assessments to develop transportation improvement priority arrays, and guide the County legislative authority in the preparation of the Six Year Transportation Improvement Plans and the Annual Construction Programs:

- Roadway condition;
- Biennial traffic counts and LOS assessments;
- Annual Complete Streets assessment;
- Traffic collision assessment for road safety plan;
- Concurrency evaluation for proposed developments. Developers in the County are not typically required to improve County roads, but they are required to construct private roads and may be required to make improvements to intersections to improve traffic flow or safety;
- Intersection LOS assessments; and
- Active Transportation Network LOS assessments.

The County shall continue to coordinate with the Town, Ports, and Washington State Ferries to provide roadway continuity with marine and air transportation services.

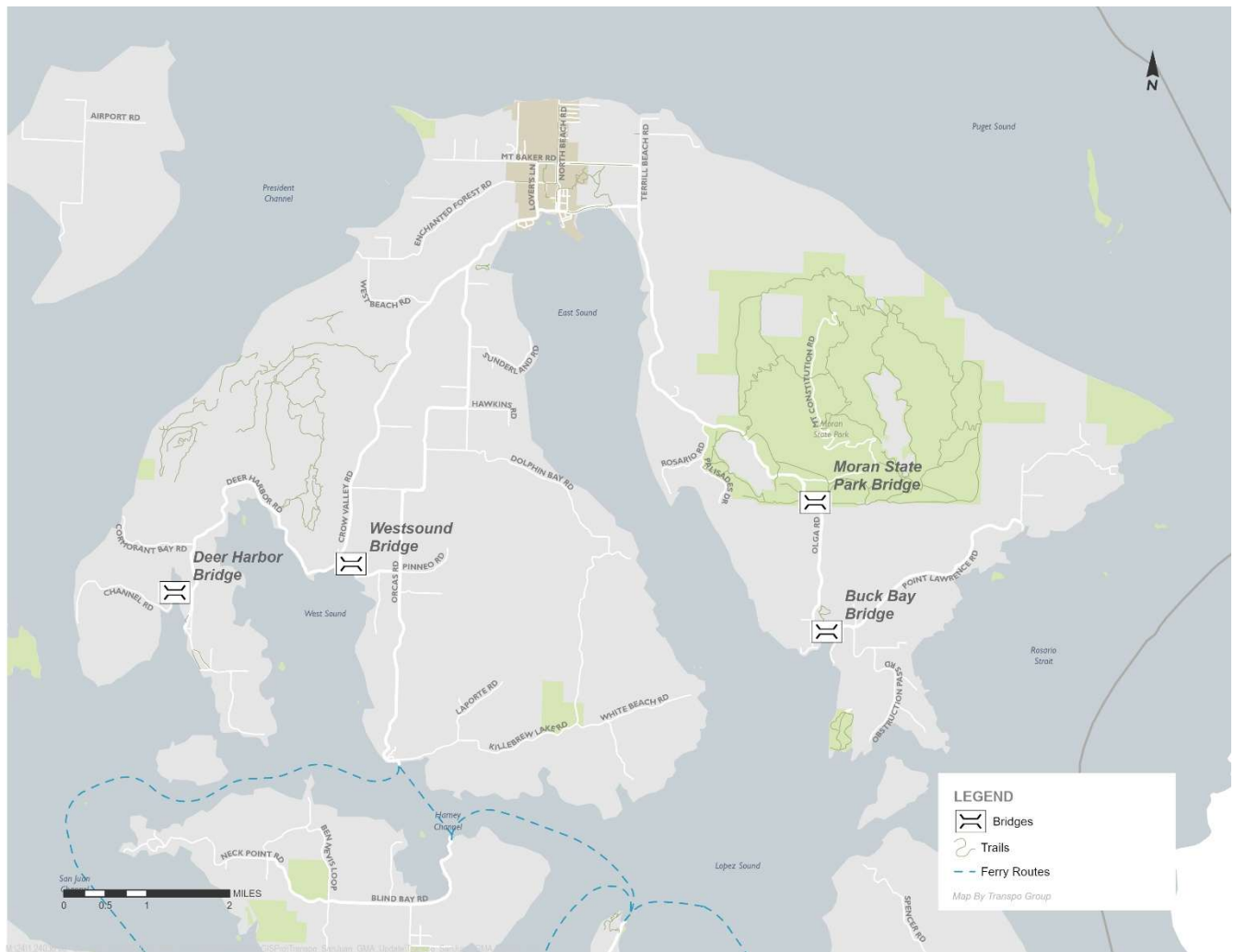
2. Bridges

a. Inventory of Existing Facilities and Services

San Juan County Public Works Department maintains four bridges on Orcas Island. The details of the bridges are provided in the Annual Bridge Report. The report includes annual maintenance activities, capital improvements, and biennial inspection results. A copy of the annual report is available on the Public Works page of the County website. The four bridges are:

- Deer Harbor Bridge on Channel Road;
- Moran State Park Bridge on Olga Road;
- West Sound Bridge on Deer Harbor Road; and
- Buck Bay Bridge on Pt Lawrence Road.

Figure 11 County Bridges



b. Demand/Capacity

The County evaluates two key factors when prioritizing bridge improvement projects: traffic capacity and structural integrity. The capacity of each bridge is evaluated as part of the roadway LOS assessment. The structural integrity of the bridges is evaluated every two years by Washington State Department of Transportation (WSDOT) bridge inspectors from Whatcom County. The condition of the bridges, along with completed and planned maintenance and capital improvements, is updated in the Annual Bridge Report, available on the Public Works page of the County website. Currently, all four bridges provide adequate capacity and are structurally sound.

c. Long Range Transportation Planning Recommendations

The County shall continue to inspect and evaluate the structural integrity and traffic capacity of the bridges.

D. Demand Management Transportation Options

The availability of other modes of transportation to provide demand management benefits is limited in San Juan County. Public transit is available on the mainland to transport people to the ferry in Anacortes. San Juan County transit options are privately owned.

1. *Public Transit Inventory of Transportation Services*

a. Human Services Transportation Plan

The 2022 San Juan County Human Services Transportation Plan (HSTP) update builds on the work completed in the 2010, 2014 and 2018 HSTP plan updates. It examines strategies for the unique and diverse needs of an isolated and rural population. It identifies ways to facilitate access to essential services and community opportunities not otherwise accessible to some county residents. It also explores means to improve services and other needs, such as coordinating transportation services between island-based and mainland transportation. With the overlapping descriptions of individual transportation needs, San Juan County Human Services Transportation programs have found that the most useful criteria to identify the transportation-vulnerable and underserved populations in San Juan County are: low income, people with disabilities, and seniors. These three criteria most frequently accompany lack of access to a vehicle, which is a significant factor in this county with no public transportation service.

The plan describes the methods used to determine public needs and service gaps, and makes recommendations for strategies, actions, and projects to meet the needs and close the gaps.

San Juan County was successful in securing three grants to meet its primary transportation needs:

- a) An on-demand, accessible taxi service with voucher program for eligible individuals;
- b) Capital assistance to replace three aging Senior Services vans; and
- c) Funding and hiring for a Mobility Manager to coordinate services for more efficient use of available public and private resources.

The 2022 HSTP presents the following priority projects for 2022 through 2026:

- Enhancing mobility options beyond the use of personal vehicles for all island residents and visitors.
- Ensuring continued funding and access to San Juan County's Transportation Voucher Program, exploring partnership with non-profit providers, and supporting drivers to operate the San Juan County Senior Center vehicles.
- Improving accessibility for Senior mobility programs, which includes recruiting new drivers, retaining current drivers and expanding the vehicle fleet to meet demand for these services.
- Improving regional coordination for transportation services, including defining the role of transit agencies during emergencies, and ensuring priority ferry loading/offloading for senior and medical transit vehicles
- Improving ease of use of services in the county, including better information access about mobility services offered by the county, enhancing wheelchair access, and expanding multimodal mobility infrastructure.
- Reliable funding for organizational capacity is identified as a key to pursuing other funding, communications and networking, and the continued success of human services transportation in San Juan County.

The HSTP is available on the Health and Community Services Page of the County website.

b. Skagit Transit (SKAT)

SKAT Provides mainland connecting service from the ferries via Route 410 with a stop at the Anacortes ferry terminal. Accessible SKAT buses take San Juan County residents to March Point, where they can transfer to the Tri-County Connector service going to the Skagit Transit Center (which hosts Greyhound Bus, Amtrak, or buses northbound to Bellingham) or south via Island Transit, to Whidbey Island. Students attending one of the campuses of Skagit Valley College use SKAT, as do people who work in the Mt. Vernon or Burlington areas.

c. Airport Shuttle Service:

Shuttle bus service to SeaTac Airport is provided by one San Juan Island-based provider, the Island Airporter. They provide scheduled ground service six days a week, offering both passenger and package service. San Juan County is also served by a private airport shuttle service located on the mainland; Bellair Airporter Shuttle meets the ferry at the Anacortes terminal and connects to Mt. Vernon, Bellingham, Seattle and SeaTac.

d. ISLAND RIDES

Island Rides is a local nonprofit IRS 501(c)(3) organized exclusively for charitable purposes. Island Rides is supported by civic clubs, social services, the County, and WSDOT. The organization uses a fleet of 6 vehicles and 20 volunteer drivers to provide transportation and delivery services to seniors, people with disabilities, and low-income individuals on San Juan, Lopez and Orcas Islands. Rides and deliveries are scheduled in advance and payment is either by small donation or entirely free. Operating hours are between 11am and 3pm.

e) Island Summer Shuttle Services:

As of 2018, there are two shuttle bus services on a seasonal basis to transport tourists from the ferry terminal in Friday Harbor to service hubs and visitor attractions on San Juan Island. San Juan Transit offers fixed-route service, stopping at locations that are of interest to visitors. It offers a limited number of local discount cards for commuters going to work, through a punch card system. Several of the larger employers, such as Roche Harbor Resort, contract with San Juan Transit for their summer employees and/or guests. The buses generally operate between Memorial Day and Labor Day. San Juan Transit has a lift-equipped van that provides weekend service to Orcas Island and Lopez Island. The Jolly Trolley provides shuttle service from the ferry to designated locations on San Juan Island.

f. Taxi Services

San Juan Island is the only island that has had stable taxi services. Currently, San Juan Island and Orcas Island have licensed providers. On Lopez, taxi services have been tried sporadically but have not yet demonstrated the ability to survive long-term. Alternatives to taxis such as UBER or Lyft are not providing services on the islands.

g. sjRIDESHARE

Islanders without cars often walk onto ferries, hoping to find someone they know or a "friend of a friend" who is willing to get them to their off-island destinations. Electronic ridesharing is available to a limited extent, through island-specific websites like lopezrocks.org and an Orcas-oriented Facebook site. Along county roadways, there are a series of signs that designate ridesharing opportunities. sjRIDESHARE is the state's only sanctioned hitchhiking system. It provides designated safe, accessible sites for potential riders to stand and wait for a ride. It also provides guidelines for both riders and drivers.

h. Senior Service Vans

The Senior Services Council is a non-profit corporation, with a mission to assist seniors in remaining independent and in their own homes as long as possible. The Council operates a fleet of vans for the primary purpose of transporting seniors and people with disabilities to the group meals held at the senior centers on the three major islands. The program also offers periodic trips to the mainland from San Juan and Orcas islands, for medical visits and occasionally for social outings or shopping trips.

2. Demand/Capacity

San Juan County is the only county in Washington State that has no public transit system other than a ferry. No island has bus service, other than intermittent private bus services that operate during the summer months. San Juan and Orcas are the only islands that currently have reliable taxi service.

The Transportation Voucher Program (TVP) for human services transportation is available in San Juan County, and the TVP has substantially improved access to transportation services for many. However, the TVP program does not have secure funding, and further, longer term needs of a large number of transportation-vulnerable members of the community remain to be met.

3. Long Range Transportation Planning Recommendations

The County does not plan to operate public transit services; however, the County will continue to support existing public and private transportation services. County roadways and marine facilities provide access for transit systems, and the roadways in the urban growth areas support the mobility of seniors and persons with disabilities. The County will continue to upgrade roadways in urban growth areas, to provide better accessibility for persons with disabilities.

E. Freight Mobility

The ability to move goods and services within the county, as well as to and from the mainland, is essential to the economic vitality of San Juan County. The county is unique among other areas in the state, in that there are no roads that lead to San Juan County. The only ways to get to and from the county are via air or water. This fact raises challenges in developing reliable methods for moving freight to and from the region. As stated in the WSF Long-Range Plan, WSF is an essential part of the highway network in Western Washington, and for communities on the San Juan Islands. WSF is the only link from ferry-served islands to the mainland for personal and commercial vehicles. The commercial vehicle connection is essential; San Juan County communities depend on ferries as the primary means to transport goods – including basic supplies and local products – to and from -- the wider market.

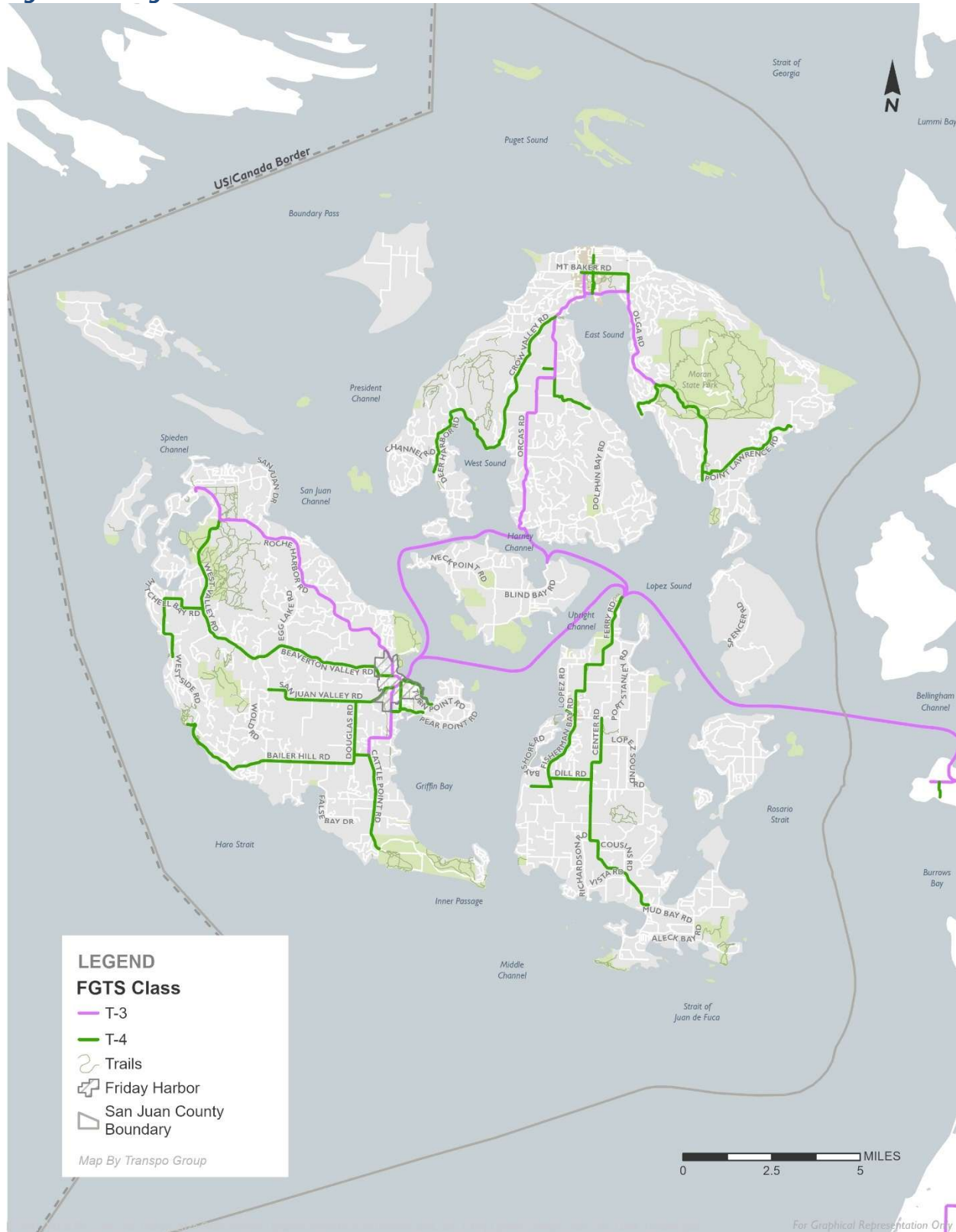
Ferries are designed to allow “tall” vehicles; i.e., commercial trucks over 7’6” in height, to be loaded in the center of the boat. The available space is limited and during high demand periods,

commercial vehicles may be delayed. WSF has a “preferred loading” program for commercial vehicles. This allows qualifying businesses to reserve space on the ferries, provided the company has met certain requirements as to frequency of travel and timely arrival at the ferry terminal.

For those islands not served by ferries, local barges and ferries transport a limited number of people and goods between the islands.

Another essential freight transport link is represented by the airports on the islands, which provide critical support to the economic well-being of each community. The ferry-served islands have airports owned and operated by a public Port District. Other islands have airstrips and private landing strips that can be used to transport freight, as well as passengers. The airports on both San Juan and Orcas Islands are located close to the main town and village, facilitating the ability to move goods to the commercial centers. Air facilities in San Juan County provide critical mobility and connectivity for people and freight in the region.

Figure 12 Freight Routes



F. Intergovernmental Coordination

San Juan County acts as its own Transportation Planning Organization, together with the Port of Friday Harbor, and the Town of Friday Harbor. Meetings on coordination of transportation issues are held on an as-needed basis, primarily when funding is available or there are common projects between entities. San Juan County is geographically isolated, but it is dependent on the facilities of adjacent jurisdictions to ensure the effective transportation of freight and people to and from the county. Therefore, there have been discussions with other Counties in the past as to the benefits of joining an existing adjacent Regional Transportation Planning Organization (RTPO) or Municipal Planning Organization (MPO).

Common interests and goals with Skagit County primarily concern the coordination of the Skagit Area Transit (SKAT) and the Anacortes ferry, to ensure that island residents can efficiently travel between Anacortes and the I-5 corridor. With the ferry schedule changing seasonally, coordination of transit schedules has been a challenge.

With the Whatcom Council of Governments, the viability of a passenger ferry has been the focal point of past discussions, with transit connections as an ancillary topic.

San Juan County has been participating actively in regional informational and coordination meetings to assess the regional transportation issues and developing projects to better position the county to respond in a cooperative manner with other agencies. The North Sound Transportation Alliance is a coalition of residents, elected officials and professional staff of transportation agencies from Washington's five northwestern-most counties: Whatcom, Skagit, Island, San Juan, and northern Snohomish. The NSTA strives to develop better ways for people to travel in the region. San Juan County attends the general meetings and has participated in subcommittees and presentations. San Juan County has also periodically attended the quarterly MPO/WSDOT Committee meetings. This attendance has allowed the county to remain current on funding opportunities and requirements, as well as to stay informed on state transportation planning efforts.

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TranspoGroup Memoranda June 16, 2020; *Final Lopez Village UGA LOS and Circulation Memo*.

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Washington State Department of Transportation, Ferries Division; *Washington State Ferries 2040 Long-Range Plan January 2019*, <https://www.wsdot.wa.gov/ferries/planning/long-range-plan/the-plan>

Washington State Department of Transportation, Ferries Division; *Traffic Rider Segment Report July 1, 2017 thru September 30, 2017*, https://www.wsdot.wa.gov/ferries/traffic_stats/

Washington State Department of Transportation, Ferries Division; *Washington State Ferries Summer Service Plan 2018*, <https://www.wsdot.wa.gov/news/2018/05/21/ferries-sets-sail-new-summer-service-plan>

Whatcom Council of Governments (WCOG) Website; <http://wcog.org>

II. TRANSPORTATION FINANCING

This section addresses transportation funding for transportation projects funded by the County road fund and administrated by the Public Works Department.

A. Overview

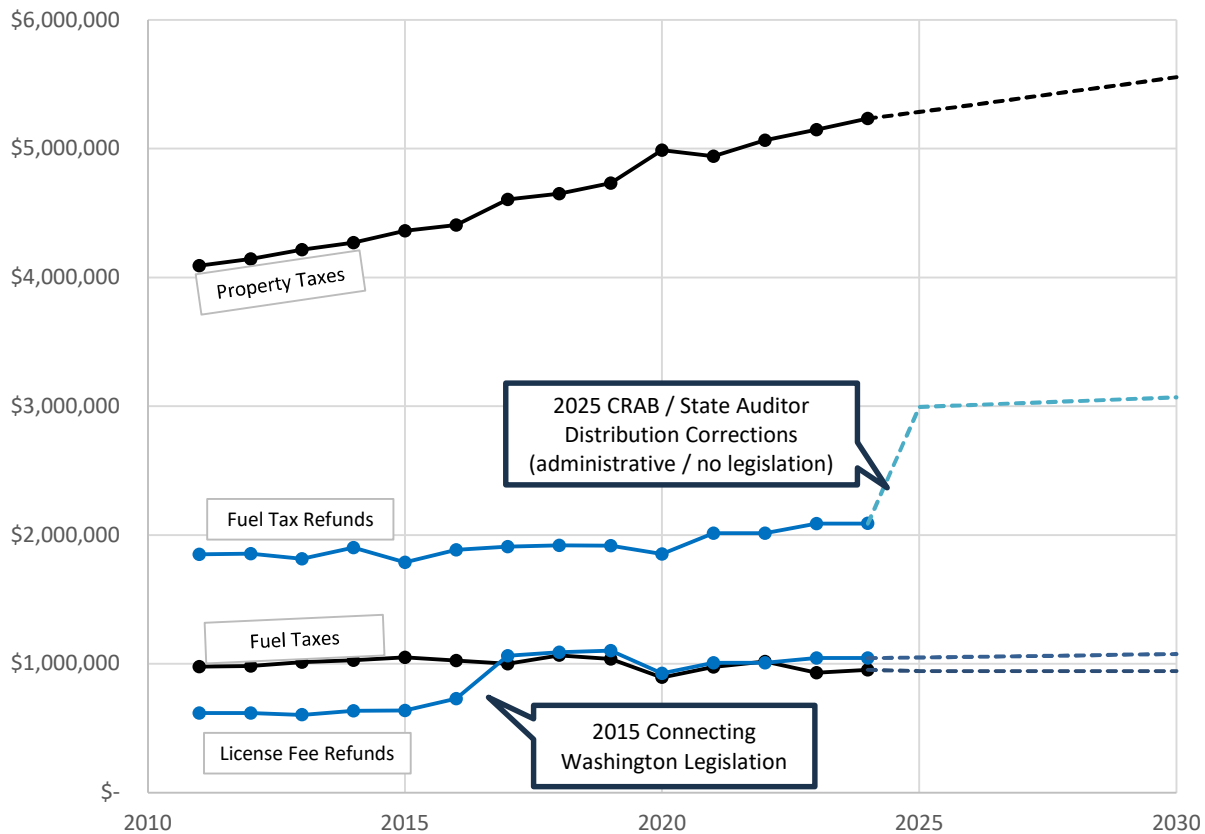
The County road fund receives revenue in two general categories: dedicated revenue (taxes) and discrete revenue (grants). Taxes are the most reliable and predictable source of transportation funds and are used primarily to support the County's operation and maintenance (O&M) programs (those necessary to maintain the existing level of service). They are also used to support, if available, the County's capital programs (those developed to improve the level of service, multi modal access, and/or safety). The ability of the County to self-fund its capital programs enables it to best prioritize transportation improvements in accordance with the recommendations of the Plan. When capital programs become grant-dependent, individual capital projects must be developed to be grant eligible. Developing grant eligible capital projects requires the expenditure of staff time and funds with no certainty of award. Further, grant compliance may surrender the County's desire to have full authority over project design elements reflective of local conditions and social values.

B. Transportation Revenues

Revenue sources include property taxes, fuel taxes, and Capron refunds. Property taxes are authorized by the County legislative authority and are subject to deductions from levy shifts and levy diversions. Fuel taxes are collected by the State and are distributed to the County. The 1929 Capron Act (RCW 46.68.080) provides additional revenue to the County consisting of motor vehicle license fees and motor vehicle fuel taxes.

As shown in Figure 13, while tax revenue is normally stable and predictable, the license fee portion of Capron refunds increased significantly in 2015 (approximately \$500,000/year) due to the passage of the 2015 Connecting Washington legislation.

Figure 13 Revenue Projections



Source: San Juan County Road Fund Budgets 2011-2024 and projections by County Engineer

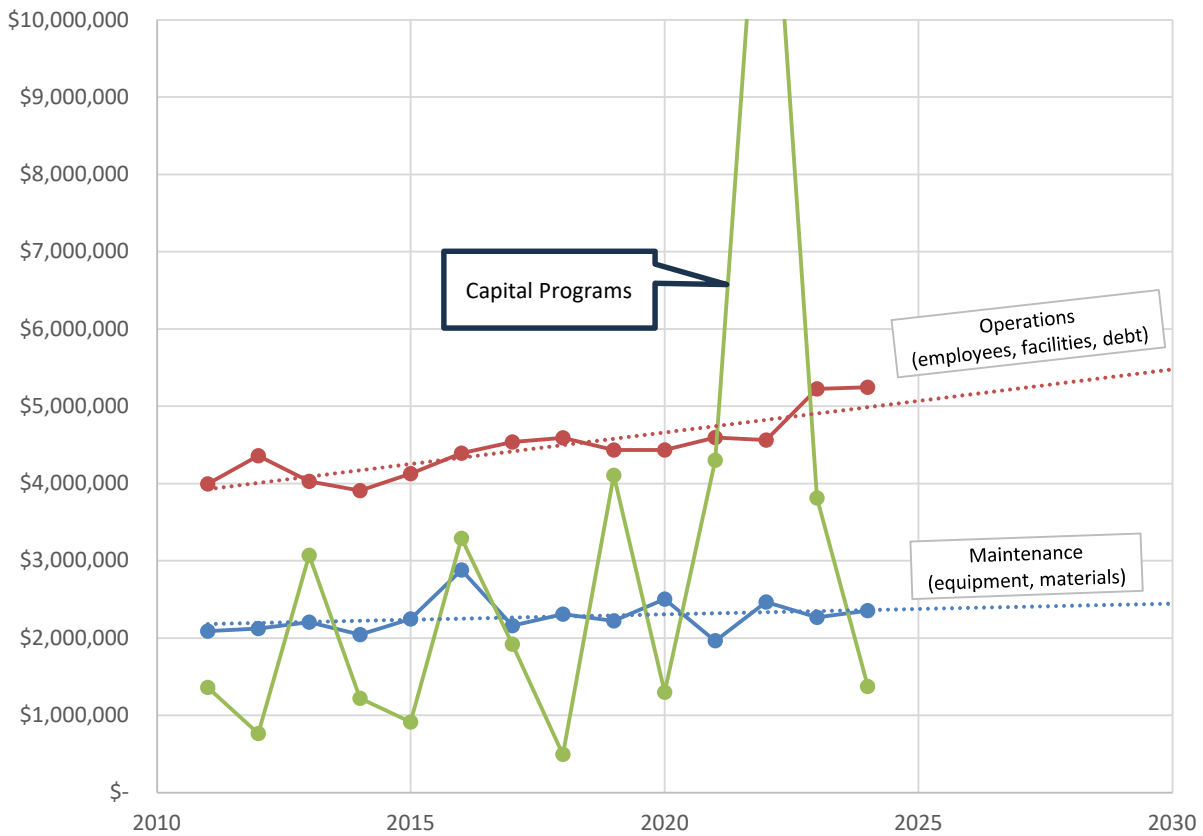
C. Transportation Expenditures

Expenditures have been categorized into groups to facilitate annual projections and assist in strategic organizational decisions: operations and maintenance (O&M) costs, and capital programs. Some of the many factors that complicate the ability to predict these costs include collective bargaining agreements, employee benefit programs, raw material costs (rock and oil), and inclement weather response (snow, ice, and wind).

Property tax deductions due to a levy shift or levy diversion are discretionary actions authorized by the County legislative authority each year. They are shown as an expenditure so that property tax revenue can be projected in accordance with the authorized county road levy.

Figure 14 shows the projected expenses in these groups.

Figure 14 Transportation Expenditure Projections



Source: San Juan County Road Fund Budget 2011-2024 and projections by County Engineer

As can be seen from *Figure 14*, the capital programs budget is subject to large variation, largely due to the extent to which the County is reliant on grant funding (state or federal) to facilitate its capital program.

D. Analysis and Projections

San Juan County pools money across all different revenue streams to pay for fund its transportation system (both O&M programs and capita projects). Figure 15 shows five years of historic transportation revenue and expenditures, and forecasts developed by the County engineer through 2030.

Figure 15 Annual Transportation Revenue & Expenses



Source: San Juan County Road Fund Budget 2019-2024 and projections by County Engineer

The transportation expenses forecast for 2025-2030 shown on Figure 155 are expected to be almost entirely for O&M. This forecast indicates that construction for planned capital programs may be entirely dependent on grant funds moving forward. This projection will need to be continually revised as necessary cost cutting and/or revenue increase measures are implemented as part of the annual Transportation Improvement Program (TIP).

E. Potential Options for Reducing O&M Expenses

The Public Works Department has two basic options to consider to reduce O&M expenses:

- Accelerate process improvement strategies to decrease costs by increasing operational efficiencies. While process improvement is continually evaluated for cost saving measures, it is most effective when strategically implemented over time when opportunities arise. For example, an opportunity for fleet optimization may present itself when advances in the industry allow for combining equipment or sharing equipment between islands.
- Implement level of service reductions by cutting back on maintenance programs. This may include reductions to the County's chip seal overlay program, which will adversely affect the quality of County roads. Over time, deferred maintenance is typically more expensive as the scope and scale of repairs exceeds what can be performed under routine operations.

F. Potential Source of Transportation Revenue

The State's Transportation Resource Manual (reference provided herein) includes the complete listing of options that local governments may consider to increase dedicated revenues (taxes) for transportation. The two most practical options are:

- Transportation Benefit Districts: Chapter 36.73 RCW authorizes counties to form transportation benefit districts that can raise revenue for specific transportation projects, usually through vehicle license fees or sales taxes.
- Property Taxes: Any county may impose a road levy up to \$2.25 per \$1,000 assessed value for the county road district. In 2019 the San Juan County's road levy was approximately \$0.62 per \$1,000. The road levy is subject to the 1 percent annual "levy lid" (RCW 84.55.010 and WAC 458-19-020).

G. References for Section II Update

CRAB County Engineers' and Public Works Directors' Desk Reference

Updated regularly by the Washington State County Road Administration Board (CRAB), a general resource to support the work performed within the Office of the County Engineer.

<http://www.crab.wa.gov/engineering/dcs/20180419DeskRef.pdf>

Transportation Committee Transportation Resource Manual

Produced annually by the Transportation Committee (House Transportation Committee & Senate Transportation Committee) and includes a comprehensive list of transportation taxes that have been authorized by the Legislature for use by local governments.

<http://leg.wa.gov/JTC/trm/Pages/TRM2017.aspx>

Office of Financial Management (OFM) Transportation Revenue Forecast Council

Each quarter, technical staff of the Department of Licensing, Department of Transportation, Washington State Patrol and the Office of Forecast Council produce forecasts. The revenue forecasts agreed upon by the Transportation Revenue Forecast Council members become the official estimated revenues under RCW 43.88.020 21.

<https://ofm.wa.gov/budget/budget-instructions/transportation-revenue-information>

WSDOT Fuel and Vehicle Trends Report - Summary of articles appearing in popular, business and technical media referring to the impact of fuel costs and fuel efficiency on vehicle technology, development and markets. It also compares the latest monthly actual vehicle registrations, fuel prices, consumption and revenues to the current forecast.

<https://www.wsdot.wa.gov/sites/default/files/2020/05/05/FuelandVehicleTrends-Apr2020.pdf>

Department of Revenue Property Tax Levies "Levy Manual"

Designed for the convenience of the 39 county assessors and the Department of Revenue. It is also a useful tool for other county officials, taxing district officials, legislators, and, of course, taxpayers.

https://dor.wa.gov/sites/default/files/legacy/Docs/Pubs/Prop_Tax/LevyManual.pdf