



# PIERCE COUNTY WATERBORNE TRANSPORTATION STUDY

## SITUATION ASSESSMENT

DRAFT | February 2015

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## **1.0 INTRODUCTION**

Pierce County is responsible for ferry services from Steilacoom to Anderson Island and Ketron Island. Operation of the system and the Steilacoom dock are contracted out to a private ferry operator, HMS Global Maritime. The last comprehensive study of the ferry system was the 2003 Waterborne Transportation Study. This situation assessment provides a comprehensive overview of current operations and service, population and ridership trends, fare structures, and financial situation. This assessment provides a basis on which to identify the current system's strengths and weaknesses, and identify upcoming key challenges and opportunities for future operations.

## **2.0 OPERATIONAL ASSESSMENT**

### **2.1 System Description**

The Pierce County Ferry System provides service between the town of Steilacoom and Anderson and Ketron Islands. The system operates two vessels, running seven days a week. Privately owned companies and private parties provided ferry services from the early 1900's until the County assumed responsibility for the Anderson Island service in 1937 and the Ketron Island service in 1961.

The ferries begin and end the day at the Steilacoom terminal, with normal weekday operating hours of 5:45am to 8:00pm, extending to 9:30pm on Thursdays and as late as 11:50pm Fridays, depending on the time of year. Saturday service generally operates 5:45am to 10:50pm and Sunday service runs 6:45am to 9:30pm.

The trip between Anderson Island and Steilacoom is about 3.5 miles and takes approximately 60 minutes roundtrip. There are 12 roundtrips Monday through Wednesdays, 13 on Thursdays, 14 on Fridays and Saturdays; and 12 on Sundays. Three or four of the sailings also stop at Ketron Island, adding about four miles and 20 minutes to the roundtrip (Washington State County Road Administration Board, 2008). Service to Ketron Island is by reservation only, and a triangle route between Ketron, Anderson, and Steilacoom is used for Ketron runs.

Pierce County contracts with HMS Ferries to operate and manage the ferry system. The current contract runs from August 1, 2015 through December 31, 2019.

All fares are round-trip and are collected at the Steilacoom terminal. Fares can be purchased online or at the terminal.

### **Vessels**

The Pierce County Ferry System consists of two vessels, the M.V. Christine Anderson, built in 1994, and the M.V. Steilacoom II, built in 2006. Each has a capacity of 54 cars. The Christine Anderson has a capacity of 250 passengers; the Steilacoom II can hold 300 passengers. (Washington State County Road Administration Board, 2008)

Ferry usage is shared between the two vessels. Only one vessel operates on the route at a time, alternating service every two weeks. When the vessels are taken out of operating rotation they are docked at the ferry terminal for maintenance (Pierce County 2014). Pierce County has put two boats into service over busy summer holiday weekends, including Fourth of July and Labor Day. The boats are scheduled as demand warrants and runs with additional boats are not advertised (Pierce County Public Works and Utilities, 2014).

The vessels require a crew of four to operate, including one Master and three Deckhands (Pierce County, 2014).

### **Ketron On-Demand Service**

Beginning January 1, 2012, Ketron Island ferry service became on-demand. Passengers from Ketron to Steilacoom must call twenty minutes in advance of a Ketron-eligible sailing to request the vessel to stop at Ketron. There are approximately four daily sailings that are Ketron-eligible, depending on day of week and season. Service from Steilacoom to Ketron Island does not require a call in advance, but patrons must arrive at the Steilacoom terminal twenty minutes before a Ketron-eligible sailing. Analysis had indicated that prior to 2012 approximately 20% of the Ketron runs were not used. (Pierce County, 2013)

### **Staffing**

As of January 2015, HMS Ferries employed 28 staff for Pierce County ferry service. This included seven Captains, seven Engineers, six Deckhands, four Ticket Agents, one Terminal Maintenance, one Port Captain, one Office Manager, and one General Manager. Additional part-time staff are added during the peak season. Employees are not unionized. (Caputo, 2015)

As noted above, the U.S. Coast Guard Certificate of Inspection requires a crew of four to operate both the Christine Anderson and the Steilacoom II, including one Master and three Deckhands. U.S. Coast Guard rules mandate that vessel staff work no more than 12 hours on duty in a 24-hour period. HMS Ferries generally has an eight hour minimum for regularly scheduled shifts.

### **Vehicle Loading**

Vehicle unloading and loading takes approximately ten minutes, but can stretch to fifteen minutes during summer high volume periods. Offloading and loading is performed by HMS vessel crew. Typically, three staff are needed to unload and two to load. During extreme low tides, terminal ramps can cause damage to vehicles with minimal ground clearance during boarding or disembarking. As a result, oversize vehicles are generally not loaded during these periods.

### **Asset Utilization**

As described above, the Christine Anderson can accommodate 54 vehicles and 250 passengers, while the Steilacoom II can accommodate 54 vehicles and 300 passengers. The number of vehicles left behind when a sailing is full is tracked by month and year. In 2013, this ranged from 1 car left behind in January to 734 vehicles left behind during the month of August, which is the peak travel month.

### **Ferry Delays**

In 2013, 4.2% of departures reported delays, or 431 sailings. Causes included full loads, trains, overloads, mechanical issues, power outages, police service call, weather, and the low tides.

## **2.2 Steilacoom Terminal**

The Steilacoom Terminal facility includes a slip, transfer bridge, dock, waiting room/ ticket counter, parking facilities, and queuing lanes that extend along Union Avenue into Steilacoom. The ferry terminal is located on a concrete pier. Two ferry slips connected to the pier are used by Pierce County; one for vessel operation and the other for tie-up of the second vessel when not in service.

In 2012 Pierce County made improvements to the Steilacoom Ferry Terminal facility at a cost of \$470,000. Improvements included a new entrance, refinished benches, fresh paint, energy-efficient windows, a wireless connection, updated bathrooms, and upgraded heating and cooling systems. The lack of a second operating slip limits the ability to fully maximize the use of the County's two vessels. As described above, Pierce County puts both vessels into service during some peak holiday travel periods, but the service schedule must work within the landside constraints.

### **Fare Collection**

Ticketing and fare collection is provided by HMS staff located at the Steilacoom Terminal. Pierce County requires at least one HMS employee at the Terminal at all times during operating hours. During peak summer periods, two HMS staff are generally employed for ticketing. Vehicle customers arriving at the Steilacoom Terminal must park in the staging area and walk to the terminal to have their ticket scanned or purchase a ticket, then walk back to their vehicle.

Unreliable internet access at the Steilacoom Landing can cause ticket scanners to lose connectivity, which can cause delays in loading. This typically happens during summer peak periods when a second ticket taker is working in an area with limited mobility. The system relies on Wi-Fi and is outside the primary footprint of local providers.

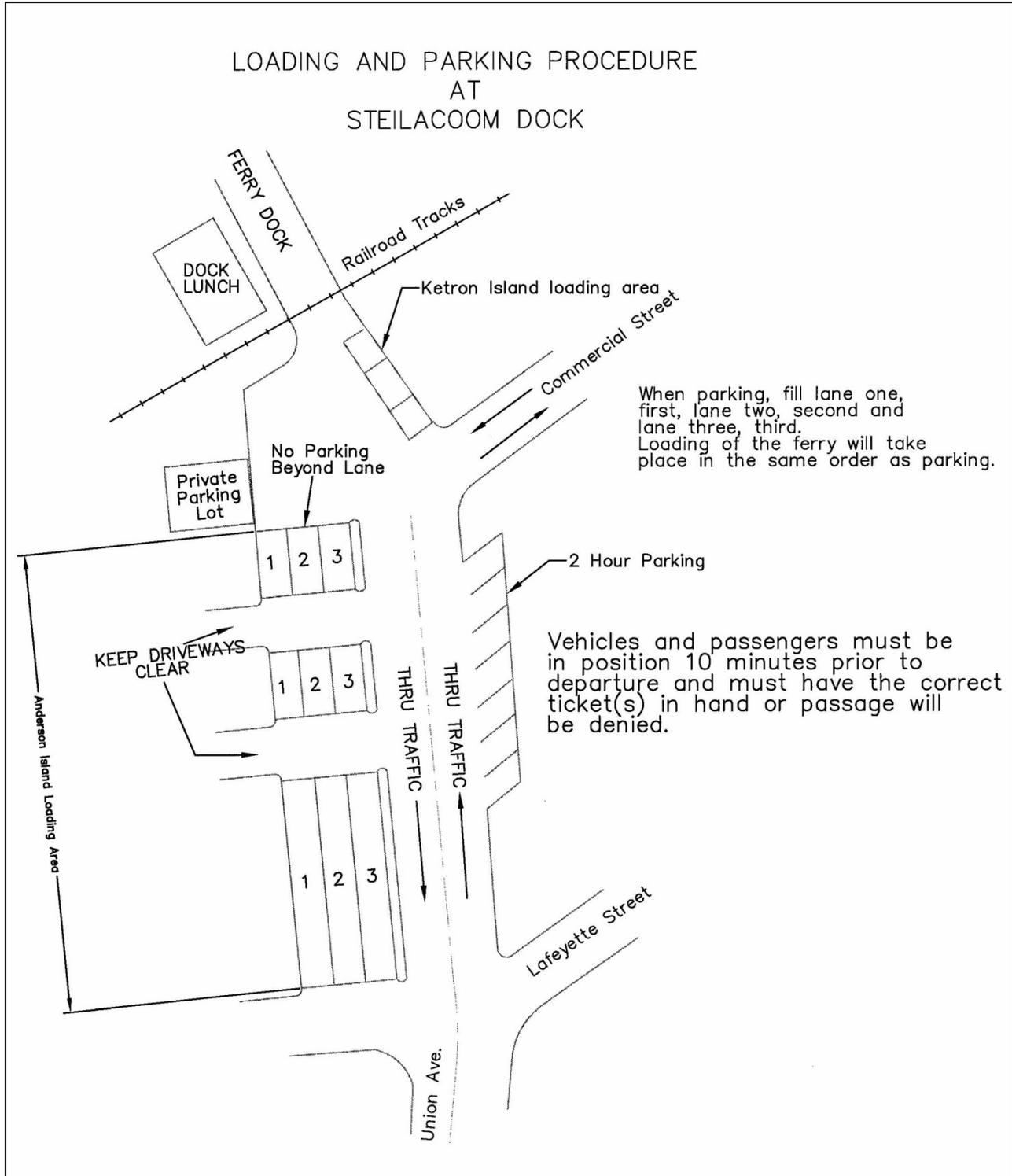
The current ticketing process is considered inconvenient for ferry customers, who must park and walk to the terminal to purchase or show their ticket, then return to their vehicle for loading. The County is considering constructing a staffed ticket booth in the center lane to eliminate the need for people to leave their vehicles. However, this could require blocking off Lafayette Street, which would create access issues.

### **Loading, Offloading, and Queuing**

There are three lanes for vehicle queueing at the Steilacoom Terminal, as depicted in Exhibit 1. Vehicles are loaded from Lane 1, then Lane 2, and then Lane 3. The vehicle capacity of the three queueing lanes is approximately 96 cars. During busy periods when the terminal reaches capacity, vehicles must line up on Union Avenue creating traffic issues in Steilacoom. Vehicle offloading is performed by three HMS crew members and traffic control during vessel loading is handled by two crew members, while the third crew member scans tickets.

Exhibit 1

Steilacoom Ferry Loading Instructions



Source: Pierce County 2015

## **Railroad Crossing**

The railroad crossing adjacent to the Steilacoom terminal has been called a hazard and disruption to ferry service, preventing timely loading and unloading when trains pass by. In 2013 trains at Steilacoom were estimated to have caused delays on 93 ferry trips (out of 10,311 total trips).

## **Parking**

There are three parking lots located near the ferry terminal, two of which are leased to the Department of Social and Human Services. On-street parking in the ferry dock vicinity is time-restricted to preserve parking access for local residents and businesses. In 2008 Pierce County Public Works and Utilities conducted a survey of ferry riders about parking in Steilacoom. Of the 86 respondents, 62% said they park in and around Steilacoom when using the ferry and another 21% said they sometimes park in that area.

It has been observed that some ferry customers occasionally leave vehicles in Steilacoom overnight, which is a concern to local residents and businesses. Vehicles are left in Steilacoom for multiple reasons. First, Island residents who miss the last evening ferry may be forced to spend the night away from home and could end up sleeping in their car or finding other accommodation. Second, some Island residents leave a second car parked in Steilacoom when they are on the Island. This allows them to pay the passenger fare and then retrieve their car in Steilacoom to get to their destination.

## **Pierce Transit Connection**

The Steilacoom terminal is served by Pierce Transit Route 212, which connects with Pierce College–Fort Steilacoom and Lakewood Town Center. The route stops at Commercial Street and Union Avenue in Steilacoom, about one block from the ferry terminal. As of January 2015, the route served the Steilacoom terminal approximately every two hours between 5:30am and 7:47pm on weekdays. There is no service on weekends. (Pierce Transit, 2015)

It has been observed that the Pierce Transit 212 route schedule does not align with ferry landings in Steilacoom. In addition, route 212 only provides service every two hours, which provides few opportunities to align a ferry and transit trip.

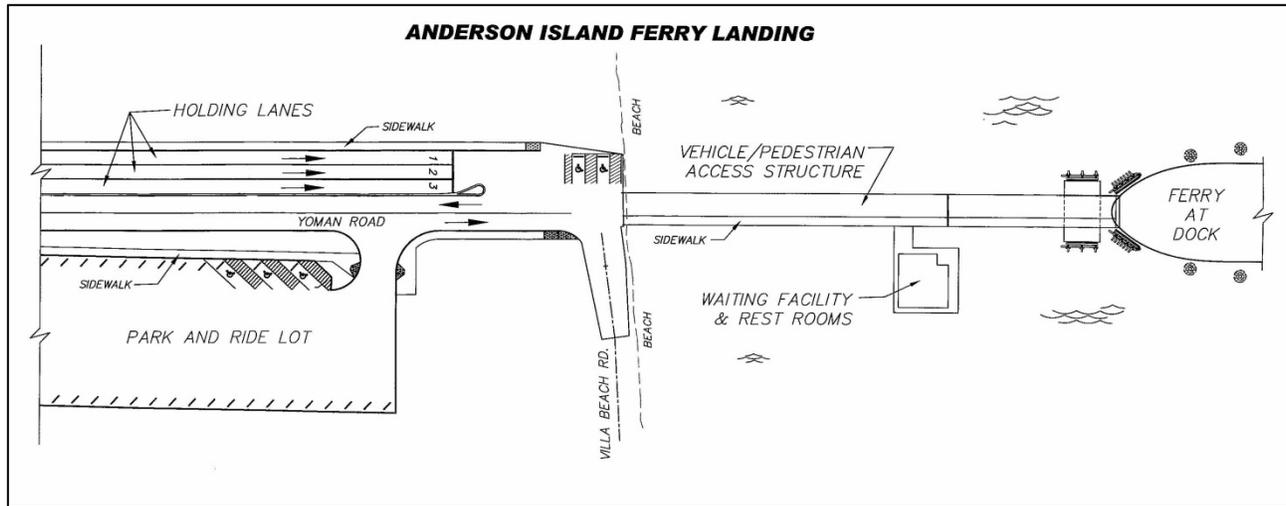
## **2.3 Anderson Island Terminal**

The Anderson Island Terminal includes one ferry slip and transfer span, dock, waiting room, and park & ride facility, as shown in Exhibit 2. The holding area has capacity for approximately 91 vehicles and the park and ride facility has capacity for approximately 100 vehicles. There is no transit service on Anderson Island.

An operational issue that has been raised previously is the process for passenger pick-up and drop off, which takes place at the dock rather than the park and ride facility. Because the road is narrow and there is no dedicated space for passenger loading/unloading at the dock, vehicles picking up passengers at the dock can block traffic exiting the ferry, creating a safety hazard. There has been discussion of addressing this issue by adding a bus shelter at the park and ride lot to move this function away from the dock and require passengers to wait for pick up at that location.

## Exhibit 2

### Anderson Island Loading Instructions



Source: Pierce County 2015

## 2.4 Ketron Island Terminal

The Ketron Island Terminal consists of a dock and a single operating slip and dock.

## 3.0 RIDERSHIP

### 3.1 Rider market segments

Pierce County Ferry ridership can be broken into five broad categories or market segments:

#### Regular commuters

Commuters are the most frequent users of the ferry system. These riders primarily use the ferry system for transportation to and from their workplace or school. The majority are assumed to travel from Anderson Island to the mainland in the morning and back to the Island in the evening. However, employment data shows that most jobs on the Island are held by people who live off-island, which indicates there are reverse commute trips as well. Ferry ridership data tracks the number of people traveling using multi-ride "commuter" tickets that are sold at a discount compared to standard fares. However these tickets are commonly used by people who use the ferry system frequently but do not commute daily to a job on or off island. So this data does not clearly represent trends with regards to workplace commute travel.

#### Non-commuting island residents

Non-commuting island residents do not regularly travel to the mainland for work or school. However, they do rely on the ferry system for occasional trips such as errands, shopping, medical care, and other miscellaneous purposes. In 2002, 23% of customer survey respondents indicated their trip purpose was shopping/personal business.

### Seasonal and weekend residents

These riders typically own or rent homes on the islands and either reside on the island on a seasonal basis or travel to the island on weekends. These customers travel more frequently during the summer months. According to the 2010 Census, 42% of all housing units on Anderson Island were for seasonal, recreational, or occasional use.

### Tourists and visitors

These customers travel to the islands for recreation, business, or visiting friends and relatives. They travel infrequently and typically during the peak summer months or major holidays. In 2002, 25% of survey respondents self-identified as visitors. Washington State Ferries (WSF) data indicates that 76% of WSF recreational trips are generated by customers residing in the Central Puget Sound region, with 14% coming from outside the region (Washington State Department of Transportation, 2010).

### Business and commercial vehicles

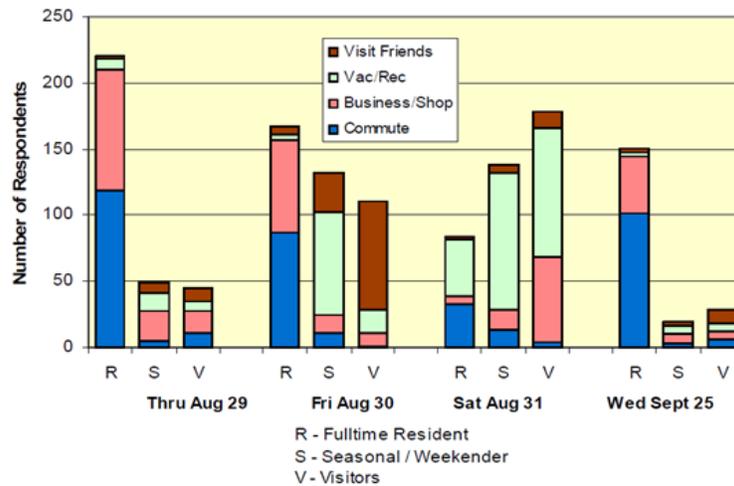
Business and commercial vehicles include freight and delivery services (USPS, UPS, and Fed-Ex) as well as independent construction/trade businesses. 2013 ridership data indicates that drivers of trucks (vehicles over 20 feet in length) are a small fraction of all customers (1.3%).

## 3.2 Travel patterns by market segment

A new ridership survey will provide information on current travel patterns by market segment. The most recent data available is an on-board ridership survey of Pierce County Ferry customers conducted during the summer of 2002 (IBI Group, 2003). That survey focused on three segments: Fulltime residents, Seasonal/Weekenders, and Visitors. Exhibit 3 shows how trip purpose varies by day of the week and by market segment. Not surprisingly, a large portion of weekday trips were commutes as well as business/shopping. On Saturday, vacation/recreation was the dominant rider response.

**Exhibit 3**

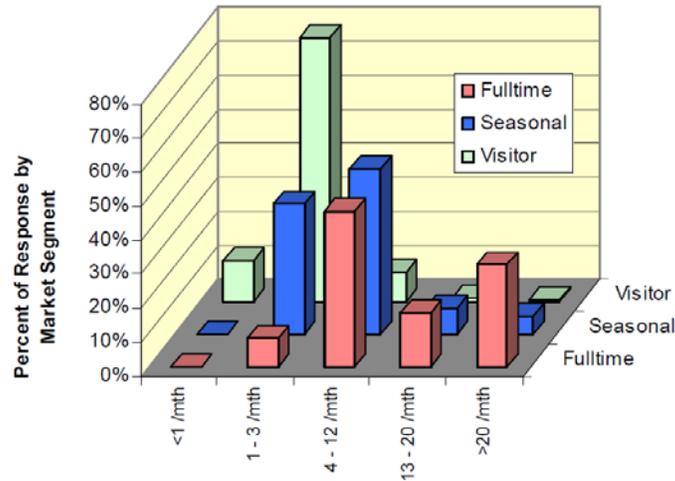
**Trip Purpose by Market Segment and Day of Travel, Summer 2002**



Source: IBI Group, 2003

A separate mail out survey asked property owners to indicate the frequency of travel during the summer and non-summer months. Exhibit 4 shows that frequency varies by market segment, with fulltime residents making, on average, the most trips per month while island visitors the least.

**Exhibit 4**  
**Round Trips per Month by Market Segment, Summer 2002**



Source: IBI Group 2003

### 3.3 Population and Demographic Trends

#### Anderson Island

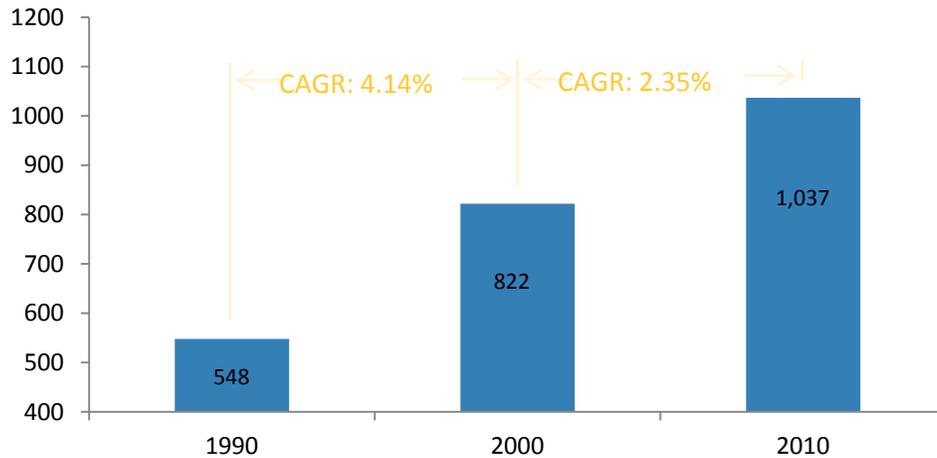
The most frequent riders of Pierce County ferries are Anderson Island residents. This section summarizes population and demographic trends that may be related to ferry travel patterns.

#### Population and Housing

Anderson Island lies in unincorporated Pierce County and is home to 1,037 residents according to the 2010 Census. However, many residents are seasonal which results in a fluctuating population which typically peaks in the summer months. Exhibit 5 shows that the U.S. Census (measured in April 2010) reflects steady population growth over the past two decades.

**Exhibit 5**

**Anderson Island Population, 1990 – 2010<sup>1</sup>**

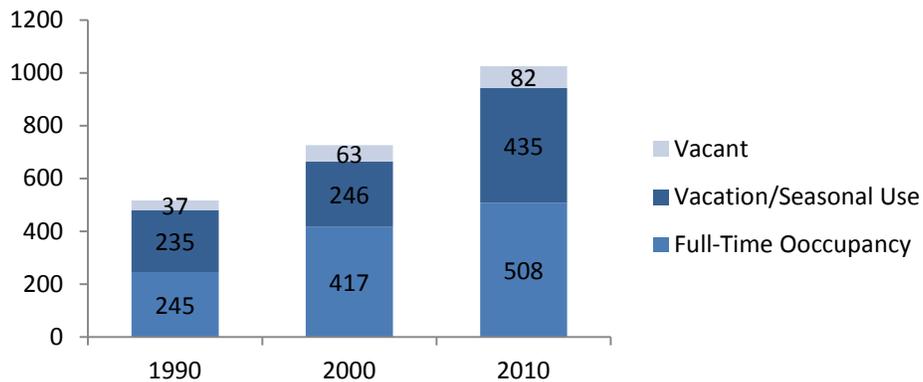


Source: U.S. Census 1990, 2000, 2010  
 Note: CAGR: Compound Annual Growth Rate

During the same period Anderson Island has also seen steady residential development, as shown in Exhibit 6. The greatest share of this new development has been in homes for seasonal and recreational use.

**Exhibit 6**

**Anderson Island Housing Growth, 1990 - 2010**



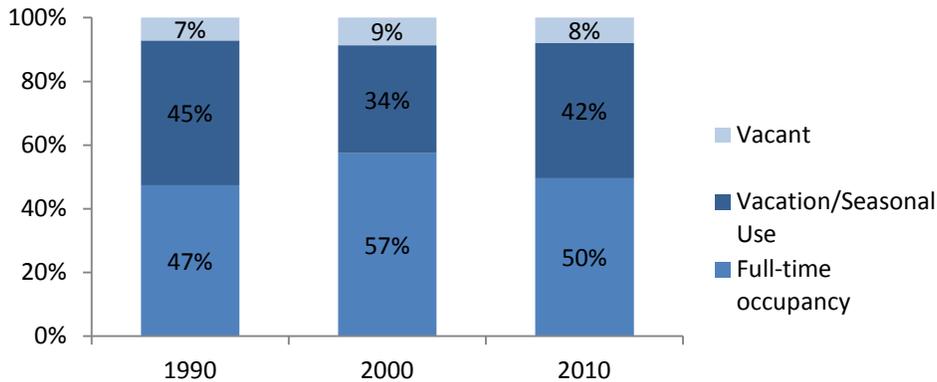
Source: U.S. Census 1990, 2000, 2010

Exhibit 7 shows that the Island’s fulltime occupancy rate has recently fallen from 57% in 2000 to 50% in 2010. The percentage of homes indicated by the Census to be for “seasonal, recreational, or occasional use” has grown from 34% in 2000 to 42% in 2010.

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<sup>1</sup> Note that the 2003 Pierce County Waterborne Transportation Study (IBI Group, 2003) indicates that Anderson Island had a year 2000 population of 900, not 822 as indicated in 2000 Census data.

**Exhibit 7**  
**Housing Occupancy Status as Share of Total Housing Units**



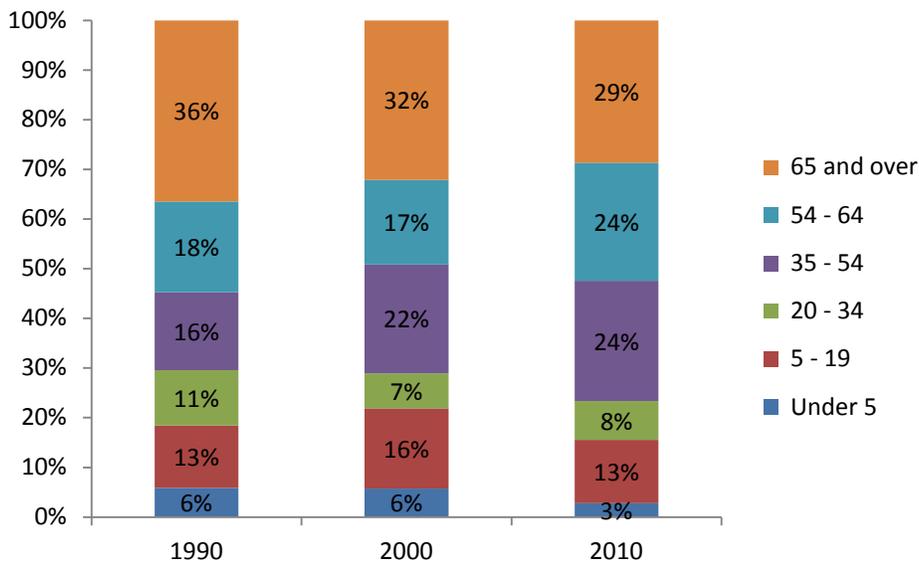
Source: U.S. Census 1990, 2000, 2010

**Age**

Residents of Anderson Island are older, on average, than those in Washington State. The median age of Island residents in 2010 was 56 compared to 37 for the state as a whole. In 2000 the median age on Anderson Island was 52.

Exhibit 8 shows how the age distribution has shifted over the past two decades. The percentage of people under the age of 20 has decreased significantly from 21.7% in 2000 to 15.5% in 2010. The share of adults age 30 – 64 has increased during the same period from 42.5% to 51.4%.

**Exhibit 8**  
**Anderson Island Age Distribution, 1990 - 2010**

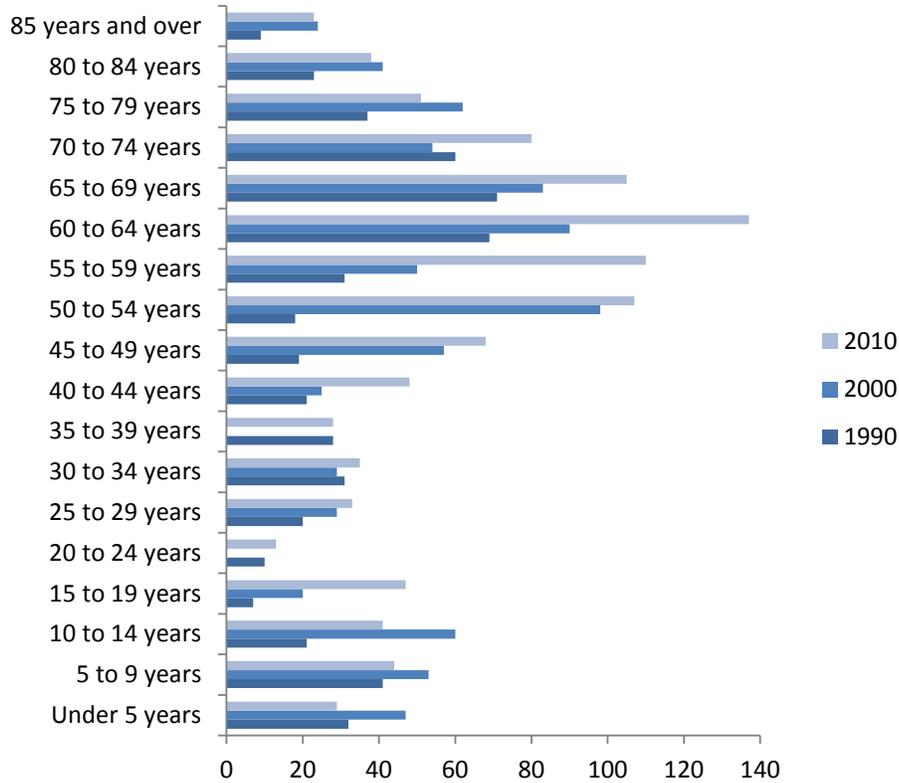


Source: Source: U.S. Census 1990, 2000, 2010

Exhibit 9 shows total population by age group. The greatest increase in population between 2000 and 2010 was among adults between the ages of 55 and 74 years of age, possibly indicating an influx of recent retirees or people who plan to retire in the coming years.

**Exhibit 9**

**Anderson Island Population by Age Group, 1990 - 2010**



Source: U.S. Census 1990, 2000, 2010

The island had 132 school age children in 2010 and 133 in 2000. Anderson Island Elementary is the sole public school on Anderson Island. Total enrollment during 2014-2015 school year is 35. However there have been fluctuations in enrollment, from a high of 41 students during 2004-2005 to a low of 5 students in 2011-2012 (Washington State Superintendent of Public Instruction, 2014). Older students must ride the ferry to attend Pioneer Middle and Steilacoom High schools off-island. No data is available regarding the numbers of students attending school off-island.

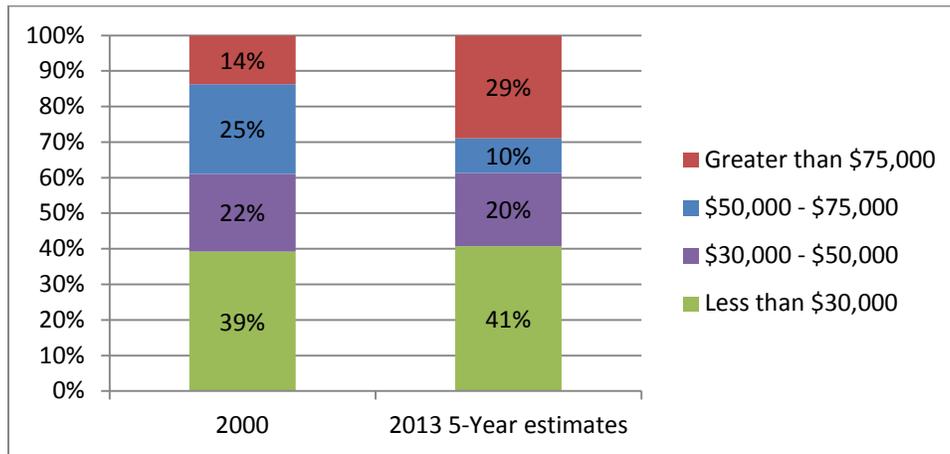
The decline in elementary enrollment and decline in the number of younger children on the island indicates school-related ferry ridership may decline in the coming years.

## Income

Median household income on Anderson Island in 2013 was \$43,333, compared to \$59,204 in Pierce County and \$59,478 in Washington State. The lower income on the island may be due in part to the large number of retirees, whose reported income may not be completely reflective of their true financial capacity, since this measure does not account for household wealth. When adjusting for inflation, median income on the island has declined since 2000 when it was \$49,351 in 2013 dollars. Exhibit 10 shows growth among households in the highest and lowest income groups and a decline in households in the upper-middle (\$50-\$75K) income group.

Exhibit 10

### Share of Total Households by Income Group



Source: Source: U.S. Census Bureau 2000; American Community Survey 2013 5-Year Estimates

Note that income and wealth are two distinct concepts. Lifelong accumulated assets and lack of debt can enable one to live comfortably without a high income. Therefore assessing the relative wealth of Island residents based on income alone can be misleading.

## Employment

30% of Anderson Island residents over the age of 16 are employed compared to 56% of Pierce County residents and 58% of Washington State residents. As shown in Exhibit 11, Anderson Island also has a lower share of total adult population that is unemployed than the county and state and a much higher percentage of residents who are not in the labor force due to retirement or other reasons. This is consistent with the age profile presented above (Exhibit 9) where the largest number of residents was grouped in the 50-70 age range (2010).

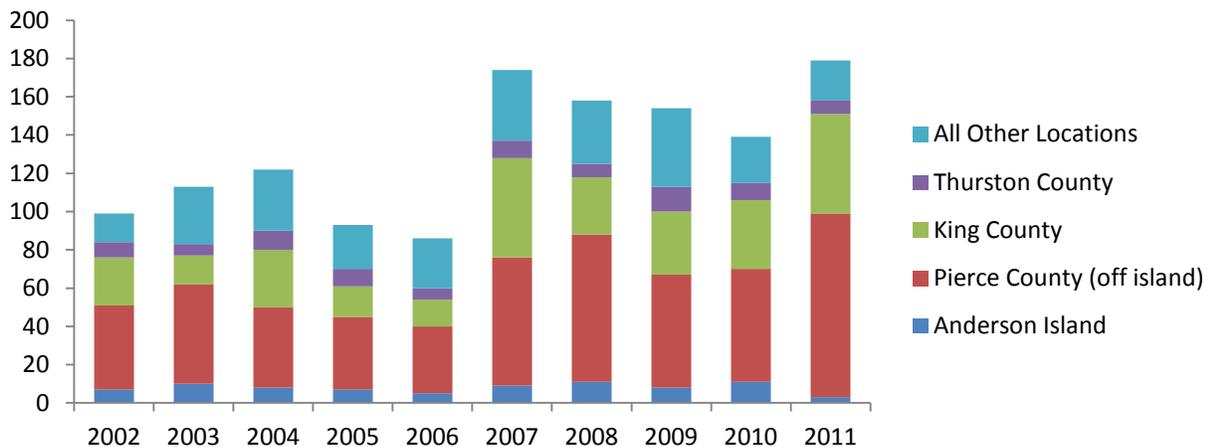
**Exhibit 11**  
**Employment Status: Population 16 Years and Older**



Source: American Community Survey 2013 5-Year Estimates

Exhibit 12 illustrates total employment and primary job locations for Anderson Island residents. During the past decade employment among island residents has grown overall, despite fluctuations from year to year. The vast majority of residents who work do so off island in Pierce or King County and therefore most likely use the ferry for commute travel.

**Exhibit 12**  
**Employed Anderson Island Residents by Work Location<sup>2</sup>**



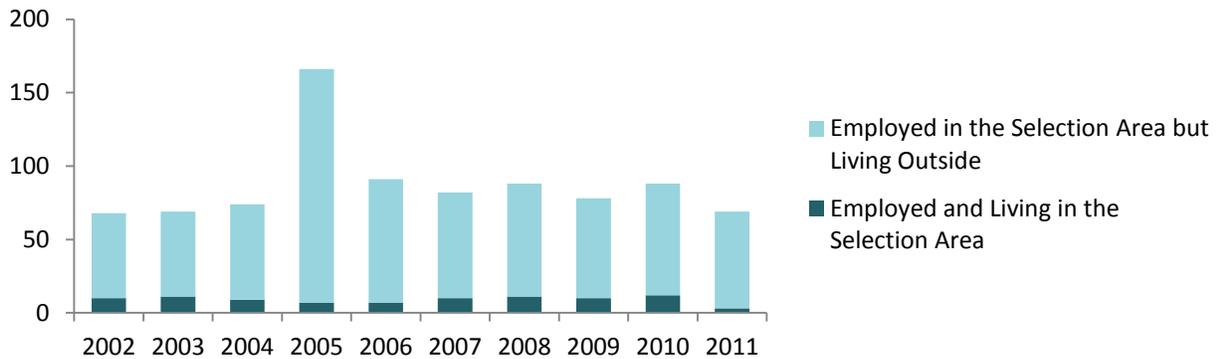
Source: U.S. Census Bureau 2013. LODS Data

<sup>2</sup> The U.S. Census provides employment data by workplace location and employee residence location through the Longitudinal Employer-Household Dynamics program. The majority of data comes from unemployment insurance wage records reported by employers and maintained by Washington State. This dataset is not a perfect representation of employment nor is it perfectly consistent with employment status data as estimated by the American Community Survey. For some workers the actual workplace location can be misrepresented. For instance school teachers are often shown as working at the school district headquarters instead of at the school location. However this data is the best publically available information regarding employment trends on Anderson Island as well as the workplace location of Anderson Island residents. For more information see <http://lehd.ces.census.gov/>

Anderson Island employment (jobs located on the island) was 69 in 2011. With the exception of a spike in 2005, employment on the island has remained fairly constant. As shown in Exhibit 13 the majority of jobs located on the island are held by people who do not live on the island and therefore most likely use the ferry for commute travel. As with the previous discussion regarding total employment status of island residents, the estimates of on-island employment, while relatively stable over time, nonetheless raise some questions about data accuracy. In discussions with the Study Advisory Committee, there was general consensus that these estimates seemed at odds with island residents experience.

**Exhibit 13**

**Anderson Island Employment, by Worker Home Location**



Source: U.S. Census Bureau 2013. LODS Data

**Ketron Island**

The U.S. Census does not tabulate population data for Ketron Island. According to Pierce County data there are 16 single family homes on the island as of 2014.

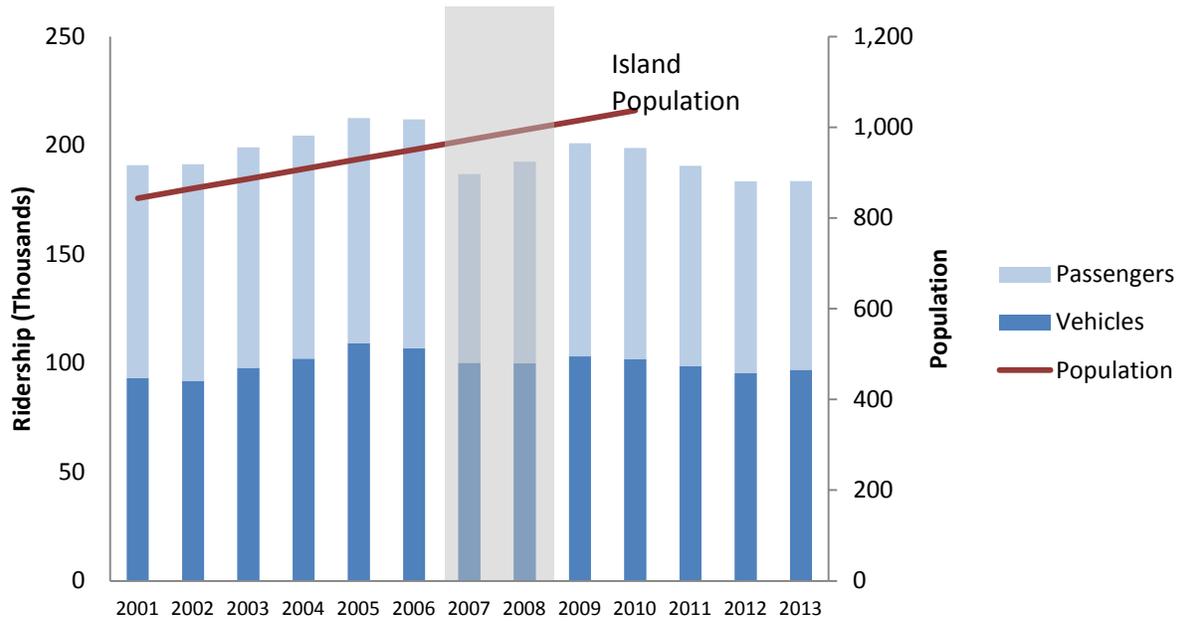
**3.4 Ridership Statistics and Historic Trends**

In 2013 Pierce County Ferries had 183,594 riders.<sup>3</sup> Exhibit 14 shows an overall decline in ridership since a high of 212,541 riders in 2005. This decline occurred during a period of population growth on Anderson Island as well as a time when the island was experiencing growth in the number of employed Anderson Island residents working off island.

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<sup>3</sup> "Riders" are inclusive of vehicle drivers and passengers. Ridership statistics count one vehicle driver per vehicle. All other ferry riders are considered "passengers". Passengers may be walk on or accompanying a vehicle driver. All ridership stats count travel one-way from Steilacoom to the islands.

**Exhibit 14**  
**Ferry Ridership and Anderson Island Population Growth**

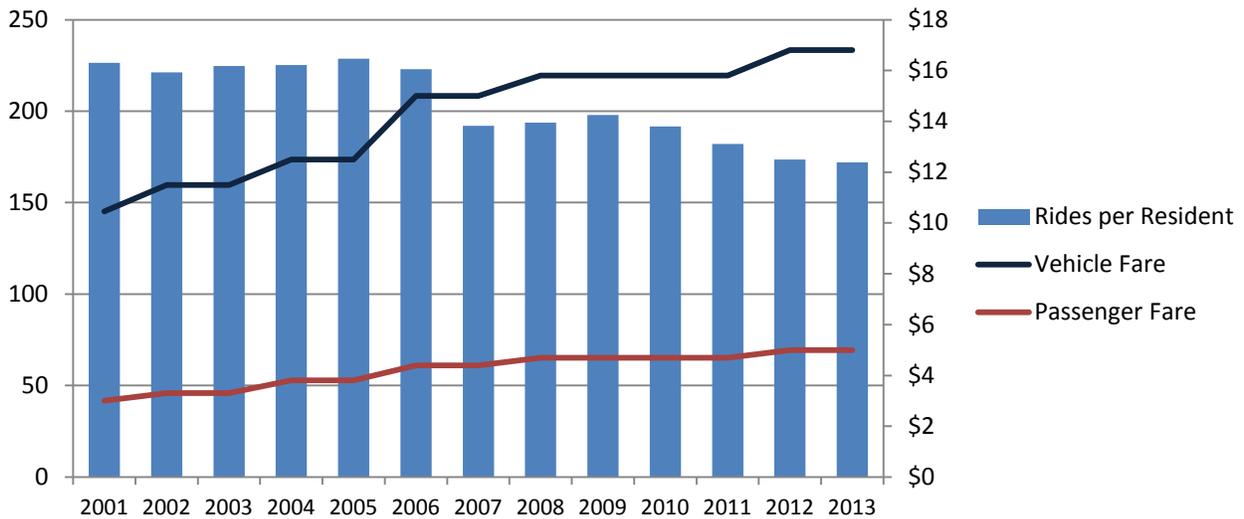


Source: Pierce County, 2014; U.S. Census Bureau 2000, 2010

Note: Ridership in 2007 and 2008 was undercounted due to a malfunction in the scanners. This problem also affects all the following ridership figures.

One possible explanation for the decline in ridership is the response of customers to fare increases. Exhibit 15 shows yearly ridership per Anderson Island full-time resident alongside vehicle and passenger fares. One significant fare increase occurred in January 2006. Counter-intuitively, ridership per resident did not drop. However a drop in ridership per resident can be seen in 2012 after a fare increase. Smaller fare increases in 2004 and 2008 did not appear to affect ridership per resident.

**Exhibit 15**  
**Yearly Ridership per Resident and Fares**

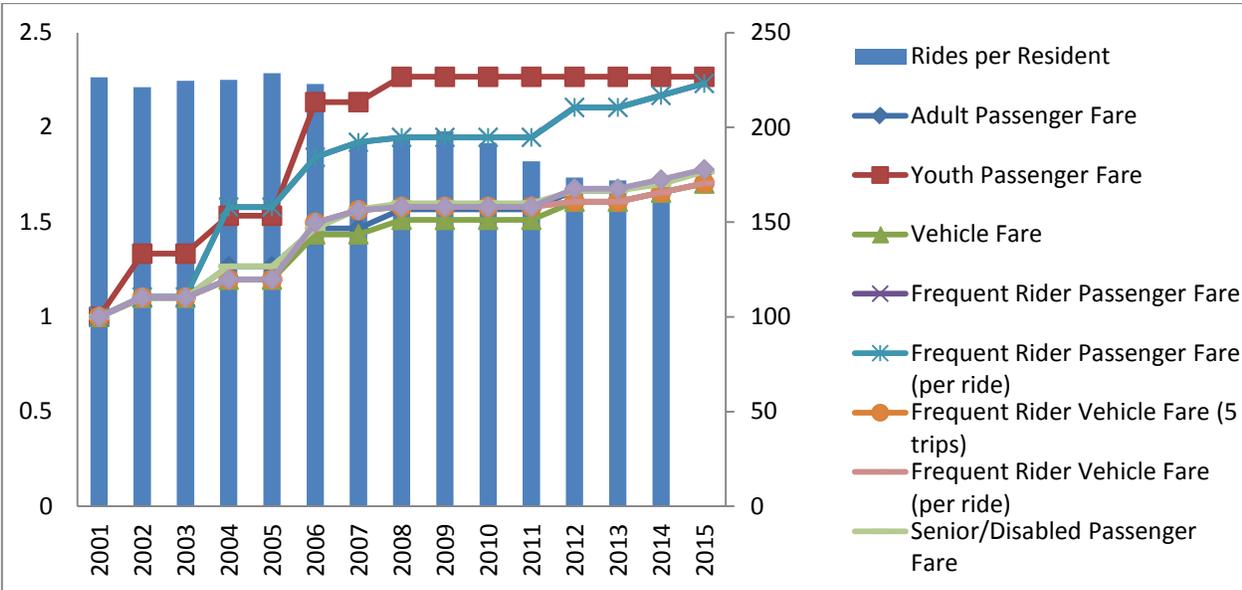


Source: Pierce County, 2014; U.S. Census Bureau 2000, 2010

Exhibit 16 shows a similar pattern with regards to yearly ridership per housing unit.<sup>4</sup> However, this measure is declining at a slightly faster rate than rides per resident, most likely due to the increasing share of homes for vacation or seasonal use. Possible explanations for these trends include island residents replacing of off-island shopping trips with shopping online and an increase in the number of people who occasionally work from home as telework technology improves. Future surveys of island residents could shed light on these or other possible explanations. This chart also breaks down the historic fare changes by the major fare categories, which shows how fare policy changes have resulted in some changes in the structural relationship among fare categories. Each line shows how the individual fare category has changed since 2001, where all fares were normalized to be equal to 1.0. As shown, the youth fare and the frequent user passenger fares have increased the most relative to the fare in place in 2001.

Exhibit 16

Yearly Ridership per Housing Unit and Fares

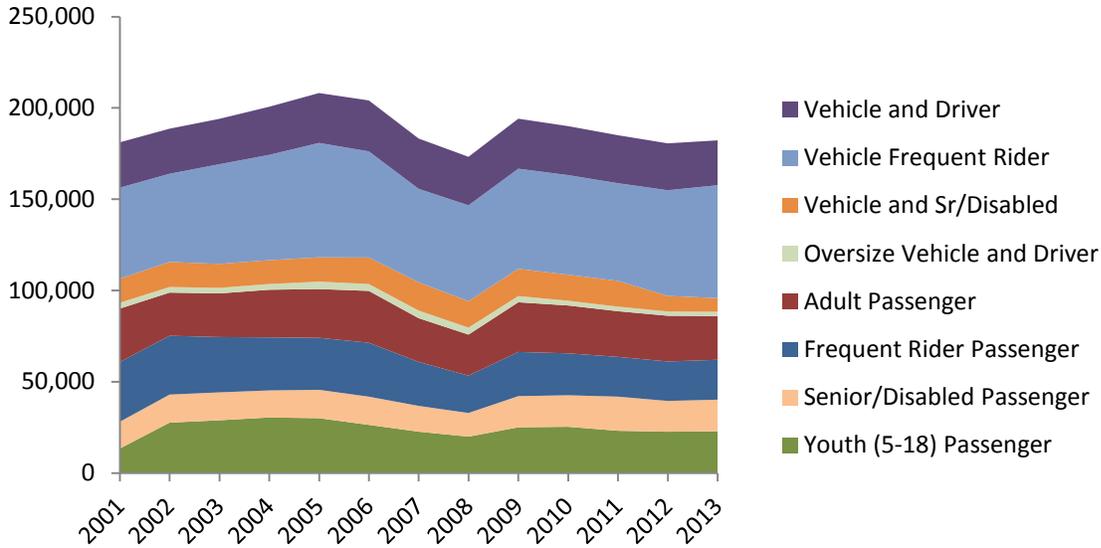


Source: Pierce County, 2014; U.S. Census Bureau 2000, 2010

Exhibit 17 shows total yearly ridership counts broken down by selected customer categories. It indicates the largest declines in the Frequent Rider Passenger and Vehicle and Senior/Disabled Drive categories. The largest gains were in the Vehicle Frequent Rider category. This pattern may reflect a shift of customers from one category to another—particularly Senior/Disabled drivers opting to travel using Frequent Rider passes which became less expensive on a per-trip basis in 2012.

<sup>4</sup> A housing unit is defined as a house, apartment, mobile home or trailer that is intended for occupancy as a place of residence.

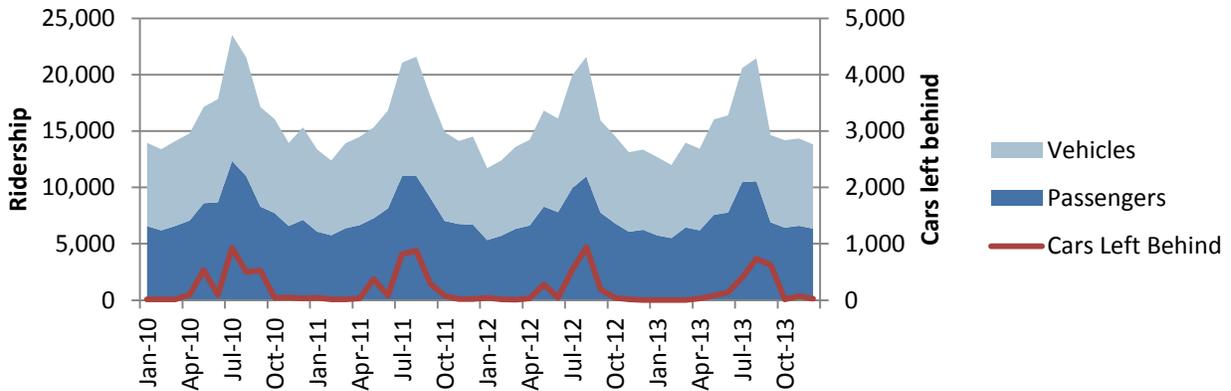
**Exhibit 17**  
**Ridership by Selected Customer Categories<sup>5</sup>**  
**(vehicle drivers and passengers combined)**



Source: Pierce County, 2014

Ferry ridership typically follows a seasonal pattern, with peak demands occurring in the summer months and much lower demand in the winter months. As shown in Exhibit 18, seasonal variation is relatively stable from year to year.

**Exhibit 18**  
**Monthly Ridership and Cars Left Behind, 2010-2013**



Source: Pierce County, 2014

<sup>5</sup> Note that the Frequent Rider Adult category includes people who travel using a “Commuter” multi-rider ticket either as passengers or as vehicle drivers. Users of these tickets may be commuters to employment on or off island. Or they may simply be frequent ferry riders.

## 4.0 FINANCIAL ANALYSIS

### 4.1 Fares

#### Fare Setting Policy and Guidance

##### Current process

Pierce County Public Works and Utilities (PWU) operates the Pierce County Ferry. PWU reviews fares annually and generally recommends fare increases biannually to Pierce County Council. Upon Council passage, fares are recorded in the Pierce County Code [*§10.38.010 Passenger and Vehicle Fares*], which contains the compilation of County ordinances with the force of law.

##### Fare setting guidance

Pierce County Ferry has several sources of guidance for fare setting. With the exception of the federal grant requirements, guidance from these sources is non-compulsory.

- **Federal Grant Requirements.** Pierce County Ferry is a grantee recipient of federal funds, most recently for vessel repair and terminal improvements. These funds are contingent on fare policies that favor seniors, disabled individuals, and Medicare card holders with fares no more than 50 percent of peak hour fare [*US Code Title 49 § 5307 (c)(1)(D)*].
  - Further, under RCW 47.04.140, County ferries applying for federal aid must file fare schedules for approval by State Department of Transportation. Approval is granted unless the Department finds that under the fare schedule, “aggregate revenues to be derived from the county's ferry operations will exceed the amount required to pay the actual and necessary costs of operation, maintenance, administration, and repair of the county's ferries and their appurtenances.”
- **Washington State Ferries (WSF) Policy.** WSF fare policies have historically been a benchmark for Pierce County fare setting. Competitiveness with WSF has at times been cited as a basis for fare setting [*Pierce County Resolution 21820*].
- **The Anderson Island Citizens Advisory Board (AICAB).** The AICAB is authorized in the Pierce County Code [*§ 2.61.020*] to “facilitate a structured two-way communication process between the County and Island residents, property owners and business owners regarding significant issues...[including] ferry service.” AICAB makes ferry fare recommendations in this facilitation role.
- **Pierce County Ferry Committee.** The Pierce County Ferry Committee collaboratively addresses ferry system operations and the suggestions and concerns of Ketron Island and Anderson Island residents. This committee is not an officially chartered Pierce County Board or Commission. Membership consists of the Pierce County Airport and Ferry Administrator, Pierce County staff, a designated representative of HMS Global Maritime (the ferry operator on behalf of Pierce County), an appointed representative from the Anderson Island Citizens' Advisory Board (AICAB), and interested citizens of Ketron and Anderson Islands. The committee meets quarterly to discuss changes and issues concerning the Pierce County Ferry System, including fare recommendations.
- **Waterborne Transportation Studies.** In 1989 and 2003, Pierce County Ferry commissioned a comprehensive examination of the ferry system demographics, finances, fares, and service. These studies have resulted in recommendations for fare setting practices that have been largely followed in years following the studies. The 2015 Waterborne Transportation Study is currently underway.
  - The 1989 study recommended regular fare increases aimed at recovering operating costs.

- The 2003 study recommended adjusting fares every two years with an 80% farebox recovery target and proposed a fare structure that based all pricing off algorithmic relationships with base vehicle and passenger fares. The recommended target and fare structure were not fully adopted.

### **Current Fare Structure**

All Pierce County fares are for round-trips and are collected at the Steilacoom Terminal on the mainland prior to boarding the ferry. Pierce County Ferry has three categories of fares:

1. **Walk-On or Passenger Fares.** Passengers are charged according to age. Fares are in effect year-round.
  - a. **Adults** (ages 19 and over)
  - b. **Youth** (ages 6 through 18)
  - c. **Children** (under age 6)
2. **Vehicle Fares.** Vehicles are charged step-wise according to the length of the vehicle and include the fare for the driver. Vehicle fares vary seasonally (peak, non-peak).
  - a. **Standard vehicle.** A standard vehicle is up to and including 21’.
  - b. **Vehicles over 21’** and up to 90’ are charged according to 10’ increments with a maximum fare for vehicles over 90’. Fares increase with length in a non-linear relationship so larger vehicles are charged more per foot.
  - c. **Motorcycle/Stowage & Driver.** Vehicles licensed as motorcycles. This fare also applies to large carry-on items such as kayaks, canoes, and other items of comparable size which are typically stowed on the vehicle deck of the vessel.
  - d. **3-Wheel Vehicle.** Any motorcycle with a trailer or sidecar or any vehicle licensed as a motorcycle with three or more wheels.
3. **Bicycle Fares.** One bicycle per passenger is allowed at the same fare as the walk-on fare for the rider.

### **Discounts and Exceptions**

The base fares described above might be subject to discounts and exceptions. These include:

- **Senior/Disabled/Medicare Discounts.** As a federal transportation grant recipient, PWU must comply with a number of federal guidelines, including tariff-related policies. Fares charged to seniors, disabled persons, and Medicare card holders must be 50% or less of the base peak passenger fare, as required by the Federal Department of Transportation.
- **Value Pass (5 Trips).** Frequent users may choose to purchase a Value Pass for Passenger, Vehicle & Driver up to and including 21’, and Motorcycle/Stowage fare types. The Value Pass represents a 20% discount off the purchase price of 5 individual fares, is redeemable for 5 round trips of a particular fare type, and must be used within 40 days of purchase.
- **School District Travel.** The Steilacoom School District is authorized one roundtrip vehicle each school day for no cost. This vehicle is limited to a maximum of 21’ in length and its driver for the limited purpose of transporting school lunches, school books, and other school supplies to Anderson Island. Vehicle passengers shall be required to pay full fare.

### **Surcharges**

Surcharges are applied to the base fares discussed above, including:

- **Peak Surcharge.** Because Pierce County has seasonal ridership trends, a peak season surcharge on vehicle fares is used to help manage demand and match peak traffic periods. The surcharge is

approximately 25% of the base fare. Peak season is in effect from May 1 to September 30 of each year, and Non-Peak in effect from October 1 to April 30.

- **Width Surcharge.** Vehicles over 11’ in width are charged twice the fare determined by their length.
- **Vessel Replacement Surcharge.** SSB 6081 authorizes counties to impose a vessel replacement surcharge. This charge must be at least equal to the WSF capital surcharge which is \$0.25 per fare. The revenue must only be used for the construction or purchase of ferry vessels and must be clearly indicated, if possible on the fare media itself. Pierce County does not currently exercise this surcharge.
  - **Note:** Unlike many county ferry systems, Pierce County accounts for capital depreciation in its farebox revenue target [County Road Administration Board, December 2008].
- **Fuel Surcharge.** A fuel surcharge was used most recently in 2007. No surcharge is currently in effect.

Exhibit 19 summarizes Pierce County Ferry’s active fares, discounts, and surcharges.

**Exhibit 19**  
**Summary of Current Fares, Discounts and Surcharges (Effective January 1, 2015)**

	Base Fare	Value Pass Discount (5-trip)	Peak Season Surcharge (May 1-Sept 30)
<b>Passengers</b>			
Adult	\$5.30	-20%	--
Youth	\$3.40	--	--
Children	FREE	--	--
Senior/Disabled/Medicare	\$2.65	--	--
<b>Vehicles (including driver)</b>			
Up to and including 21’	\$17.80	-20% or more (not subject to peak surcharge)	+~25%
Up to and including 21’ – Senior or disabled	\$14.85	--	+~25%
Over 21’ to under 30’	\$36.05	--	+~25%
30’ to under 40’	\$57.40	--	+~25%
40’ to under 50’	\$76.65	--	+~25%
50’ to under 60’	\$95.80	--	+~25%
60’ to under 70’	\$114.95	--	+~25%
70’ to under 80’	\$140.85	--	+~25%
80’ to under 90’	\$166.75	--	+~25%
90’ and greater	\$197.25	--	+~25%
Over 11’ in width	Fare by length x 2	--	+~25%
Motorcycle/Stowage	\$9.60	-20% or more (not subject to peak surcharge)	+~25%
3-Wheel Vehicle	\$11.25	--	+~25%
Steilacoom School District vehicle	Free (1x/day)	--	--
Bicycle	Passenger fare	--	--

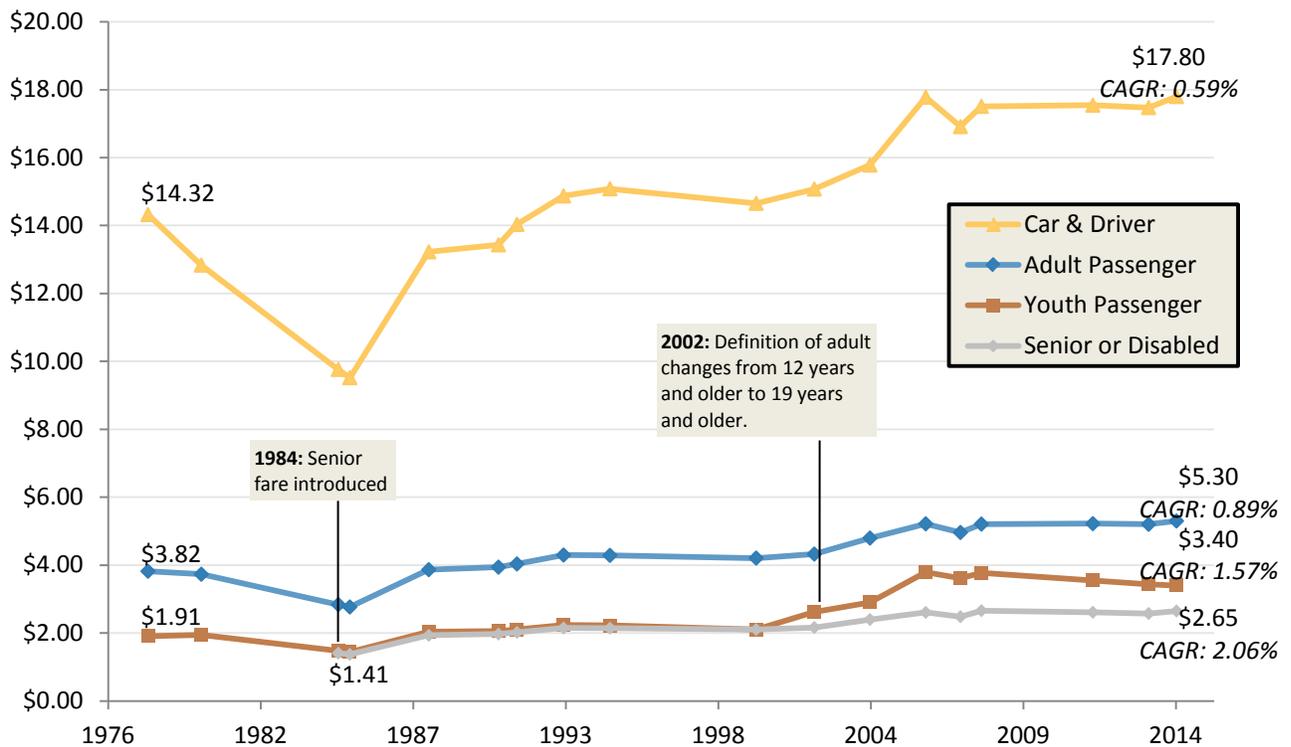
Source: Pierce County Code §10.38.010 Passenger and Vehicle Fares

**Historical Fare Trends**

Exhibit 20 shows historical fares for the Pierce County Ferry from 1978 to 2015, adjusted for inflation and shown in constant 2014 dollars.

- Vehicle fares have increased at an annual average of 4.3% since 1978. After adjustment for inflation, the average annual increase was 0.6%.
- The adult passenger fare has increased by 4.6% annually on average since 1978. The annual increase after adjustment for inflation was 0.9%.
- The senior/disabled fare has consistently been 50% of the adult passenger fare. The youth fare was also 50% of the adult passenger fare until a policy change in 2002 redefined youth as those 18 years old and under, rather than 12 years old and under. Youth fares subsequently rose at a higher rate to account for that difference.

**Exhibit 20**  
**Historic Inflation Adjusted Fares (1978-2015)**



**County Ferry Fare Comparison**

Exhibit 21 displays key operating metrics and fare structure for Pierce County Ferry and two comparable County Ferry systems. Pierce County is the largest system of the three systems with competitive fare structures and similar farebox recovery.

Pierce County’s ridership is much more heavily weighted toward vehicles, with the passenger: vehicle ridership ratio at nearly 1:1. Only the WSF Point Defiance-Talequah route has a lower ratio, perhaps signaling high vehicle dependency in these origins and destinations.

**Exhibit 21**  
**Selected Comparable Ferry Operating Context and Fare Structure**

	Pierce County Ferry	Skagit County Guemes Island Ferry	Whatcom County Lummi Island Ferry	WSF Point Defiance-Talequah (FY 2013)
<b>Operating Context (CY 2013)</b>				
Trip Length	10 min. to Ketron Island 20 min. to Anderson	5 min. to Guemes Island	5 min. to Lummi Island	15 minutes from Point Defiance to Tahlequah
Operating Expenses <i>(Note: Does not include capital costs)</i>	\$3,129,350	\$1,617,612	\$2,520,681	\$8,848,000
Fare Revenue	\$2,000,987	\$985,791	\$1,475,990	\$3,716,000
Passenger Trips	86,617	376,941	171,317	272,474
Vehicle Trips	96,914	197,786	106,594	398,004
Passenger:Vehicle Ridership Ratio	0.9:1	1.9:1	1.6:1	0.68:1
Farebox Recovery (Target)	62% (no statutory target)	61% (65%, County R20100050, amended by R20110382)	59% (55%, per ORD 2010-054)	42.0% (System-wide, 80%)
<b>Passenger Fare (Base, RT)</b>	\$5.30	\$2.50	\$7.00	\$5.20
Multi-ride (cost per trip, discount)	5 trips @ \$21.20 (\$4.24, -20%)	25 trips @ \$53.00 (\$2.12, -15%)	25 trips @ \$115.00 (\$4.60, -34%)	10 trips @ \$42.10 (\$4.21, -20%)
Senior (discount)	\$2.65 (-50%)	\$1.50 (-40%)	No special single trip fare	\$2.60 (-50%)
Youth (discount)	\$3.40 (-36%)	\$1.50 (-40%)	FREE	\$2.60 (-50%)
<b>Vehicle Fare (Base, RT, Non-Peak)</b>	Base <= 21' Non-peak: \$17.80	Base <= 20' Non-peak: \$8.00	Base <8,001 lbs Year-round: \$13.00	Base =14'-22' Non-peak: \$17.70
Multi-ride (cost per trip, discount)	5 trips @ \$71.20 (\$14.24, -20%)	20 trips @ \$136.00 (\$6.80, -15%)	10 trips @ \$102.00 (\$10.20, -22%) 25 trips @ \$235.00 (\$9.40, -28%)	10 trips @ \$142.10 (\$14.21, -20%)

<p>Oversize/Weight Pricing</p>	<ul style="list-style-type: none"> <li>Length measured in 10' increments to 90'</li> <li>Corresponding price increments from \$18.25-\$25.90</li> <li>Implied price per foot: \$1.83-\$2.59</li> <li>Flat rate of \$197.25 above 90'</li> </ul>	<ul style="list-style-type: none"> <li>Length measured in 5' increments to 65'</li> <li>Corresponding price increments from \$5-\$11</li> <li>Implied price per foot: \$1.00 - \$2.20</li> <li>Each 5' increment over 65': \$5.00</li> <li>Overwidth (&gt;8'6"): Double length charge</li> </ul>	<ul style="list-style-type: none"> <li>Weight:             <ul style="list-style-type: none"> <li>to 20,000 lbs (\$32.00)</li> <li>to 36,000 lbs (\$68.00)</li> <li>to 50,000 lbs (\$133.00)</li> </ul> </li> <li>Trailer length:             <ul style="list-style-type: none"> <li>to 16' (\$18.00)</li> <li>to 30' (\$34.00)</li> <li>over 30' (\$63.00)</li> <li>implied price per foot \$1.13-\$1.14</li> </ul> </li> <li>Overwidth (occupying more than one ferry lane) charged additional +50%</li> </ul>	<ul style="list-style-type: none"> <li>CUBE policy - fares based on set ratio relationships with a standard vehicle volume</li> <li>Standard volume: LxWxH = 22' x 8'6" x 7'6"s</li> </ul>
<p>Passenger:Vehicle Base Fare Ratio</p>	<p>0.30:1</p>	<p>0.31:1</p>	<p>0.54:1</p>	<p>0.29:1</p>

## 4.2 Financial Summary

The Pierce County Ferry is part of the County Public Works and Utilities Department and is funded through the County Ferry Services Fund, an enterprise fund dedicated to the operation, maintenance, and capital needs of the system. The fund’s financial goal is to be as self-supporting as possible through a mix of fare revenue, state ferry subsidy, and gas tax revenue.

### Revenues

Exhibit 22 provides an overview of Pierce County’s revenue sources. Revenue can fluctuate widely between years due to grants for capital expenditures which appear as Intergovernmental Revenue.

**Exhibit 22**  
**Pierce County Ferry Revenue Overview (FY2010-15)**

	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Budget	2015 Budget	2010-2013 CAGR	2010-2015 CAGR
Intergovernmental Revenue	\$3,325,238	\$1,978,562	\$1,823,599	\$1,654,472	\$1,751,000	\$4,640,000	-21%	7%
Fare Revenue	\$1,912,872	\$1,897,368	\$1,939,849	\$2,000,987	\$1,991,675	\$2,095,000	2%	2%
County Road Fund Subsidy	—	—	\$198,000	\$497,900	\$1,312,650	\$1,521,000	—	—
Use of Ferry Fund Balance	—	—	—	—	\$195,420	\$1,037,140	—	—
Rents and Leases - DOC, WSF	\$962,146	\$182,007	\$205,726	\$188,245	\$223,500	\$183,190	-42%	-28%
Other Financing Sources	-\$964	—	-\$598	—	—	—	—	—
<b>Total</b>	<b>\$6,199,292</b>	<b>\$4,057,937</b>	<b>\$4,166,576</b>	<b>\$4,341,604</b>	<b>\$5,474,245</b>	<b>\$9,476,330</b>	<b>-11%</b>	<b>9%</b>

Source: Pierce County Budget 2015, 2013

### Intergovernmental Revenue

Intergovernmental revenue comprises about one-third to one-half of Pierce County Ferry’s revenue. The majority of this funding comes from the Federal Transit Administration for operating needs. This federal revenue was contingent on classification as a transit system, which Pierce County was able to achieve in partnership with Pierce Transit (County Road Administration Board, December 2008).

The system also receives state operating subsidies and a portion of the State Motor Vehicle Fuel Tax (MVFT). Capital funds are also available through intergovernmental sources and the Ferry system has accessed the County Road Administration Board funds (County Ferry Capital Improvement Program) for two major projects. One is a \$3.5 million grant paid over 20 years applied toward a Public Works Trust Fund loan for the construction of the M.V. Christine Anderson. Another is a \$7.1 million grant paid to the County over 20 years for the construction of the M.V. Steilacoom.

**Exhibit 23**  
**Pierce County Intergovernmental Revenue (FY2011-13)**

	2011 Actual	2012 Actual	2013 Actual	2011-2013 CAGR
Operations - FTA Section 5307 Funds (Federal)	\$1,106,447	\$884,000	\$882,644	-11%
Operations - Other	\$522,945	\$522,228	\$352,900	-18%
Operations - State Operating Subsidies	\$246,354	\$202,230	\$276,410	6%
Operations - Motor Vehicle Fuel Tax (MVFT) (Stat	\$96,620	\$104,335	\$107,345	5%
Capital - CRAB Capital Grant (State)	\$6,196	\$110,806	\$35,173	138%
Capital - Ferry Boat Discretionary Funds (Federal)	—	—	—	—
Capital - Local	\$0	\$0	\$80,000	—
<b>Total</b>	<b>\$1,978,562</b>	<b>\$1,823,599</b>	<b>\$1,654,472</b>	<b>-9%</b>

Source: WSDOT, 2013 Summary of Public Transportation

### Fare revenue

Revenue derived from fare recovery from 2010-2013 increased at an average annual rate of 2%. While farebox revenue has remained relatively steady, maintenance costs and capital outlays have made the overall financial situation less predictable.

### County road fund subsidy

The Pierce County Ferry, like other county-operated ferries in Washington that transport vehicles, is considered an extension of the county road system. The docks and transfer spans are classified as bridges for capital funding purposes, and other supporting facilities such as parking, holding lanes, and terminal facilities are also eligible for funding as part of the county road system. As such, the County Road Fund, also administered by Public Works and Utilities covers any revenue shortfall from the Ferry Services Fund.

### Rents and leases

The Washington State Department of Corrections (DOC) provides ferry services to McNeil Island. They operate a passenger-only ferry to regularly transport employees and others. They also use a tug and barge to transport vehicles. DOC leases the County's Steilacoom dock for loading and unloading the vehicle barge. This lease allows an inflation adjustment every two years.

From 2008 to 2010, Pierce County leased one of its ferries to Washington State Ferries to use on the Keystone-Port Townsend route while WSF's own vessels were replaced.

### Operating Expenditures

Exhibit 24 displays an overview of Pierce County Ferry's operating expenses.

**Exhibit 24**  
**Pierce County Ferry Expenditure Overview (FY2010-15)**

	2010	2011	2012	2013	2014	2015	2010-2013	2010-2015
	Actual	Actual	Actual	Actual	Budget	Budget	CAGR	CAGR
HMS Contract & Other Services & Charges	\$4,189,788	\$2,112,723	\$3,261,351	\$2,061,825	\$3,732,965	\$3,619,600	-21%	-3%
Fuel and Other Supplies	\$419,318	\$706,941	\$757,225	\$664,583	\$610,170	\$724,610	17%	12%
Salaries & Wages	\$344,420	\$226,250	\$213,549	\$221,188	\$310,870	\$324,050	—	—
Personnel Benefits	\$94,688	\$81,730	\$71,867	\$104,027	\$117,990	\$129,250	—	—
Debt Service <sup>1</sup>	\$32,012	\$28,271	\$24,530	\$21,716	\$398,430	\$400,000	-12%	66%
Intergovernmental Services	\$4,455	\$5,121	\$3,202	\$9,111	\$8,820	\$6,320	27%	7%
Capital Outlays	—	\$44,230	\$910,308	\$86,317	\$295,000	\$4,272,500	—	—
Transfer Out	—	—	\$198,000	\$46,900	—	—	—	—
<b>Total</b>	<b>\$5,084,681</b>	<b>\$3,205,266</b>	<b>\$5,440,032</b>	<b>\$3,215,667</b>	<b>\$5,474,245</b>	<b>\$9,476,330</b>	<b>-14%</b>	<b>13%</b>

1 The Ferry services two loans for the construction of the current ferries. The interest rates are 1% and 0.05% on two Public Works Trust Fund loans payable annually by July 1.  
 Source: Pierce County Budget 2015, 2013

### HMS Contract

Pierce County Ferry contracts with HMS Global Maritime for ferry vessel operations and maintenance and operations of the Steilacoom Dock waiting facility. HMS Global Maritime employs terminal and vessel crew, management staff, and pays terminal and vessel maintenance expenses on a reimbursable basis. The arrangement has served Pierce County Ferries well and has been renewed annually.

**Exhibit 25**  
**Selected HMS Contract Expenditures**

	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Budget	2015 Budget	2010-2013 CAGR	2010-2015 CAGR
Employees & Utilities (Operations)	\$253,141	\$372,746	\$286,100	\$295,775	\$262,430	\$275,000	5%	2%
Christine Anderson	\$842,417	\$726,553	\$587,052	\$310,090	\$604,540	\$594,490	-28%	-7%
Steilacoom II	\$403,850	\$51,904	\$306,583	\$596,500	\$600,000	\$594,490	14%	8%

Source: Pierce County Department of Public Works and Utilities correspondence

### Fuel and Other Supplies

Pierce County Ferries pays for fuel directly. From 2010 to 2013, fuel expenditure grew at an annual average of 17%. The system consumed nearly 175,000 gallons of diesel in 2013 and, as such, is very budget-sensitive to fluctuations in the price of fuel.

### Salaries & Wages and Personnel Benefits

Salaries, wages, and personnel benefits included in the budget are for allocated Pierce County Public Works & Utilities employees involved in the administration of the ferry system. Many of these administrative staff are shared with the Pierce County Airport (Thun Field).

### Debt Service

Debt service is currently being paid on a 20-year, \$7 million loan from the Public Works Trust Fund for the construction of the Steilacoom II. As of December 2014, the remaining principal balance is \$3.7 million at an interest rate of 0.5%.

### Capital Costs

The replacement and improvement of Pierce County's capital assets are a highly variable source of expenditure. Current major assets are listed in Exhibit 26.

**Exhibit 26**  
**Pierce County Ferry Capital Assets (2012)**

<b>VESSELS</b>					
	M/V Christine Anderson		M/V Steilacoom II	Current Book Value	Replacement Value
<b>Current Statistics</b>					
Length (Ft)		213	216		
Beam (Ft)		66	68		
Displacement (Tons)		881	999		
Year Built		1994	2006		
Capacity -- Passengers		250	300		
Capacity -- Cars		54	54		
<b>Current Insured Value - 2012</b>	<b>\$</b>	<b>1,875,000</b>	<b>\$</b>	<b>11,200,000</b>	
<b>Total - Insured Value - 2012</b>				<b>\$</b>	<b>13,075,000</b>
<b>Replacement Statistics</b>					
Year		2044	2056		
Capacity -- Passengers		250	300		
Capacity -- Cars		54	54		
Value - 2013	\$	14,000,000	\$	14,000,000	
<b>Total - Replacement Value - 2013</b>					<b>\$ 28,000,000</b>

<b>FACILITIES</b>					
Location	Year Built	Replacement Year	Current Book Value	Replacement Value	
Steilacoom Landing	1998	2038	\$ 3,286,650	\$ 7,100,000	
Waiting Facility	1986	2026	\$ 257,710	\$ 1,000,000	
<b>Subtotal - Steilacoom Landing</b>			<b>\$ 3,544,360</b>	<b>\$ 8,100,000</b>	
Anderson Island Landing	1983	2023	\$ 2,719,160	\$ 8,140,000	
Waiting Facility	1987	2027	\$ 49,000	\$ 1,030,000	
Park And Ride	2002	2042	\$ 1,035,360	\$ 1,550,000	
<b>Subtotal - Anderson Island Landing</b>			<b>\$ 3,803,520</b>	<b>\$ 10,720,000</b>	
Ketron Island Landing	1998	2038	\$ 2,052,230	\$ 4,370,000	
<b>Subtotal - Ketron Island Landing</b>			<b>\$ 2,052,230</b>	<b>\$ 4,370,000</b>	
<b>Total Facilities Value</b>			<b>\$ 9,400,110</b>	<b>\$ 23,190,000</b>	
<b>Total Vessels &amp; Facilities Value</b>			<b>\$ 22,475,110</b>	<b>\$ 51,190,000</b>	

Source: Pierce County Department of Public Works and Utilities, Six-year TIP and Fourteen-Year Ferry Program

Projected capital expenditures are for preservation of pilings at Steilacoom, replacement of fenders and dolphins at Steilacoom, Anderson, and Ketron islands. Steilacoom terminal also received ferry loading lane improvements.

**Exhibit 27**  
**Pierce County Projected Capital Expenditures (2014-2026)**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Preservation: Non-Vessels</b>													
Steilacoom						\$ 30		\$ 2,000					
Anderson Island	\$ 40	\$ 100						\$ 450					
Ketron Island						\$ 30	\$ 2,000						
<b>Improvements: Non-Vessels</b>													
Steilacoom	\$ 200												
Anderson Island													
Ketron Island													
<b>Total</b>	<b>\$ 240</b>	<b>\$ 100</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 60</b>	<b>\$ 2,450</b>	<b>\$ 2,000</b>	<b>\$ -</b>				

Source: Pierce County Department of Public Works and Utilities, Six-year TIP and Fourteen-Year Ferry Program

## 5.0 BASELINE OUTLOOK

### 5.1 Baseline Ridership projections

A recent Pierce County forecast projects that there will be 404 additional housing units on Anderson Island in 2030, which is a 39% percent growth over 2010 units.<sup>6</sup> Assuming recent trends with regards to the growth in full-time and vacation homes on the Island continue, BERK estimates a 2030 population of 1,239. Future ferry ridership is projected based on these population and housing growth assumptions as well as an analysis of historic ridership trends that accounts for the likely impacts that historic fare increases has had on historic ridership demand. The findings are shown in Exhibit 29.

Both ridership projections make assumptions regarding how potential ferry riders respond to changes in fare prices. There have been no studies of consumer price sensitivity to fares within the Pierce County Ferry system. However a 2008 study for Washington State Ferries looked at consumer sensitivity to fare pricing in different fare classes. Base on a review of this work BERK adopted the following price elasticity<sup>7</sup> coefficients for use in the ridership projection model.

**Exhibit 28**  
**Assumed Price Elasticity in Ridership Projection Models**

	Full Price Fares	Discount Fares	Oversize Vehicle Fares
Elasticity	-0.4	-0.3	-0.3

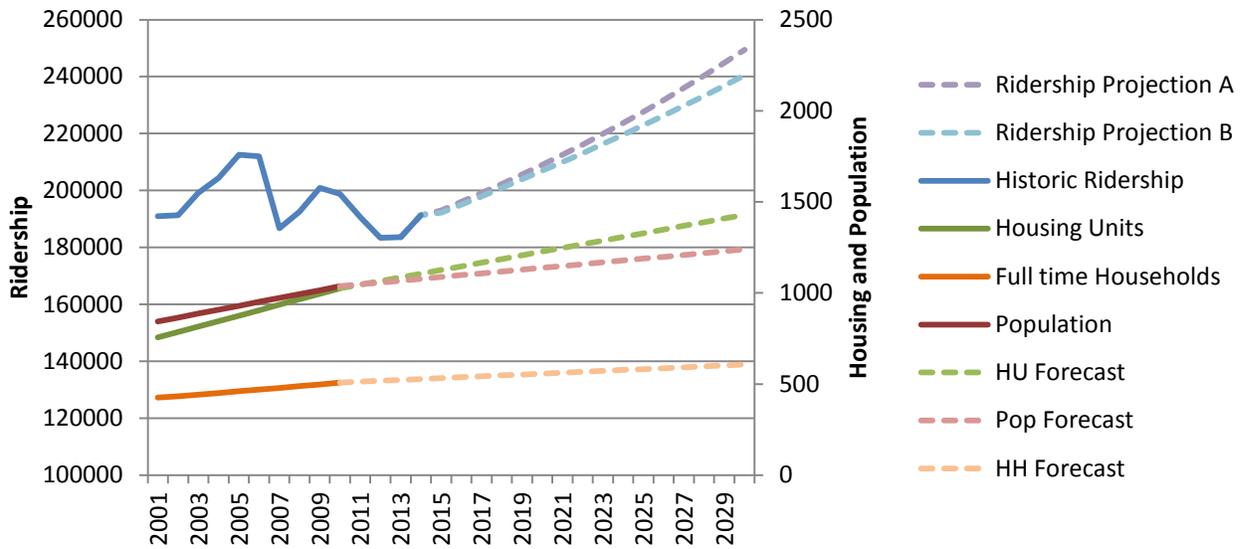
Both of the baseline ridership projection models assume that fare prices do not change between 2015 and 2030 as well a 2.5% rate of inflation. Adjusting for inflation, fares prices would decrease consistently over time resulting in a corresponding increase in ridership demand. Ridership Projection A also assumes that trends with regards the number of rides-per-Island resident continue into the future. Projection B assumes that trends with regards to the number of rides per Island housing unit continue into the future.

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<sup>6</sup> Note: Pierce County is currently reviewing this forecast and it is subject to change.

<sup>7</sup> Price elasticity is a measure of a consumer’s sensitivity to changes in price. It is the percent change in consumption that results in a 1% change in price. In the case of ferry fares, it is the percent change in ridership that results from a 1% change in fares, all else held equal.

**Exhibit 29**  
**Ridership and Housing Projections 2001-2030**  
 (assumes no fare increase)



Source: BERK 2015; Pierce County 2014

These baseline projections assume continuation of current policies regarding service and fare structure. It is important to isolate the ridership potential of the overall market area absent future policy changes with respect to fares and service. In this way, when options are developed and evaluated, it is possible to then account for how changes in these other critical operating variables might influence total ridership. As a result, the best way to interpret this baseline ridership outlook is that these trends reflect the underlying growth in potential demand based solely on the demographic and community growth expectations.

## 5.2 Financial Outlook

The baseline financial outlook on the following page assumes no fare increases (and therefore declining real fares after accounting for inflation). The DOC lease is allowed an inflation adjustment every 2 years and this projection assumes a 4% adjustment.

The projections assume that the county road fund will subsidize major upcoming capital outlays in 2020 and 2021 for the Ketron and Steilacoom landing improvements. They also assume continued substantial subsidy from the Federal Transit Administration. Even with these relatively generous assumptions, the Ferry system is projected to run a deficit, with no fare increase, in coming years.

**Exhibit 30**  
**Pierce County Ferry Baseline Financial Outlook (2014-2026)**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	Budget	Budget	Projected										
Intergovernmental Revenue	\$1,751,000	\$4,640,000	\$2,112,000	\$1,762,000	\$1,765,000	\$1,768,000	\$1,871,000	\$1,874,000	\$1,877,000	\$1,880,000	\$1,883,000	\$1,886,000	\$1,889,000
Fare Revenue	\$1,991,675	\$2,095,000	\$2,132,832	\$2,175,329	\$2,219,161	\$2,264,376	\$2,311,022	\$2,359,152	\$2,408,816	\$2,460,069	\$2,512,967	\$2,567,566	\$2,623,927
County Road Fund Subsidy	\$1,312,650	\$1,521,000	\$518,000	\$673,000	\$712,000	\$843,000	\$3,171,000	\$2,797,000	\$841,000	\$886,000	\$934,000	\$1,019,000	\$1,070,000
Use of Ferry Fund Balance	\$195,420	\$1,037,140	\$88,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rents and Leases - DOC, WSF	\$223,500	\$183,190	\$185,000	\$192,000	\$192,000	\$200,000	\$200,000	\$208,000	\$208,000	\$216,000	\$216,000	\$225,000	\$225,000
Other Financing Sources	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Total</b>	<b>\$5,474,245</b>	<b>\$9,476,330</b>	<b>\$5,035,832</b>	<b>\$4,802,329</b>	<b>\$4,888,161</b>	<b>\$5,075,376</b>	<b>\$7,553,022</b>	<b>\$7,238,152</b>	<b>\$5,334,816</b>	<b>\$5,442,069</b>	<b>\$5,545,967</b>	<b>\$5,697,566</b>	<b>\$5,807,927</b>
<b>Expenditures</b>													
	\$2,014	\$2,015	\$2,016	\$2,017	\$2,018	\$2,019	\$2,020	\$2,021	\$2,022	\$2,023	\$2,024	\$2,025	\$2,026
	Budget	Budget	Projected										
HMS Contract & Other Services & Charges	\$3,732,965	\$3,619,600	\$3,591,000	\$3,697,645	\$3,807,712	\$3,921,294	\$4,038,488	\$4,161,548	\$4,289,578	\$4,421,622	\$4,557,789	\$4,698,189	\$4,842,937
Fuel and Other Supplies	\$610,170	\$724,610	\$776,000	\$795,000	\$815,000	\$835,000	\$856,000	\$877,000	\$899,000	\$921,000	\$944,000	\$967,000	\$991,000
Salaries & Wages	\$310,870	\$324,050	\$363,000	\$372,000	\$381,000	\$391,000	\$401,000	\$411,000	\$421,000	\$432,000	\$443,000	\$454,000	\$465,000
Personnel Benefits	\$117,990	\$129,250	—	—	—	—	—	—	—	—	—	—	—
Debt Service <sup>1</sup>	\$398,430	\$400,000	\$398,000	\$395,000	\$395,000	\$393,000	\$393,000	\$391,000	\$391,000	\$0	\$0	\$0	\$0
Intergovernmental Services	\$8,820	\$6,320	—	—	—	—	—	—	—	—	—	—	—
Capital Outlays	\$295,000	\$4,272,500	\$0	\$0	\$0	\$60,000	\$2,450,000	\$2,000,000	\$0	\$0	\$0	\$0	\$0
Transfer Out	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Total</b>	<b>\$5,474,245</b>	<b>\$9,476,330</b>	<b>\$5,128,000</b>	<b>\$5,259,645</b>	<b>\$5,398,712</b>	<b>\$5,600,294</b>	<b>\$8,138,488</b>	<b>\$7,840,548</b>	<b>\$6,000,578</b>	<b>\$5,774,622</b>	<b>\$5,944,789</b>	<b>\$6,119,189</b>	<b>\$6,298,937</b>
Annual Surplus/Deficit	\$0	\$0	(\$92,168)	(\$457,316)	(\$510,551)	(\$524,918)	(\$585,466)	(\$602,396)	(\$665,762)	(\$332,553)	(\$398,822)	(\$421,623)	(\$491,010)
Cumulative Surplus/Deficit	\$0	\$0	(\$92,168)	(\$549,483)	(\$1,060,034)	(\$1,584,952)	(\$2,170,418)	(\$2,772,815)	(\$3,438,577)	(\$3,771,130)	(\$4,169,952)	(\$4,591,575)	(\$5,082,585)

## 6.0 SCOT ANALYSIS

To plan for the future of the Pierce County Ferry System, an analysis of current conditions and future projections is needed. This document contains a summary of the system’s current strengths and challenges, as well as future opportunities and threats. Exhibit 31 contains a summary “SCOT” analysis of strengths, challenges, opportunities, and threats.

**Exhibit 31**  
**Pierce County Ferry System SCOT**

	Helpful	Harmful
Current	<p><b><u>S</u>trengths</b></p> <ul style="list-style-type: none"> <li>▪ Vessel assets</li> <li>▪ Efficient &amp; flexible operations</li> <li>▪ Dedicated County funds</li> <li>▪ Federal funds</li> </ul>	<p><b><u>C</u>hallenges</b></p> <ul style="list-style-type: none"> <li>▪ Small market</li> <li>▪ Ridership and demographic trends</li> <li>▪ Financial sustainability</li> <li>▪ Ticketing process</li> <li>▪ Landside infrastructure</li> </ul>
Future	<p><b><u>O</u>pportunities</b></p> <ul style="list-style-type: none"> <li>▪ Vessel assets</li> <li>▪ Population growth</li> <li>▪ New ticketing system</li> <li>▪ Alternative governance &amp; financial models</li> </ul>	<p><b><u>T</u>hreats</b></p> <ul style="list-style-type: none"> <li>▪ FTA funding uncertainty</li> <li>▪ County funding uncertainty</li> <li>▪ Community affordability</li> <li>▪ Lack of population growth</li> <li>▪ Demographic trends</li> </ul>

### 6.1 Strengths

#### Vessel assets

Unlike other small ferry systems in Washington State, the Pierce County Ferry system employs two vessels, providing unique advantages for operating and maintenance flexibility. Two vessels allow for regular maintenance to be performed without impacts on service and provide redundancy in the event of mechanical failures. In addition, the County has used two vessel operation during peak summer holiday weekends, effectively doubling capacity and reducing customer wait times and vehicles left behind.

#### Efficient and flexible operations

The Pierce County Ferry System is the only county ferry system in Washington with a contract operator; ferry systems in Skagit and Whatcom counties are operated by Public Works departments. With a contract operator, the County has more flexibility to manage costs and yet can still share resources from the County for specialized needs.

Pierce County Ferry operates at \$584/revenue vessel hour, a relatively cost-effective ratio considering the average for (non-WSF) ferry systems in Washington State is \$628/revenue vessel hour.

### **Dedicated County funds**

Because the Pierce County Ferry System is considered an extension of the county road system, facilities such as docks, transfer spans, parking, and terminal facilities are eligible for funding as part of the county road system. The Pierce County Road Fund covers revenue shortfalls from the Ferry Services fund.

### **Federal funds**

The Pierce County Ferry system has received annual funding from the Federal Transit Administration for operating expenses, ranging from \$1.1 million in 2011 to \$880,000 in 2013. These funds cover over one-quarter of annual operating costs and take pressure off of other revenue sources, such as the county road fund or fares. The King County Ferry is the only other system in Washington State to receive Federal operating funds.

## **6.2 Challenges**

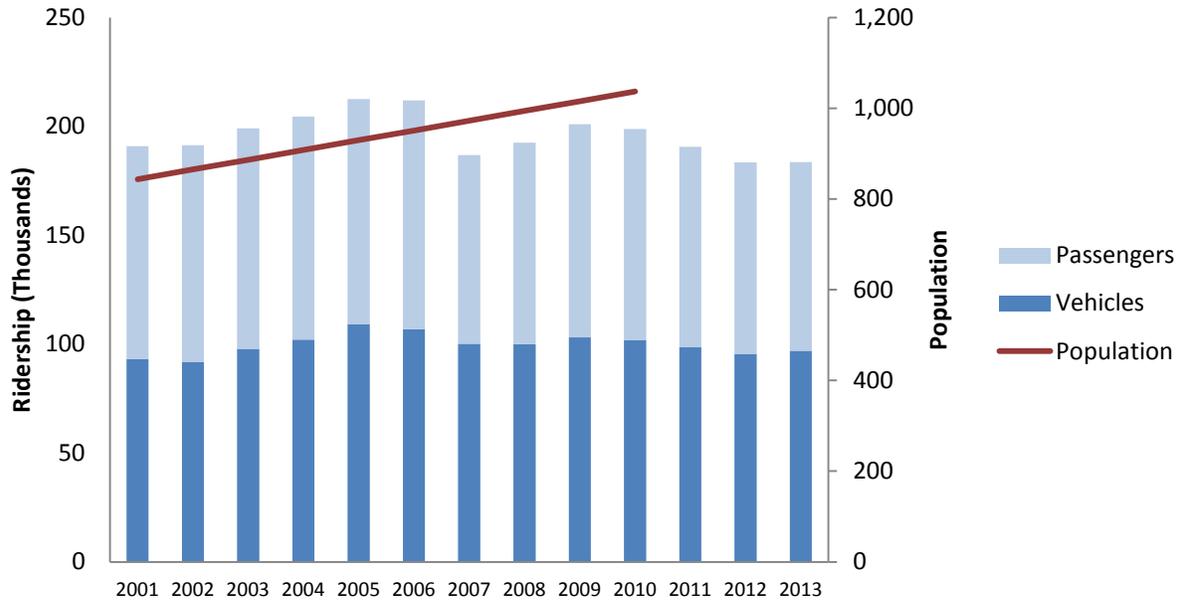
### **Small market**

The Pierce County Ferry System is a low volume route serving two islands with relatively small populations, yet still has the high capital and operating costs of all ferry systems. This makes it difficult to generate sufficient fare revenue to operate the service frequency and span desired by many Island residents. And because the ferry is the only means of transportation to the mainland for most residents, the current service level is not considered sufficient by many residents, particularly for weekday evenings and early mornings. But extending service hours generates additional operational costs which are not covered by fare revenue, thus requiring funding from other sources. Providing convenient ferry service is inherently difficult for a small market.

### **Ridership and demographic trends**

Yearly ferry ridership has declined over the past ten years, from a high of 212,541 riders in 2005 to 183,594 riders in 2013, despite population growth on Anderson Island, as shown in Exhibit 32. Yearly ridership per Anderson Island full-time resident declined from approximately 226 in 2001 to approximately 172 in 2013. Lower ridership results in lower fare revenue and can reduce financial sustainability and the ability to provide a span and frequency of service desired by ferry customers.

**Exhibit 32**  
**Ridership and Population Growth**



Source: Pierce County 2014; U.S. Census Bureau 2000, 2010

Demographic trends on Anderson Island is one factor that may partially account for the decline in ferry ridership.

- **Seasonal/vacation homes:** Between 2000 and 2010, the proportion of vacation/seasonal homes increased (34% to 42%) while the proportion of homes occupied full-time fell (57% to 50%). Homes used for vacation and seasonally may generate less ridership than full-time occupied homes.
- **Low labor force participation:** As of 2013, approximately 65% of Anderson Island residents over the age of 16 were not in the labor force, which may indicate a large proportion of residents who are likely to use the ferry less frequently.
- **Changing population age:** The proportion of the population age 55-64 has increased from 17% in 2000 to 24% in 2010, which also may indicate a larger proportion of residents with lower travel needs.

### Financial sustainability

Funding sources and fare revenue for the ferry system are not assured of keeping pace with capital and maintenance costs. As described below, funds from the Federal Transit Administration are subject to both reauthorization and yearly appropriation and are not an assured revenue source. Further, state support for county ferry systems is capped at \$500k per year, a declining source of funds as costs rise. And as described above, ridership and fare revenue may not keep pace with growth in costs, particularly as demographic changes on Anderson Island could lead to reduced demand for ferry travel.

### Ticketing process

The current ticketing process is inefficient and can be unreliable due to an antiquated system and an operational approach that is seen by customers to be inconvenient.

## **Landside infrastructure**

Holding and parking capacity for vehicles is limited at the Anderson Island and Steilacoom Terminals, which can cause operational conflicts and impacts in neighboring communities.

## **6.3 Opportunities**

### **Vessel assets**

Having two vessels provides opportunities for Pierce County Ferries, such as leasing out the second vessel to generate additional revenue. This was done from 2008 through 2011 when Pierce County leased the M/V Steilacoom II to Washington State Ferries to serve the Port Townsend terminal.

### **Population growth**

Potential population growth on Anderson Island could generate more riders for the ferry system and more fare revenue. The number of full-time occupied homes on Anderson Island increased from 245 in 1990 to 508 in 2010, with vacation/seasonal use homes increasing from 235 in 1990 to 435. A Pierce County forecast projects there will be 404 additional housing units on Anderson Island in 2030, a 39% increase over 2010 units. However, as noted above, if population growth comes primarily from retired or semi-retired persons, ridership and fare revenue may not increase.

### **New ticketing system**

Pierce County is in the process of procuring a new ticketing system for the ferry, which is expected to improve ticketing operations and convenience for customers. A new ticketing system could allow for more options for fare structure and streamlining of operations at terminals, improving system efficiency.

### **Alternative governance and financial models**

New models for governing and funding the Pierce County ferry system could provide additional financial sustainability. Since the last Pierce County Waterborne Transportation Study in 2003, new ferry district legislation has created opportunities for local governance and funding. King County has taken advantage of this approach and now has a dedicated source of ferry funding that significantly reduces the potential demand for funding from the Road Levy.

## **6.4 Threats**

### **FTA funding uncertainty**

Federal Transit Administration funding is subject to reauthorization and yearly appropriations, and therefore not an assured or stable funding source. If these funds were lost, a substantial amount of revenue would need to be made up.

### **County funding uncertainty**

Pierce County Road Levy funds may not be able to accommodate a growing subsidy need. Specifically, the financial projections anticipate large capital outlays in 2020 and 2021 and that the county road fund subsidy will cover these expenses.

### **Community affordability**

After accounting for inflation, the full adult passenger fare has risen at an annual average of 1.3% since 1978, and the full car and driver fare has increased at a rate of 1.2%. The frequent vehicle fares have increased by an annual average of 1.5% since they were introduced in 1988, reflecting both the general fare increase and a decrease in the discount given to frequent riders. The desire to keep fares reasonably affordable to the community could limit the amount of revenue the Ferry can expect to generate through fares.

### **Lack of population growth**

If forecast population growth on Anderson Island doesn't occur, this would likely result in lower ridership growth which would put additional pressure on fares increasing the challenge of maintaining fare affordability while ensuring that fare revenue are recovering an appropriate share of operating costs.

### **Demographic trends**

If the population of Anderson Island continues to trend toward retired and semi-retired persons, ridership is likely to decline, leading to the possibility of higher fares or cuts in service.