

Tillamook County Transportation District:

TRANSIT DEVELOPMENT PLAN

July 2016



Prepared for:
**Tillamook County
Transportation District**

**Oregon Department of
Transportation**

Prepared by:
Kittelson & Associates, Inc.
610 SW Alder Street
Suite 700
Portland, OR 97205

Parsons Brinckerhoff
851 SW Sixth Avenue
Suite 1600
Portland, OR 97204

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ACKNOWLEDGEMENTS

PROJECT MANAGEMENT TEAM

Doug Pilant, Tillamook County Transportation District
Naomi Zwerdling, Oregon Department of Transportation

TRANSIT PLAN ADVISORY COMMITTEE

Jamey Dempster, Oregon Department of Transportation
Ron Rush, Marie Mills Center, Inc.
Pat Ryan, Tillamook Bay Community College
Merriane Hoffman, Pacific City Nestucca Valley Chamber of Commerce
Justin Aufdermauer, Tillamook Area Chamber of Commerce
Paul Wyntergreen, City of Tillamook
Jerry Taylor, City of Manzanita
Bryan Pohl, Tillamook County, Department of Community Development
Bill Johnston, Oregon Department of Transportation
Gary Hanenkrat, TCTD Board of Director

CONSULTANT TEAM

Kittelson & Associates, Inc.

Susan Wright
Paul Ryus
Anais Malinge

--- *with* ---

Parsons Brinckerhoff

Bridget Wieghart
Stefano Viggiano



Study Area Tour with the PMT

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CHAPTER 1 Introduction

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1-INTRODUCTION

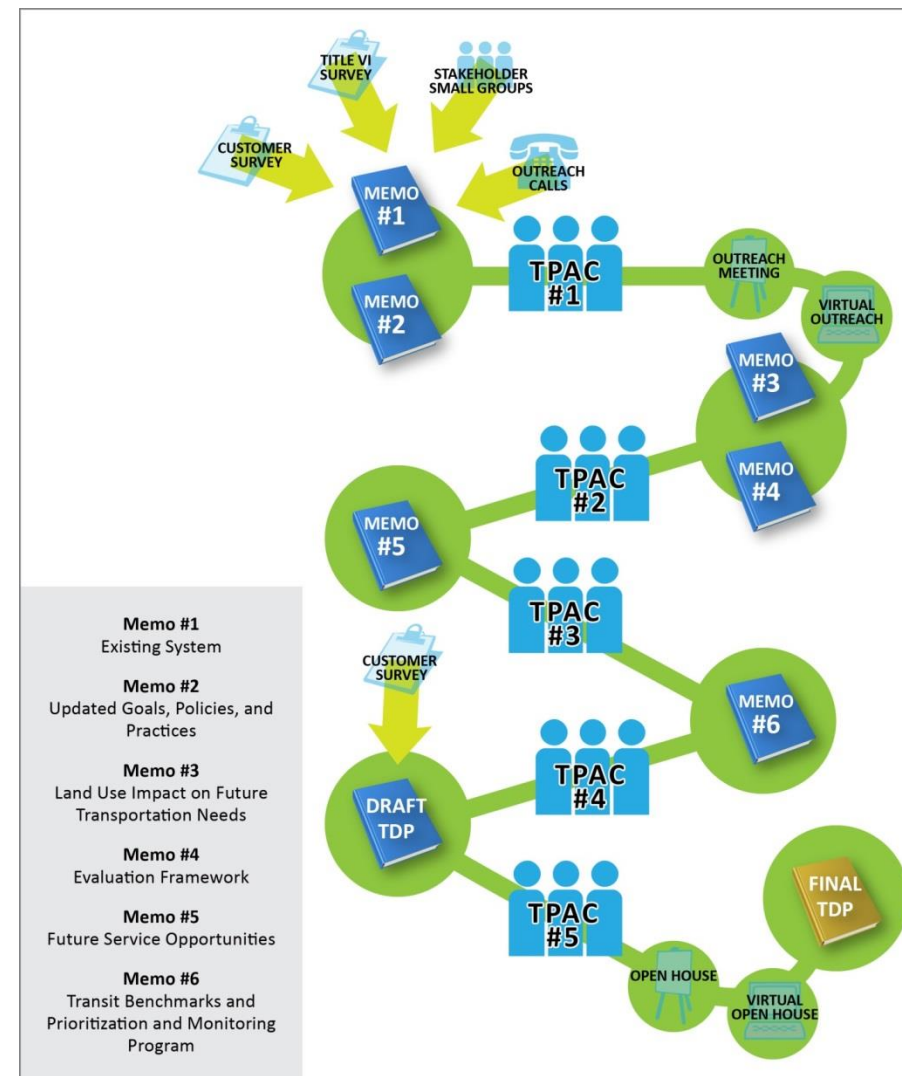
The Tillamook County Board of Commissioners established the Tillamook County Transportation District (TCTD) on July 16, 1997 as an ORS 267.510 transportation District. The services provided by TCTD include deviated fixed route and dial-a-ride services within the transit service area, and intercity bus service to Portland. The transit service area is the west portion of the County along the US 101 corridor, and out to communities along the beach such as Oceanside and Pacific City, from the north end of the county to the south end of the county. Service extends outside of Tillamook County to the north to Cannon Beach to connect with the Sunset Empire Transit District (SETD), to the South to Lincoln City to connect with Lincoln County Transit, and to the east to Portland to connect with TriMet, Greyhound, and Amtrak, and to Spirit Mountain and Salem to connect to Yamhill County Transit Service Area (YCTA) and Salem-Keizer Transit (SKT).

The purpose of the TCTD TDP Update is to develop a program of service improvement alternatives with a series of options to pursue over the 20-year horizon of the plan. The plan will include but is not limited to guidance to implement service modifications and guidance as to when to add bus stops, park-and-ride, or park-and-pool locations within the TCTD service area.

PROJECT PROCESS

The project process resulted in a series of technical memoranda, which set the foundation for the draft TDP. The initial technical memoranda provide the building blocks for the project covering topics such as existing performance measures and existing conditions. The technical documents and analysis progress to evaluating and documenting future conditions as well as developing alternatives to serve project population and employment. The Project Management Team (PMT) guided the preparation of these technical memoranda in coordination with the Transit Plan Advisory Committee (TPAC) and community meetings. These interactions helped guide the development of the Transit Development Plan as well as build the necessary consensus and support. Exhibit 1 shows the project roadway.

Exhibit 1. Project Roadmap



Public Involvement Process

As shown in the Exhibit 1, the project process included several touchpoints with stakeholders and the public to incorporate their input.

Coordination Calls

Seven interviews were conducted with a variety of City and County Managers and Chamber leaders within Tillamook County. These interviews were conducted to seek additional information about population and business growth and transit use within Tillamook County.

ON/OFF Study

TCTD administered an On/Off Study in October 2014 that comprehensively surveyed weekday and weekend boardings and alightings by route, trip, and stop. The Study informed most and least used transit stops and peak loads of each route. The Study was limited to intercity and deviated-fixed route service.

Customer Survey #1

TCTD administered a Customer Survey to better understand the state of the existing intercity and deviated-fixed route systems. The survey was administered during December 2014 and January 2015 by TCTD staff and volunteers. Each route and each run of the day was surveyed during both the weekday and weekend block schedules. A total of 285 surveys were collected, of which 73 were collected for Route 1, 19 for Route 2, 90 for Route 3, 46 for Route 4, 39 for Route 5, and 18 for Route 6. The Customer Survey surveyed transit riders on the following three overarching topics, including rider profile, transit use, and transit origin-destination. These provide insight on the current transit market as well as potential areas for future improvements.

Dial-A-Ride/NW Rides Database

TCTD provided ridership and financial information for the dial-a-ride program, disaggregated between regular dial-a-ride and NW Rides (non-emergency medical DAR service).

Title VI Survey & Stakeholder Small Group Meetings

A Title VI survey which was distributed to social service providers and follow-up small group meetings with social service providers provided insight into transit use, benefits, barriers, communication needs, and service needs.

Outreach Effort

In order to understand existing unmet needs, consultant and TCTD staff participated in three outreach efforts to reach existing and potential riders, including Fred Meyer's, the Transit Center, and a monthly meeting held by the Pacific City-Nestucca Valley Chamber of Commerce.

Driver Survey

Tillamook County Transportation District bus and dial-a-ride drivers were surveyed in order to better understand the state of the existing transit system. The survey was administered by TCTD staff and was placed in each driver's mail inbox to be completed at their individual convenience. Each survey was anonymous, and fourteen completed surveys were received.

Customer Survey #2

TCTD administered a Customer Survey to present the route alternatives developed throughout the project. The survey was administered in March 2016 on intercity and deviated-fixed routes, and yielded approximately 125 responses. The responses to the survey were used to help prioritize improvements to public transit services in the Tillamook County area.

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CHAPTER 2 Study Area Characteristics

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2–STUDY AREA CHARACTERISTICS

The TCTD transit system is a function of the study area in which it operates, ultimately relying on the street system to serve various land uses, populations, and employment areas.

2.1–STREET SYSTEM

There are several highways serving Tillamook County as well as a network of arterial and collector streets. U.S. Highway 101 (US 101), U.S. Highway 26 (US 26), Oregon Route 6 (OR 6), State Highway 22 (OR 22), State Highway 18 (OR 18), and serve the Tillamook County area. US 101 is the main north-south connection between coastal cities. OR 26, OR 6, OR 22, and OR 18 are the four main east-west connections providing access from US 101 within and near Tillamook County to the Willamette Valley, Portland, and other cities along Interstate 5 (I-5). OR 26 is north of Tillamook County in Clatsop County and provides an east-west connection from north of Cannon Beach to Portland. Oregon Route 6 (OR 6) provides an east-west connection from the City of Tillamook to Banks, ultimately connecting with OR 26 and Portland. OR 22 provides an east-west connection from Hebo to Salem. OR 18 is south of Tillamook County in Lincoln County and provides an east-west connection from Lincoln City to Grand Ronde. East of Grand Ronde, OR 18 connects to Highway 99 which provides a connection to Portland and OR 22 which provides a connection to Salem.

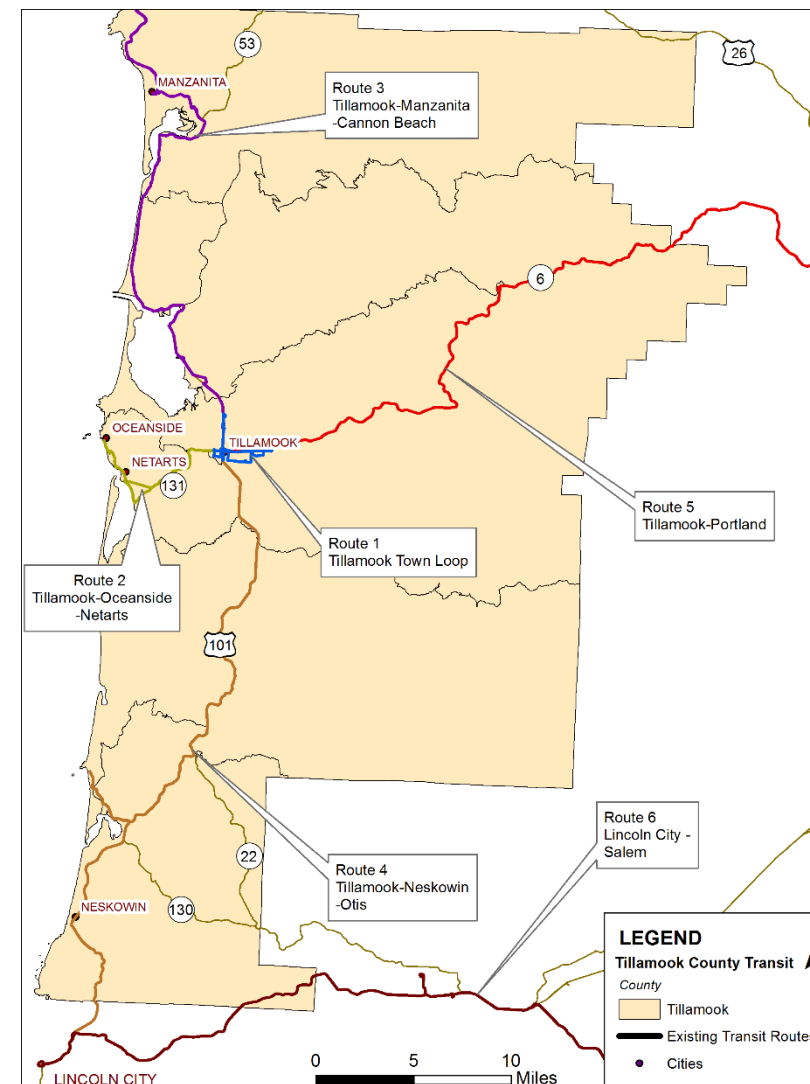
2.2–LAND USE

Existing and future anticipated land use patterns provide geographic context to anticipated growth. Land use and transportation plans, stakeholder input, and County parcel-level

data informed a general understanding of land use trends and local transit needs. Locating growth spatially provides insight on

general and localized transit service gaps, needs, and opportunities at the County and route level.

Exhibit 2. TCTD Service Area



Most cities and unincorporated urban areas within Tillamook County have not experienced significant growth since the 2008

economic recession. Most land use and transportation plans were developed before the 2008 economic recession, in the late 1990s and early 2000s; as such, the growth forecasts and associated visions and goals continue to be relevant as these jurisdictions continue to be within the projected growth margins.

Pursuant to Oregon law, cities within Tillamook County have delineated an Urban Growth Boundary (UGB) around their perimeter in order to focus growth within those boundaries, and control urban expansion onto farm and forest lands. In general, land use plans focus urban development along Highway 101 and anticipate this trend to continue. Residential growth areas are planned within Manzanita, Nehalem, Wheeler, Oceanside, Pacific City and Neskowin. Industrial growth is anticipated at the Port of Tillamook Bay and the Port of Garibaldi. The City of Tillamook and Pacific City have recently experienced growth in commercial and retail uses.

City and County Managers and Chamber leaders within Tillamook County were interviewed to seek additional information about residential growth, job growth, and transit needs. Four themes emerged from these interviews:

- Tourism is the heart of the County economy and drives most of the County's growth.
- The strongest land use demand is residential, much of it for second homes or retirees. Due to land use rules, most of this is expected to be accomplished through infill.
- Job growth is being sought and more year round residential growth is expected to follow.
- Transit service is of interest but remains challenging due to land use and topographic constraints.

2.3–DEMOGRAPHICS AND EMPLOYMENT

Demographics

Tillamook County has a population of 25,200, of which approximately 55 percent (14,000) is within the cities. The City of Tillamook is the most populated city, representing about 20 percent of the total County population. Rockaway Beach, Bay City, and Pacific City are the next most populated cities, representing about five percent of the total County population, respectively. TCTD also provides service to two neighboring cities, namely Lincoln City and Cannon Beach to connect to transit services in adjacent counties. Lincoln City is located south of Tillamook County with a population of approximately 7,900, and is served by TCTD Route 4 (Tillamook-Lincoln City) and TCTD Route 6 (Lincoln City-Salem). Cannon Beach is located north of the County with a population of approximately 1,700, and is served by TCTD Route 3 (Tillamook-Manzanita-Cannon Beach).

The County is divided amongst eight distinct Census designated Tracts. Table 1 summarizes demographic characteristics for each Census Tract. Low income is based on the Census poverty status, which is that the household has been below the poverty level for the last 12 months. Disability status is also a Census variable.

As shown, approximately 40 percent of the total County population is either under 18 years of age or over the age of 65, representing approximately 10,000 people. The 65 and over population in Tillamook County represents a larger proportion of the total population (approximately 21 percent) than the Oregon statewide average of 14 percent. These two population groups are notable with respect to transit markets because they are more likely to be transit dependent.

Approximately one quarter of households earn less than \$20,000 annually. The U.S. Census also defines residents according to the Poverty Status Index, which is based on income and household size. Based on this Census-defined index, approximately 17 percent of Tillamook County residents live below the index and are thus defined as living in poverty. The Oregon state average is 16 percent.

Table 1. Census Tract Demographic Details

Census Tract (Cities)	Population	Elderly (Over 65 years old)	Children and Youth (Under 18 years old)	Low Income	Disabled
Tillamook County	25,200	20%	20%	17%	15%
Tract 1 - Manzanita, Nehalem, Wheeler	3,240	32%*	15%	24%*	12%
Tract 2 – Rockaway, Garibaldi	2,280	29%*	9%	14%	26%*
Tract 3 – Bay City	2,710	17%	19%	11%	15%*
Tract 4 – Tillamook	7,770	13%	25%*	20%*	14%
Tract 5 – West Tillamook/Cape Meares	2,240	15%	32%*	20%*	14%
Tract 6 – Oceanside, Netarts	2,050	30%*	13%	8%	12%
Tract 7 – Hebo, Beaver	2,350	14%	22%*	9%	13%
Tract 8 – Pacific City, Neskowin, Cloverdale	2,560	24%*	18%	20%*	15%*

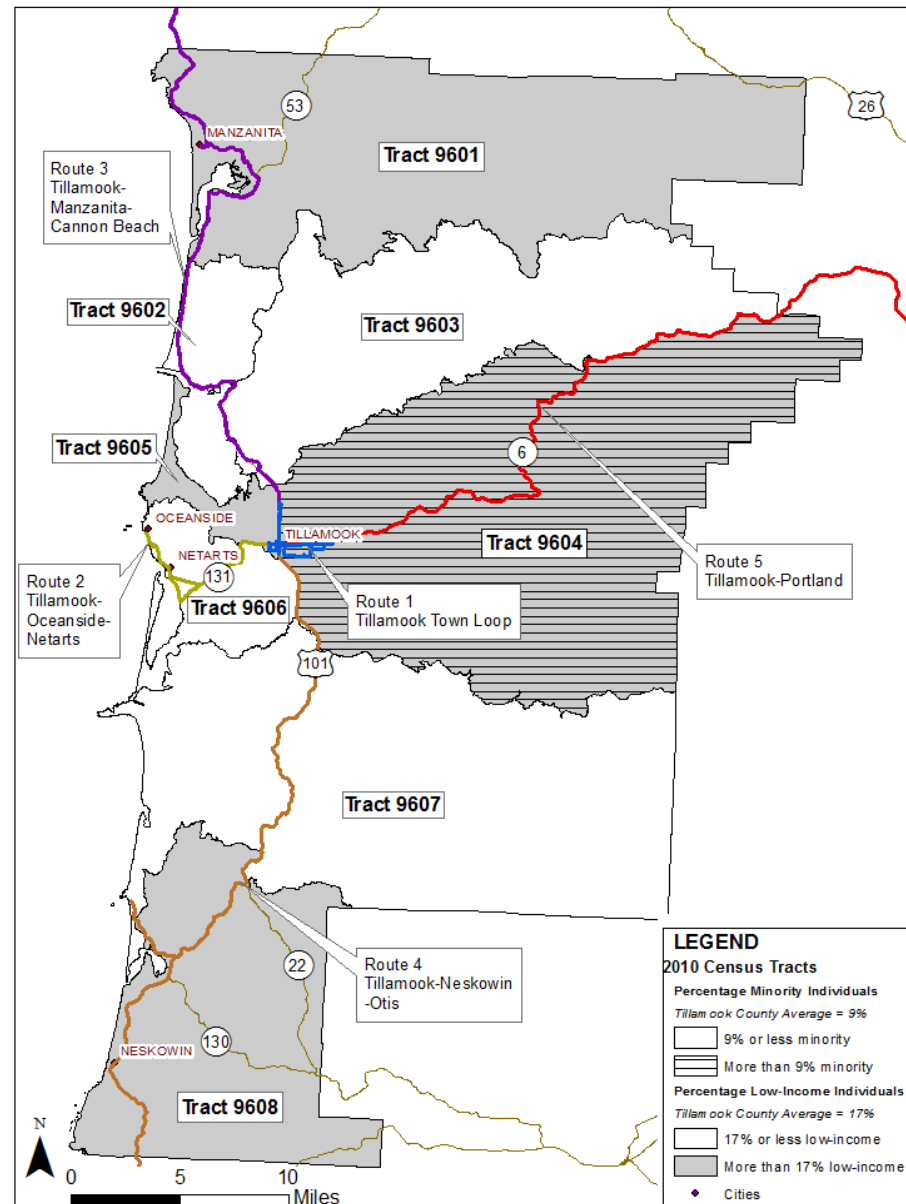
Source: 2009-2013 ACS, *Above county average

Title VI Population

Per Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d-1) and subsequent federal nondiscrimination laws, agencies receiving federal financial aid are prohibited to discriminate based on race, color, national origin, age, economic status, disability, and sex (gender). TCTD receives federal and state funding through the State of Oregon Transportation Growth Management (TGM) Program and the Federal Transit Administration (FTA). As such, TCTD is required to comply with ODOT's Title VI guidance, which require impact evaluation of proposed service and fare changes on minority and limited English proficiency (LEP) riders.

Exhibit 3 illustrates where in the County, by Census Tracts, the proportion of minority and low-income groups is higher than the County average. The Tillamook County average for minority individuals is nine percent and the County average for low-income is 17 percent.

Exhibit 3. Minority and Low-Income in Tillamook County



Sources: 2010 Decennial Census, Table P5; 2008-2012 ACS Estimate, Table B17021; Census Tract Geography.

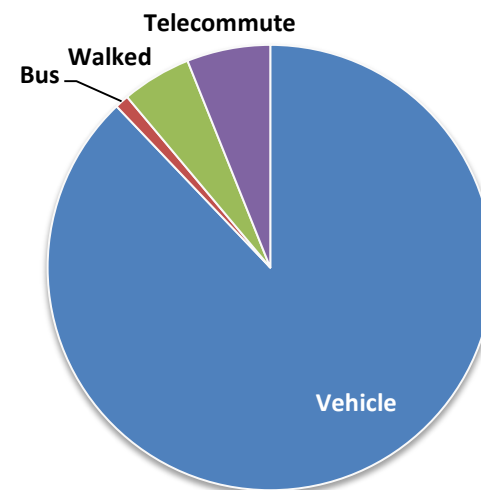
Jobs and Employment

A majority of the large employment sites are within the City of Tillamook or within close proximity. The largest employers are listed below.

- | | |
|------------------------------|---|
| 1. Tillamook Creamery | 8. Pacific Seafood |
| 2. Tillamook County Hospital | 9. Safeway |
| 3. City/County of Tillamook | 10. Pacific City Brewing Company |
| 4. Tillamook Lumber Company | 11. Tillamook People's Utility District |
| 5. Tillamook Country Smoker | 12. Port of Tillamook Bay |
| 6. Fallon Logging | 13. State of Oregon |
| 7. Fred Meyer | 14. Port of Garibaldi |

Means of Transportation to Work

In Tillamook County, vehicles represent the primary mode of travel for work-based trips. Transit represents approximately one percent of the mode split in Tillamook County.



Beyond serving distinct population groups, the transit system should serve employment sites and work-based trips. As such,

the following employment characteristics within Tillamook County should be considered:

- There are 12,100 workers and 8,100 jobs in Tillamook County;
- Approximately 50 percent of Tillamook County residents also work in Tillamook County;
- Beyond those who work within the County, Portland, Salem, and Hillsboro are the most common cities in which Tillamook County residents work;
- Approximately 45 percent of Tillamook County residents commute to work between 6:30 and 8:30 a.m.; and,
- Approximately 34 percent of Tillamook County residents commute 50 miles to work.

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CHAPTER 3 TCTD Overview

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3–TCTD OVERVIEW

3.1–HISTORY AND STRUCTURE

The Tillamook County Board of Commissioners established the Tillamook County Transportation District (TCTD) on July 16, 1997 as an ORS 267.510 transportation district.

The District is overseen by a seven member board of directors who are elected at large. The District's first board of Directors were elected in November 1997 and were sworn in on December 3, 1997. The board is responsible for hiring a general manager and adopting policies and budgets. The District's general manager is responsible for the planning of services and oversees both the transit operations and administration.



The ORS 267 provisions provide TCTD with broad powers such as entering into contracting, intergovernmental agreements, establishing plans as well as the power to enact property taxes, payroll taxes, business fees and to establish fare categories and rates. The District Board attempted to enact of property tax of 20 cents per \$1,000 assessed evaluation in May 1998. The levy failed. However, the Board then formed an ad hoc committee called "Friends of the Wave" who campaigned on behalf of the Board. The November 1998 Levy was passed.

The Board is made up the following seven members:

1. Judy Riley
2. Marty Holm
3. Jack Graves

4. Cara Mico
5. Lon Snider
6. Jim Huffman
7. Gary Hanenkrat

The District is a member of various organizations such as:

- Special District's Association of Oregon (SDAO) provides its members with administrative training and counseling, insurance pool for casualty, vehicle, workers compensation and healthcare, and financing advisory services. SDAO also monitors the Oregon Legislature and lobbies on behalf of special districts.
- Community Transportation Association of America (CTAA) provides rural transit programs with a variety of transit management certificate programs for driver training, administration, vehicle maintenance, etc. In addition, CTAA monitors federal legislation and assists by providing information and lobbying.
- Oregon Transit Association (OTA) provides a forum for Oregon's transit community to work together on common issues, to coordinate the Oregon Transit community's priorities and advance those at the State and Federal levels.
- NW Oregon Area Commission on Transportation (NWACT) membership includes all counties, cities, port districts and transportation districts throughout Columbia, Clatsop, Tillamook and western Washington counties. NWACT is responsible for prioritizing transportation projects being funded through the Federal Highway Administration and ODOT.
- Ride Care Regional Advisory Committee (RRAC) members are the transportation providers who are under contract with the Ride Care NEMT brokerage to provide non-emergency medical transportation. The brokerage staff meets with

members quarterly to discuss client and scheduling issues as well as how federal and state Medicaid changes may impact service delivery.

- NW Oregon Transit Alliance (NWOTA) is an ORS 190 intergovernmental agreement between TCTD, Sunset Transit District, Lincoln County Transit, Columbia County Rider and Benton Rural Services. NWOTA is managed by a Coordinating Committee that consists of each agencies general managers who meet monthly working together to coordinate and market their respective services as a regional transit system.

3.2–SERVICE OVERVIEW

The Tillamook County Transportation District serves the west portion of the County along the US 101 corridor, and communities along the coast including Oceanside and Pacific City, from the north to the south ends of the county. Service extends beyond Tillamook County proper to Cannon Beach in order to connect with the Sunset Empire Transit District (SETD), to Lincoln City in order to connect with Lincoln County Transportation Service District (LCTSD), to Portland in order to connect with TriMet, Greyhound, and Amtrak, and to Spirit Mountain to connect to Yamhill County Transit Area (YCTA) for additional connections in McMinnville, and to Salem-Keizer Transit (SKT) to provide connections to Greyhound and Amtrak.

TCTD operates or supports five service types:

- Deviated Fixed Route – Routes follow a fixed route with a set schedule, but can reroute up to ¼ of a mile off route upon request
- Intercity Route – Daily service between Tillamook and Portland and between Lincoln City and Salem.

- Dial-A-Ride – TCTD operates two types of demand response services, including regular demand response available to all and demand response service for eligible non-emergency medical trips.
- Marie Mills/CARE – TCTD provides funding to support transportation options to the clients served by these two organizations.
- Northwest Oregon Transit Alliance – TCTD is a member agency to the five-agency public partnership that supports and encourages interagency coordination.

Deviated Fixed Route

TCTD operates four deviated fixed routes, including:

Route 1 – Tillamook Town loop. Route 1 is a circulator route covering the city of Tillamook. It provides access to other routes at the Tillamook Transit Center and offers route deviation. The route is served 12 times per day on 1-hour headways from approximately 7 a.m. to 7 p.m.

Route 2 – Tillamook - Oceanside/Netarts. Route 2 is an east-west line haul route to from Tillamook to Netarts and Oceanside. It offers route deviation. The route is served 7 times per day with one to three hour headways from approximately 6 a.m. to 7 p.m.

Route 3 – Tillamook - Manzanita & Cannon Beach. Route 3 is a north-south line haul route to Manzanita and Cannon Beach. It offers route deviation. The route is served 6 times per day with two to four hour headways from approximately 5 a.m. to 8 p.m.

Route 4 – Tillamook - Lincoln City. Route 4 is a north-south line haul route to Lincoln City. It offers route deviation. The route is served 4 times per day with approximately four hour headways from approximately 5 a.m. to 9 p.m.

Intercity Route

TCTD operates two intercity routes, including:

Route 5 – Tillamook – Portland. Route 5 is an east-west express service from Tillamook to Portland. The route is served twice per day approximately five hours apart. Round trip service to Portland is possible by departing Tillamook at 8:10 a.m. and returning at 5:55 p.m., with approximately five hours laytime in Portland.

TCTD and the Portland-based demand response service, Ride Connection, have an agreement for Route 5 to stop at Banks and North Plains. Passengers travel to and from destinations in Portland or between these two cities.

Route 6 – Coastal Connector. Route 6 is the newest addition to the TCTD transit service. It began in March 2014. It is an east-west express service connecting Lincoln City to Spirit Mountain on weekdays (where connections to Salem can be made with Salem-Keizer Transit service and to Salem on weekends). This route is served three times per day on three to five hour headways with service provided from approximately 7:00 a.m. to 6:00 p.m. on weekdays and 8:00 a.m. to 9:00 p.m. on weekends.

Route 6 also connects with Yamhill County Service Area (YCTA) at Spirit Mountain Casino as well as the Grand Ronde Community Center. The YCTA (West Valley Route 22) provides seven round trips to McMinnville on weekdays and four roundtrips on Saturdays. In McMinnville there are additional YCTA services to Hillsboro (MAX), Newburg, Sherwood, Tigard, and West Salem.

TCTD, LCTSD, and the Confederated Tribes of Grand Ronde (CTGR) and Siletz Indians (CTSI) have established a funding and operational partnership in order for TCTD to operate the route through ODOT STF funds and LCTSD and tribe fund match.

Dial-a-Ride

Dial-a-Ride (DAR) is a door-to-door, shared ride transportation service provided by TCTD in the Tillamook County area. TCTD provides two types of dial-a-ride services, as follows:

Regular DAR. Regular DAR is available to all and is divided into three geographies, or zones. The Central County service zone (CDAR) covers Tillamook, Bay City, Netarts, and Oceanside. The North County service zone (NDAR) covers Manzanita, Nehalem, Wheeler, Rockaway, and Garibaldi. The South County service zone (SDAR) covers Pacific City, Beaver, Hebo, Cloverdale, Neskowin, and Tierra del Mar. DAR is available only for intrazonal trips (i.e., no DAR trips will cross delineated DAR zone boundaries). Ride can be scheduled by calling TCTD at least two hours prior to the desired departure time, and up to two weeks in advance. Service is available on a first come first served basis.

NW Rides. TCTD provides Tillamook County residents who qualify for Medicaid with non-emergency medical transportation trips throughout Tillamook County as well as northwest Oregon. TCTD and Ride Care, a non-emergency medical trips (NEMT) broker, have agreed upon a blanket purchase agreement in which they have settled on TCTD providing Tillamook County residents NEMT rides. As a result, TCTD agrees to keep vehicles up to standards, per the Oregon Health Authority, and provide driver training. The NW Rides program is evolving and TCTD is seeking STF Discretionary Grant funding from ODOT to provide bed-ridden Tillamook County residents who are either Medicaid eligible or private-pay clients stretcher transportation services.

Exhibit 4. TCTD Dial-a-Ride Fleet



Marie Mills/CARE

Marie Mills Center, Inc. is a private non-profit agency that serves the developmentally disabled in Tillamook. It has a residential program that currently serves 39 individuals with developmental disabilities. It also operates a vocational program that provides support and training to 69 individuals. It operates a transportation service that travels 90,000 miles and provides 49,000 trips per year in support of these programs.

CARE, Inc. is a private non-profit agency that serves people in crisis and others who struggle to make ends meet. CARE's programs include emergency assistance, homeless services, support for first-time parents, assisted living facilities, and community development projects.

TCTD allocates relatively margin amounts of funding to both of these organizations in support of transportation options for the clients they serve. TCTD donated vans to CARE and provide ten pre-purchased bus passes per month. Similarly, TCTD allocates ODOT STF and 5130 funds for Marie Mills for preventative maintenance of vehicles and to promote the token program.

participates in a 3-day and 7-day fare for visitors that is valid on any of the CONNECTOR transit services. These passes are \$25 and \$30, respectively.

Northwest Oregon Transit Alliance

The Northwest Oregon Transit Alliance (NWOTA) is a public partnership between five transit agencies which implement the North by Northwest CONNECTOR (Connector) system. The Connector is a program that supports and encourages interagency coordination to improve transit connections between communities. The partner agencies include TCTD, Lincoln County Transit, Columbia County Rider, Sunset Empire Transportation District, and Benton County Rural and Special Transportation. The Connector program aims to increase transit use throughout the communities and provide a more interconnected system between agencies. As part of the CONNECTOR, TCTD coordinates schedules with Lincoln County Transit for stops in Lincoln City, with Sunset Empire for stops in Cannon Beach, operates the Coastal Connector route from Lincoln City to Spirit Mountain and Salem (TCTD Route 6), and

3.3–SERVICE CHARACTERISTICS

Ridership and Operations

This section provides data on existing ridership for the TCTD system. Overall, ridership has increased over the last several years for the TCTD system. Ridership for all service types has grown over the last few years, with the exception of the intercity service. Dial-a-ride ridership experienced a 93 percent growth in ridership from the 2011-12 fiscal year to the 2014-15 fiscal year, deviated service a 35 percent growth in fixed route ridership, while intercity service experienced a decline in ridership of 26 percent, as shown in Table 2.

Table 2. Annual Ridership, Fiscal Years 2011-12 to 2014-15

Service Type	2011-12	2012-13	2013-14	2014-15	Growth (2011-12 to 2014-15)
DAR	7,072	9,389	9,794	13,708	94% ¹
Fixed	86,278	97,910	104,069	104,981	22%
Intercity	14,068	13,448	14,632	16,887	20%
Other	340	2,840	3,512	3,318	875% ²
Total	107,758	123,587	132,007	138,894	29%

Source: TCTD MIS Reports, 2012-13, 2014-15.

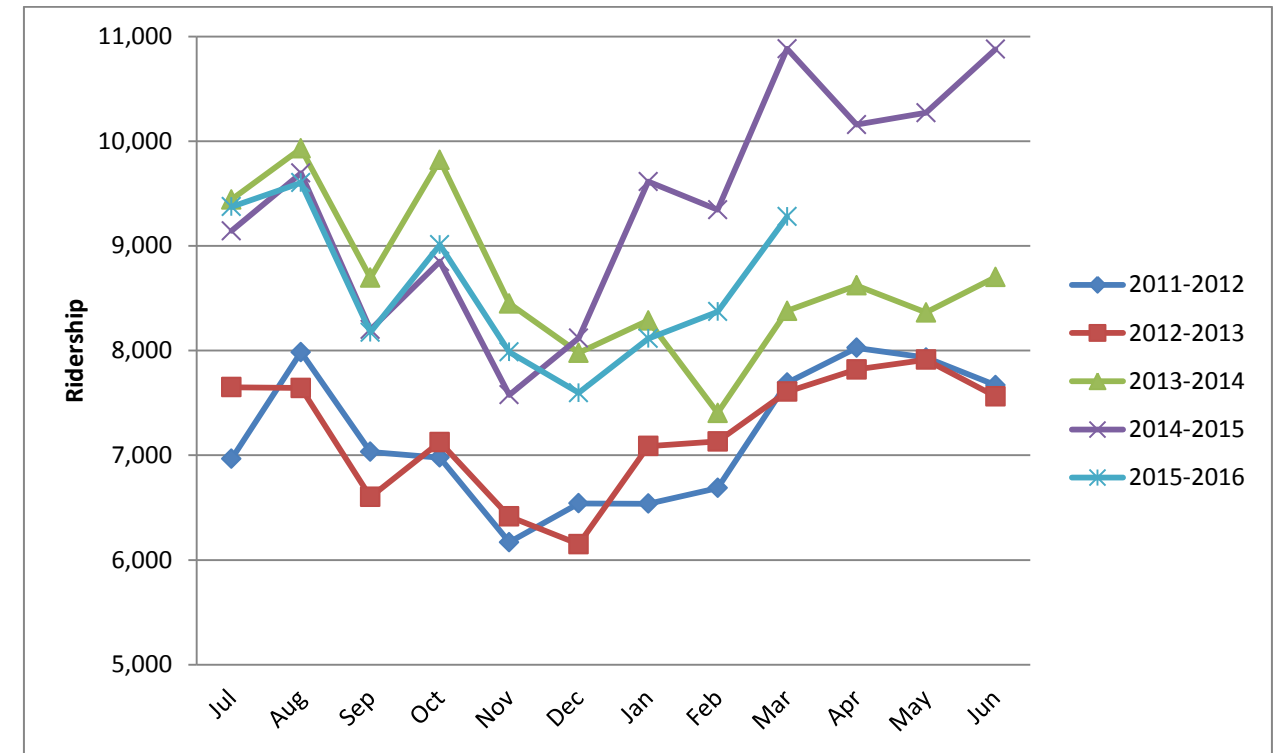
¹ The high growth between FY 2011-12 and FY 2014-15 is in part attributed to NW Rides, which was transferred under TCTD’s purview in May 2012.

² The “Other” services have experienced significant growth between FY 2011-12 and FY 2014-15, attributed to new service to the Adventist Church in August 2012 and Ocean Breeze in August 2013.

Deviated Fixed Route

Exhibit 5 shows the historical ridership pattern for fixed route service during fiscal years 2011-2012 through 2015-2016. As shown, similar seasonal peaks and troughs occur across fiscal years and there has generally been an increase in fixed route ridership.

Exhibit 5. Deviated Fixed Route Historical Ridership



Source: TCTD MIS Reports, 2011-12 through 2014-15.

Table 3 summarizes various operations statistics, including ridership, service miles, and service hours by fixed route. As shown, Route 1 has the highest rides per mile and rides per hour. Route 1 provides service within the City of Tillamook. Route 4 has the lowest rides per mile and rides per hour. Route 4 provides service between City of Tillamook and Lincoln City.

Table 3. Deviated Fixed Route Operations Statistics – FY 2014-15

Route ¹	Ridership	Service Miles	Service Hours	Rides per Mile	Rides per Hour
1	44,729	59,020	4,578	0.76	9.77
2	7,767	52,270	2,003	0.15	3.88
3	39,666	145,503	5,134	0.27	7.73
4	12,819	140,297	4,028	0.09	3.18
Total	104,981	397,090	15,742	0.26	6.67

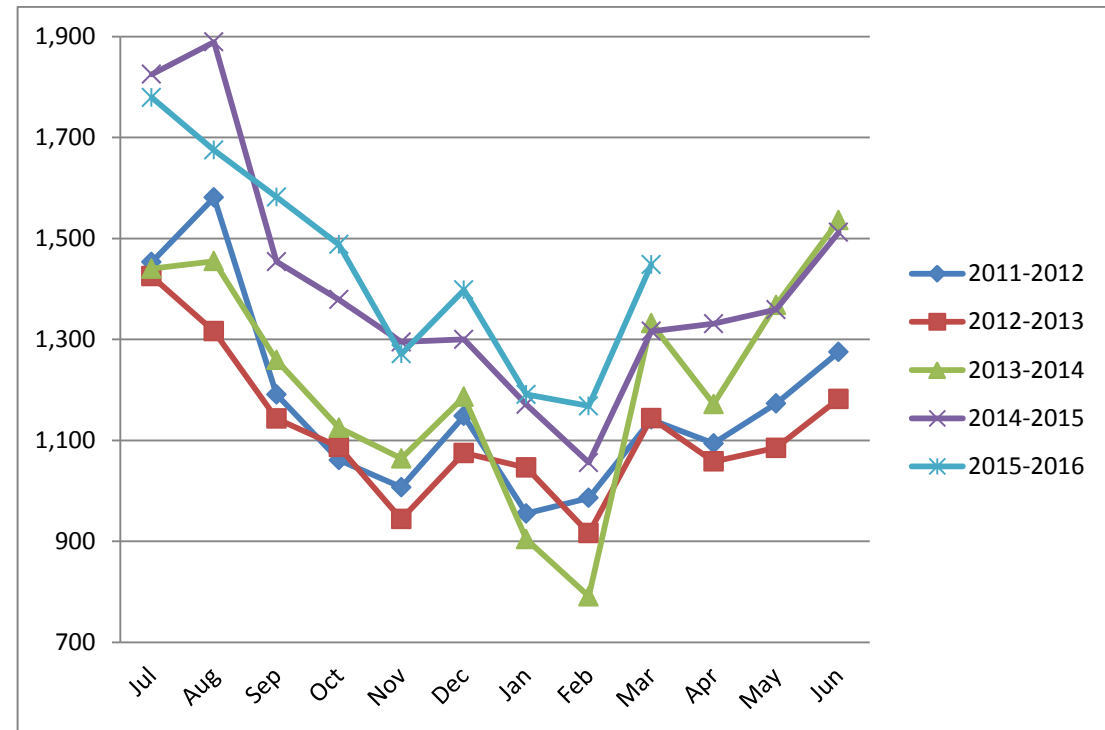
Source: TCTD MIS Reports, 2014-15.

¹ Route 1: Tillamook Town loop; Route 2: Tillamook - Oceanside/Netarts; Route 3: Tillamook - Manzanita & Cannon Beach; Route 4: Tillamook - Lincoln City

Intercity Route

Exhibit 6 shows the historical ridership pattern for intercity route service during fiscal years 2011-2012 through 2015-2016. As shown, similar seasonal peaks and troughs occur across fiscal years and there has generally been a decrease in intercity route ridership.

Exhibit 6. Intercity Route Historical Ridership



Source: TCTD MIS Reports, 2011-12 through 2014-15.

Table 4 summarizes various operations statistics, including ridership, service miles, and service hours by intercity route. As shown, Route 5 has the highest rides per mile and rides per hour. Route 5 provides service to Portland.

Table 4. Intercity Route Operations Statistics – FY 2014-15

Route ¹	Ridership	Service Miles	Service Hours	Rides per Mile	Rides per Hour
5	13,594	112,101	3,483	0.12	3.9
6	1,038	25,821	740	0.04	1.4
Total	14,632	137,922	4,223	0.16	5.30

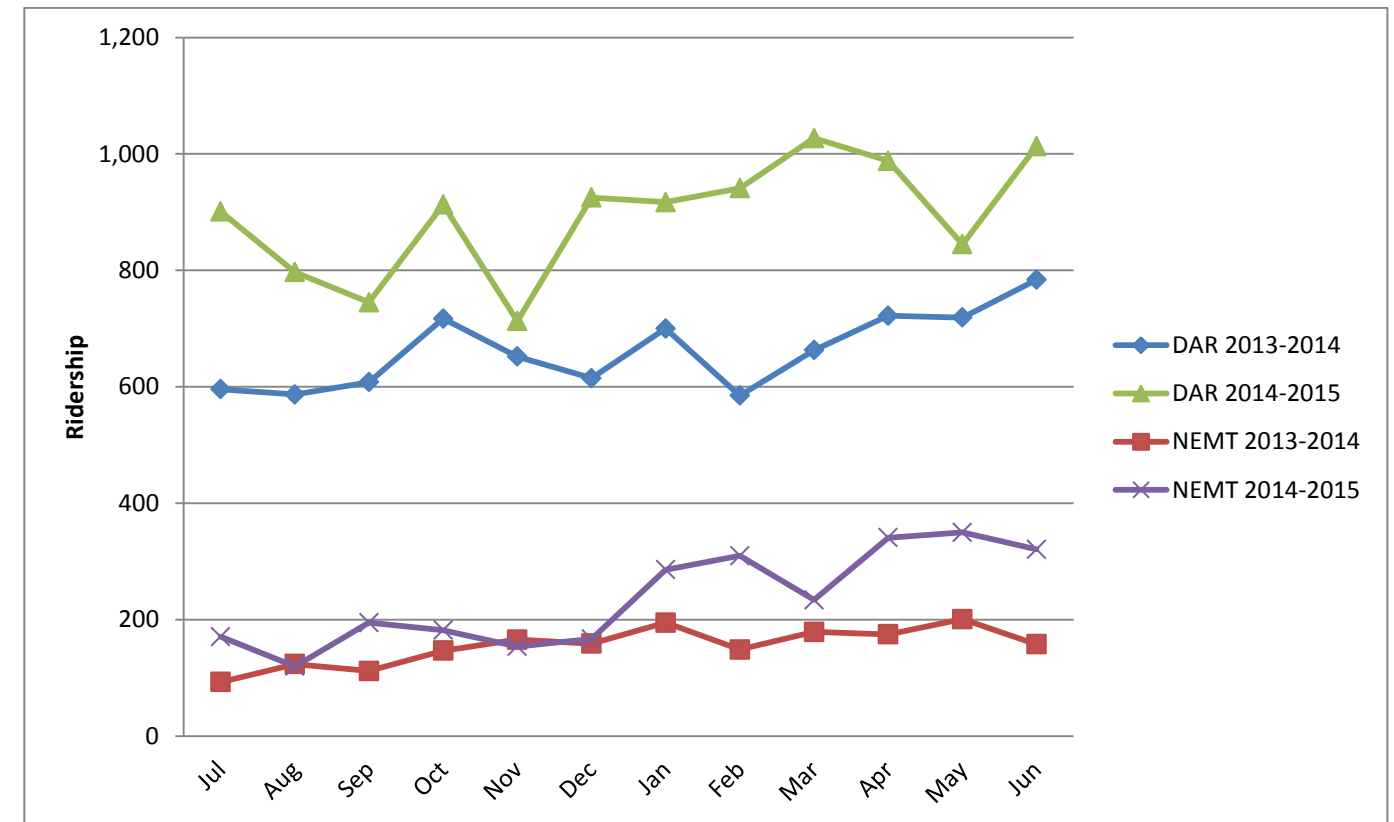
Source: TCTD MIS Reports, 2014-15.

¹ Route 5: Tillamook – Portland; Route 6: Coastal Connector

Dial-a-Ride

TCTD provides demand response services for two types of clientele, the general public and eligible Medicaid/Medicare clients. While the service is similar, the revenue and cost allocation are different. As such, reporting regular DAR and non-emergency medical trips (NEMT) separately is important to ensure accurate financial and ridership reporting. While TCTD has been providing NEMT in the County since 2012, the reporting has only been disaggregated between the services since fiscal year 2013-14, as shown in Exhibit 7.

Exhibit 7. Dial-a-ride/NW Rides Historical Ridership



Source: TCTD MIS Reports, 2013-14 through 2014-15.

Table 5 summarizes various operations statistics, including ridership, service miles, and service hours by DAR service. As shown, NW Rides has the highest rides per hour, while the Central County DAR has the highest rides per mile.

Table 5. DAR Route Operations Statistics – FY 2014-15

Service	Ridership	Service Miles	Service Hours	Rides per Mile	Rides per Hour
CDAR	7,393	49,026	3,358	0.15	2.20
NDAR	2,187	23,240	1,373.0	0.09	1.59
SDAR	1,145	18,515	1,004	0.06	1.14
NW Rides	2,831	113,121	4,092	0.03	0.69
Total	13,556	203,902	9,827	0.33	5.63

Source: TCTD MIS Reports, 2014-15.

Financial Overview

This section provides funding information for TCTD overall, as well as by specific service routes. In addition, it discusses the fare structure TCTD utilizes and revenues by service route.

Cost Allocation

Table 6 shows the annual cost allocations for TCTD by expense type for the last four fiscal years. As shown, total costs have increased between 2011-12 and 2014-15 by over 25 percent. With this increase in costs has come an expansion of services, including:

- Became a non-emergency medical transportation provider for the Ride Care brokerage in May 2012.
- Addition of Route 6, providing service between Lincoln City and Salem;
- Increase in service hours, from 22,704 hours in 2011-12 to 31,654 hours in 2014-15 (39 percent increase); and,
- Increase in service miles, from 534,635 miles in 2011-12 to 796,054 miles in 2014-15 (49 percent increase).

Table 6. Annual Cost Allocations – FY 2011-12 through 2014-15

Fiscal Year	Total Cost	Operations	Maintenance	Volunteer Service	Administration
2011-12	\$1,505,000	49.70%	17.80%	0.70%	31.80%
2012-13	\$1,673,400	55.30%	19.90%	3.60%	22.80%
2013-14	\$1,925,600	49.50%	20.00%	5.40%	27.90%
2014-15	\$2,059,996	53.10%	19.40%	4.20%	25.30%

Source: TCTD MIS Reports, 2011-12 through 2014-15.

The allocation of costs by route for the most recent full fiscal year (2014-15) is provided in Table 7. As shown, Route 3 and the Central County dial-a-ride have the highest total costs. However, Routes 4, 5 and 6 have the highest costs per route service hour. In total, the dial-a-ride services are responsible for 26.6 percent of the TCTD costs, fixed routes 51.8 percent of the total costs, intercity routes 20.7 percent of the total costs, and other services 0.9 percent of the total costs.

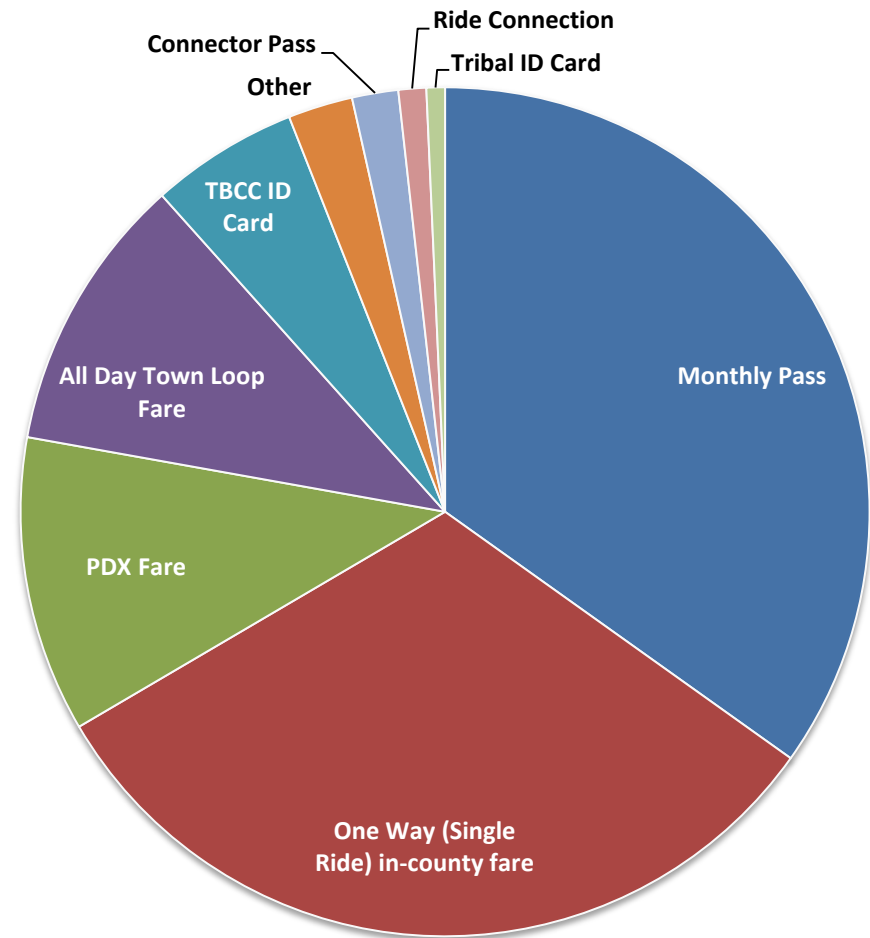
Table 7. Cost Allocation by Route – FY 2014-15

	Hourly Costs	Mileage Costs	Volunteer Costs	Admin Costs	Total Costs	Percent	Cost/ RSH(\$) ¹
DAR - Tillamook	125,181	25,846		51,235	202,261	9.8%	60.23
NW Rides	152,517	59,635		71,972	284,124	13.8%	69.44
DAR - North County			25,826	8,760	34,586	1.7%	25.19
DAR - South County			20,575	6,979	27,554	1.3%	27.44
Route 1: Town Loop	170,623	31,114		68,439	270,175	13.1%	59.02
Route 2: Netarts/Oceanside	74,668	27,556		34,679	136,902	6.6%	68.34
Route 3: Manzanita	191,355	76,706		90,939	359,000	17.4%	69.93
Route 4: Lincoln City	150,141	73,962		76,026	300,129	14.6%	74.51
Route 5: Portland	137,169	59,616		66,759	263,544	12.8%	71.62
Route 6: Salem	80,587	41,506		41,419	163,512	7.9%	75.63
Tripper Routes	9,445	2,639		4,099	16,183	0.8%	63.86
Special Bus Operations	1,256	256		512	2,024	0.1%	60.06
Total	1,092,941	398,836	46,401	521,818	2,059,995	100.0%	64.99

¹ Cost per Route Service Hour

Fare Structure and Revenue

Existing fares for each service type are shown in Table 8. TCTD offers the option for users to purchase unlimited monthly passes, or to buy tickets for individual rides. Based on the Customer Survey #1 results shown below, the monthly pass and the in-county one-way fare types are the most common payment types.



Source: Customer Survey #1

Table 8. Current Fares

In-County Fares	
Zone 1: Hobsonville Point (S. of Garibaldi) to Sand Lake Road (N. of Hemlock) ¹	\$1.50
Zone 2: Clatsop County Line to Hobsonville Point (S. of Garibaldi) ¹	\$1.50
Zone 3: Sand Lake Rd to Lincoln County Line ¹	\$1.50
Zone Cannon Beach: Starts at Clatsop County Line) ¹	\$1.50
Zone Lincoln City: Starts at Lincoln County Line) ¹	\$1.50
Tillamook Town Loop ²	\$1.50
Child (0-4) with adult ³	FREE
Child (5-11) with adult ⁴	1/2 fare
Monthly Bus Pass Regular ⁵	\$40.00
Monthly Bus Pass Senior/Student/Disabled ⁵	\$30.00
Dial-a-Ride ⁶	\$3.00
Dial-a-Ride Discount Fare ⁶	\$1.50
Tillamook/Portland	
One-Way	\$15.00
Round-Trip	\$20.00
Banks/North Plains	
Banks/N. Plains to Portland	\$5.00
Banks to N. Plains	\$2.50
Coastal Connector	
Between Lincoln City and Grand Ronde	\$3.00
Between Grand Ronde and Salem	\$3.00
Weekend (between Lincoln City and Salem)	\$6.00
Child (0-18 years old) ²	½ fare
Seniors/Disabled	½ fare
3-Day Visitor Pass (valid on all CONNECTOR/TCTD transit services)	\$25.00
7-Day Visitor Pass (valid on all CONNECTOR/TCTD transit services)	\$30.00

¹ Fare is per zone/one way

² All day unlimited use

³ First child (0-4) is free, additional children pay ½ fare

⁴ Applies to in-county bus service and Tillamook/Portland bus service

⁵ Unlimited, in-county only

⁶ Per service zone (North County, Central County, South County)

As shown in the Table 9, fare revenue is by far the highest for NW Rides and on Route 5, which provides service to Portland. The farebox ratio, which is a comparison of revenue to cost, and revenue per rider are the highest on South County DAR and NW Rides. Total Cost/Rider represents the average cost of providing the transit service for each rider by service. NW Rides has by far the highest average fare, followed by the Route 6 service.

Table 9. Fare Revenue and Related Statistics – FY 2014-15

Service	Fare Revenue (\$)	Ridership	Total Cost ¹	Farebox Ratio (Revenue/Cost)	Fare Revenue/Rider	Total Cost/Rider
CDAR – Central County ²	45,834	7,393	202,261	22.66%	6.20	27.36
NW Rides ²	231,120	2,831	284,124	81.34%	81.64	100.36
NDAR - North County ²	20,351	2,187	34,586	58.84%	9.31	15.81
SDAR - South County ²	23,282	1,145	27,554	84.49%	20.33	24.06
Route 1: Town Loop	36,921	44,729	270,175	13.67%	0.83	6.04
Route 2: Netarts/Oceanside	9,286	7,767	136,902	6.78%	1.20	17.63
Route 3: Manzanita	58,786	39,666	359,000	16.37%	1.48	9.05
Route 4: Lincoln City	25,530	12,819	300,129	8.51%	1.99	23.41
Route 5: Portland	131,762	12,803	263,544	50.00%	10.29	20.58
Route 6: Salem	8,035	4,084	163,512	4.91%	1.97	40.04
Tripper Routes	3,906	3,027	16,183	24.14%	1.29	5.35
Special Bus Operations	1,366	291	2,024	67.49%	4.69	6.96
Total	596,178	138,742	2,059,995	28.94%	4.30	14.85

¹ Total cost includes labor, mileage, volunteer, and administration costs

² DAR ridership and financial information is summarized by block group. Each block group is designated as CDAR, NDAR, SDAR, or NW Rides; however, the resources (i.e., vehicles and drivers) are shared amongst regular DAR and NW Rides services. As such, a van operating in any of the three regular DAR regions can also service NW Rides trips. Therefore, CDAR, NDAR, and SDAR statistics absorbs some NW Rides statistics.

Transit Capital Assets

Fleet

TCTD owns and operates 23 vehicles, as summarized in Table 10.

Table 10. Current Fleet Inventory

Vehicle Type ¹	Fuel	Seats	Useful Life	Count
B: Medium-Size, Heavy-Duty Transit Bus	Diesel	28-33	10yr/350,000 mile	9
C: Medium-Size, Medium Duty Bus & Van Chassis Cutaway Bus	Gas	14-18	7yr/250,000 mil	1
D: Medium-Size, Light-Duty Bus & Van Chassis Cutaway Bus	Diesel	14-18	5yr/150,000 mile	4
E1: Small, Light-duty Bus	Gas	9	4yr/100,000 mile	2
E3: Modified Minivans	Gas	5-6	4yr/100,000 mile	7

¹ Vehicle type classified by ODOT

Based on the useful life of the fleet and the date of purchase, approximately 18 vehicles will need to be replaced by 2020 which equates to a total cost of \$2,240,000 of which and anticipated 75 percent will be funded through Section 5339 and the remainder through local match.

Transit Stops

There are a total of 78 inventoried transit stops, of which approximately 27 percent have shelters with schedule boards, five percent have solar panels, and 68 percent have a schedule board.



3.4–UNMET NEEDS

Existing Transit Market

The following are key characteristics of the existing TCTD transit market:

- Overall, the existing TCTD transit service is focused primarily on the City of Tillamook. Since Tillamook is the largest city in the county by far and contains most of the major employers and services, this is the logical transit hub for the region. Existing transit riders are primarily traveling to and from the City of Tillamook.
- The TCTD On-Off Study shows that there are few trips to unincorporated areas of Tillamook County. Most trips begin and end in cities. Many routes have riders that use the entire length of the transit line, from the furthest stop to Tillamook, or the reverse. Bay City and Pacific City are underrepresented in terms of transit ridership compared to their population and there may be an opportunity to gain further market share of riders going to or from these and other coastal cities.
- Based on the Customer Survey conducted as a part of this study, the majority of existing riders in Tillamook County have no vehicle and are from low-income households. Over 60 percent of users do not have a vehicle available. Approximately 55 percent are from a household making less than \$15,000 per year. They tend to be transit dependent and report that they would not make many trips if transit was not available to them.
- Most transit riders are full- and part-time workers and retirees. Students represent a significant portion of the market on weekdays but not on weekends. Weekend busses attract relatively more high income users. Weekend transit riders also make more discretionary trips.
- There are more workers than jobs in the County. Therefore, there are many people who live and work in separate cities or even separate counties. There is a significant share of workers who commute a very long distance to get to and from work, with 34 percent of workers travelling over 50 miles one-way. There are a large number of workers who commute to the Portland Metro area (about 1,500 workers).
- There is a significant market of workers who are not using transit to get to and from work. There is an opportunity to increase ridership for work trips, but it is important that riders are able to get to work on time and have a ride home when they end their work shift.
- Approximately 45 percent of workers leave for work between 6:30 and 8:30 AM, and the most common departure window is between 7:30 and 8:00 AM (14 percent). Additionally, 16 percent of workers leave between 5-6:30AM, and 13 percent leave between 8:30-10AM. Most TCTD transit routes offer 1 or 2 trips within the morning peak commute time (6:30-8:30AM). There are also many workers who depart for work earlier or later in the morning that may not be able to use transit because there are few or no options for them.
- Working with employers to better understand their needs and shift times presents a market opportunity for TCTD. The addition of more peak service for some routes could potentially make transit a viable option for work trips. In addition, local employers may be able to adjust work shifts slightly so that employees may be better able to utilize transit.
- The NW Connector Study identified that there are many visitors to the Tillamook County area, but they may not be aware of the transit system. Having a website that is easy to use for trip planning and having good bus stop signage are important.
- The vast majority of riders are beginning or ending their trip at their home. This means neighborhoods are important pickup locations for the system. In particular, dense housing developments are key locations for potentially increasing transit ridership.
- The most common trip purposes are to get to work, shop, or get to social or recreational destinations. This suggests that improving connections to commercial establishments may increase ridership.
- Many riders are homemakers, retired, or students. They likely have different travel patterns than work commuters and would make more use of midday service. Long wait times between bus trips in the middle of the day could make it challenging for them to use transit.
- Since seniors represent a higher than average proportion of the county population and riders, TCTD should consider addressing the needs expressed by stakeholder small groups including more benches and shelters at stops and increased Dial-a-Ride service to South County.
- Outreach to Title VI populations demonstrated a need for improved communications, including more up-to-date electronic information, broader distribution of print materials and Spanish transitions.
- Title VI stakeholders also indicated that more information on how to ride the bus and Ride Ambassadors would reduce the fear that is a barrier to first time passengers, elderly and non-English speaking populations.
- Based on the current users of the system, 15 minutes could be considered the maximum walk time for most potential riders. Ideally, stops should be located within ¼ mile of common origin or destination locations.
- Dial-A-Ride service makes up about 10 percent of daily transit ridership in Tillamook County and primarily serves as a connection from home to medical centers and other everyday needs. Given the topographical challenges and

dispersed land uses in the County, and the high proportion of elderly customers, TCTD should consider cost effective ways to continue and enhance these options.

- Given that Title VI populations represent a high proportion of transit ridership in Tillamook County, TCTD should give consideration to adding or increasing service to locations important to these communities, such as the Tillamook PO and YMCA and VA clinics.

Existing Unmet Needs

Transit demand is anticipated to grow with population and employment. Most of the population growth in Tillamook County is expected to be from people over 65 years old, which is a key transit market. Overall transit demand is expected to increase by at least 20% between 2010 and 2040. The growth rate for transit demand to major urban centers is expected to be even higher.

Route specific suggestions include:

- Route 1: Provide earlier morning and later evening service and make sure the service is reliably on time to allow riders to connect to other routes. In addition, the Port of Tillamook Bay is not currently served by fixed-route service; therefore, TCTD transports riders to the Justice Center using dial-a-ride service.
- Route 2: Increase frequency between the 2:25 p.m. and 5:25 p.m.
- Route 3: Increase mid-day service and extend evening hours. Few riders are destined for Astoria although there are services there that can't be accessed within Tillamook County. TCTD should consider whether this connection can be improved substituting fixed for flag stops in Rockaway and increasing time between arrival and departure in Astoria.
- Route 4: Add service to Woods, earlier service to Tillamook and shelters in Hebo, Cloverdale and Beaver.

- Route 5: Continue to support the popular connections in Portland but consider how to improve connections to Beaverton and Hillsboro which have low ridership numbers, but are important employment destinations for county residents.
- Route 6: Continue to support key linkages of Lincoln City, Salem and Grande Ronde and consider extending service hours.

Regular route deviations focus on a few destinations in Nehalem and Tillamook which are very close to existing routes 3 and 4. TCTD should consider whether to incorporate some of these to the regular route, which might increase ridership and improve on-time performance for connections.

Title VI outreach revealed a number of suggestions that could enhance service to populations who rely on TCTD including:

- Purchase low-floor, level-boarding buses with a storage area for shopping bags and luggage.
- Add more signage, fare information, how to ride directions, and benches at bus stops.
- Increase service frequency to heavily-trafficked areas on north-south routes
- Add more stops in Tillamook, Nehalem and Manzanita.
- Add new service to Mohler/Highway 53 and Neah Kanie.

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CHAPTER 4 Anticipated Growth and Transit Demand

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4-ANTICIPATED GROWTH AND TRANSIT DEMAND

Population and employment forecasts suggest that employment is expected to grow at a faster rate than population. Between 2010 and 2020, population in Tillamook County is forecast to increase by 1,500 people, or an increase of six percent. In parallel, between 2012 and 2022, employment in the Northwest Oregon region is forecast to increase by over 4,000 jobs, or a 12 percent increase. These population and employment growth patterns suggest that Tillamook County residents will have access to more job opportunities, thereby presenting TCTD the following opportunities:

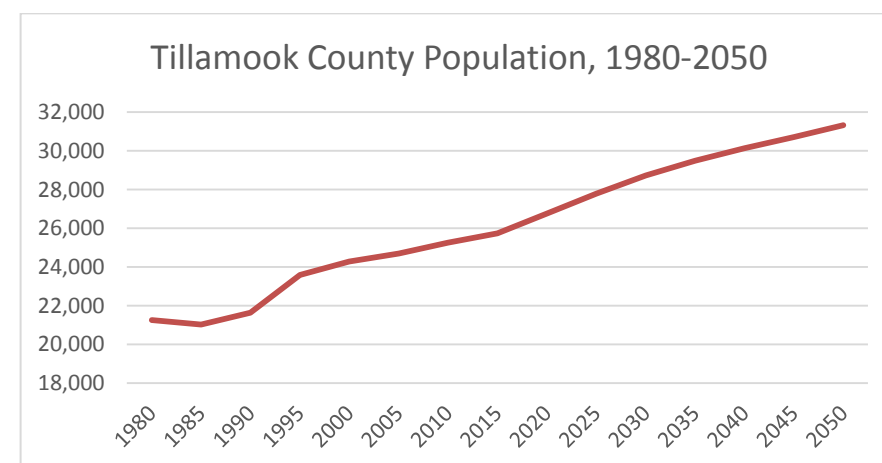
- Increased ridership for work-based trips
- Increased coordination needs with neighboring transit agencies
- Improved service to cities or unincorporated urban communities in Tillamook County

The following section summarized the anticipated population and employment growth, and associated transit demand which will inform the service, management, and capital alternatives in Chapters 6 and 7.

4.1-POPULATION GROWTH PATTERNS

Between 1980 and 2010, Tillamook County has experienced an average annual population growth rate of 0.6 percent. Based on population forecasts from the Oregon Office of Economic Analysis, on average this trend is expected to continue through 2050. Exhibit 8 shows the historical and forecast population growth in Tillamook County. As shown, by 2050, the population forecast in Tillamook County is expected to be between 30,000 and 32,000 people; however, over the next ten years, the projected growth is approximately 2,000 people.

Exhibit 8. Tillamook County Population Forecast



Source: Office of Economic Analysis, *Forecasts of Oregon's County Populations and Components of Change, 2010 – 2050*.

Between 2000 and 2010, population growth in Tillamook County was concentrated in the cities of Tillamook, Bay City, Manzanita, Wheeler, Oceanside and Nehalem. As shown in Table 11, between 2000 and 2010, all growth in the county was concentrated within cities and unincorporated urban communities, while the population of unincorporated non-urban Tillamook County decreased slightly. Based on these historical patterns, future population growth is expected to continue to be concentrated in the county's urban areas.

Table 11. Geographic Growth Patterns

Tillamook County Communities	Population		Growth	%Growth
	2000	2010		
City and Unincorporated Urban Communities	13,229	13,985	756	5.7%
Unincorporated Areas	11,462	11,215	-247	-2.2%
Tillamook County	24,691	25,200	509	2.1%

Source: U.S. Census, 2010.

Tillamook County has a relatively high proportion of potentially transit-dependent populations, including seniors, youth, low income, and persons with disabilities. In particular, Tillamook County houses a large proportion of seniors, 65 years and older, relative to Oregon as a whole. As shown in Table 12, in 2010 persons 65 and older represented 21 percent of the population in Tillamook County (approximately 5,300 people), compared to 14 percent in Oregon. In 2040, seniors are forecast to represent 31 percent of the population in Tillamook County (approximately 9,350 people), compared to 22 percent in Oregon. Based on the estimated difference in the population 65 and older between 2010 and 2040, there is a projected increase of potentially transit-dependent population of 4,000 people.

Table 12. Demographic Growth Patterns

Age	Oregon		Tillamook County	
	2010	2040	2010	2040
<65	86%	78%	79%	69%
≥65	14%	22%	21%	31%

Source: Office of Economic Analysis, *Forecasts of Oregon's County Populations and Components of Change, 2010 – 2050*.

4.2-EMPLOYMENT GROWTH PATTERNS

As shown in Table 13, nearly two-thirds of the new employment in the Northwest Oregon region, including Tillamook County, is forecast to occur within five industries (highlighted in grey): leisure and hospitality (900 jobs), private educational and health services (680 jobs), professional and business services (410

jobs), construction (380 jobs), and natural resources and mining (290 jobs). In total, regional employment is forecast to increase by over 4,100 jobs between 2012 and 2022, representing an annual growth rate of 1.1%.

Table 13. Northwest Region Job Growth by Industry

Industry	2012	2022	Change	% Change	Annual Growth Rate
Total Payroll Employment	35,100	39,210	4,110	12%	1.1%
Leisure and Hospitality	5,980	6,880	900	15%	1.4%
Retail Trade	4,710	5,110	400	8%	0.8%
Manufacturing	4,600	4,840	240	5%	0.5%
Private Educational and Health Services	4,050	4,730	680	17%	1.6%
Public Education	2,570	2,730	160	6%	0.6%
Local Government (Non-Education)	2,420	2,610	190	8%	0.8%
Professional and Business Services	1,740	2,150	410	24%	2.1%
Natural Resources and Mining	1,650	1,940	290	18%	1.6%
Financial Activities	1,470	1,670	200	14%	1.3%
Construction	1,420	1,800	380	27%	2.4%
Other Services	1,330	1,430	100	8%	0.7%
State Government	1,090	1,130	40	4%	0.4%
Transportation, Warehousing, and Utilities	1,000	1,130	130	13%	1.2%
Wholesale Trade	400	440	40	10%	1.0%
Federal Government	390	360	-30	-8%	-0.8%
Information	280	260	-20	-7%	-0.7%

Source: *Employment Projections by Industry and Occupation 2012-2022 Northwest Oregon*

4.3–FUTURE TRANSIT DEMAND

Transit demand is anticipated to increase in conjunction with population and employment growth. Most of the population growth in Tillamook County is expected to result from people over 65 years old, which is a key transit market. Overall transit demand is expected to increase by at least 20% between 2010 and 2040. The growth rate for transit commute demand to major urban centers is expected to be even higher.

Future transit demand is informed through application of the Transit Cooperative Research Program (TCRP) Reports 58 and 161 methodologies, and consistent with stakeholder input, the Tillamook County demographics trends, and TCTD Customer Survey.

TCRP 161 Transit Need Evaluation

In 2012, the Transportation Research Board (TRB) published a methodology to estimate rural transit demand through Transit Cooperative Research Program (TCRP) Reports 58 and 161. The methods for estimating demand address four specific markets – general public rural passenger transportation, passenger transportation specifically related to social service or other programs, travel on fixed-route services in micropolitan areas, and travel on commuter services from rural counties to urban centers.

Various demographic characteristics and TCTD ridership parameters were used as input to estimate transit trip demand. The output from the needs assessment suggests an existing transit demand of approximately 600 riders per day. In contrast, TCTD fixed and deviated service currently serves approximately 300 riders per day and the Dial-A-Ride service serves approximately 35 riders per day. Based on this analysis, TCTD is capturing 56 percent of the mobility gap, which is relatively better than the documented 20 percent goal of most peer systems. However, the remaining mobility gap suggests unmet needs and opportunities for service, management, and capital enhancements.

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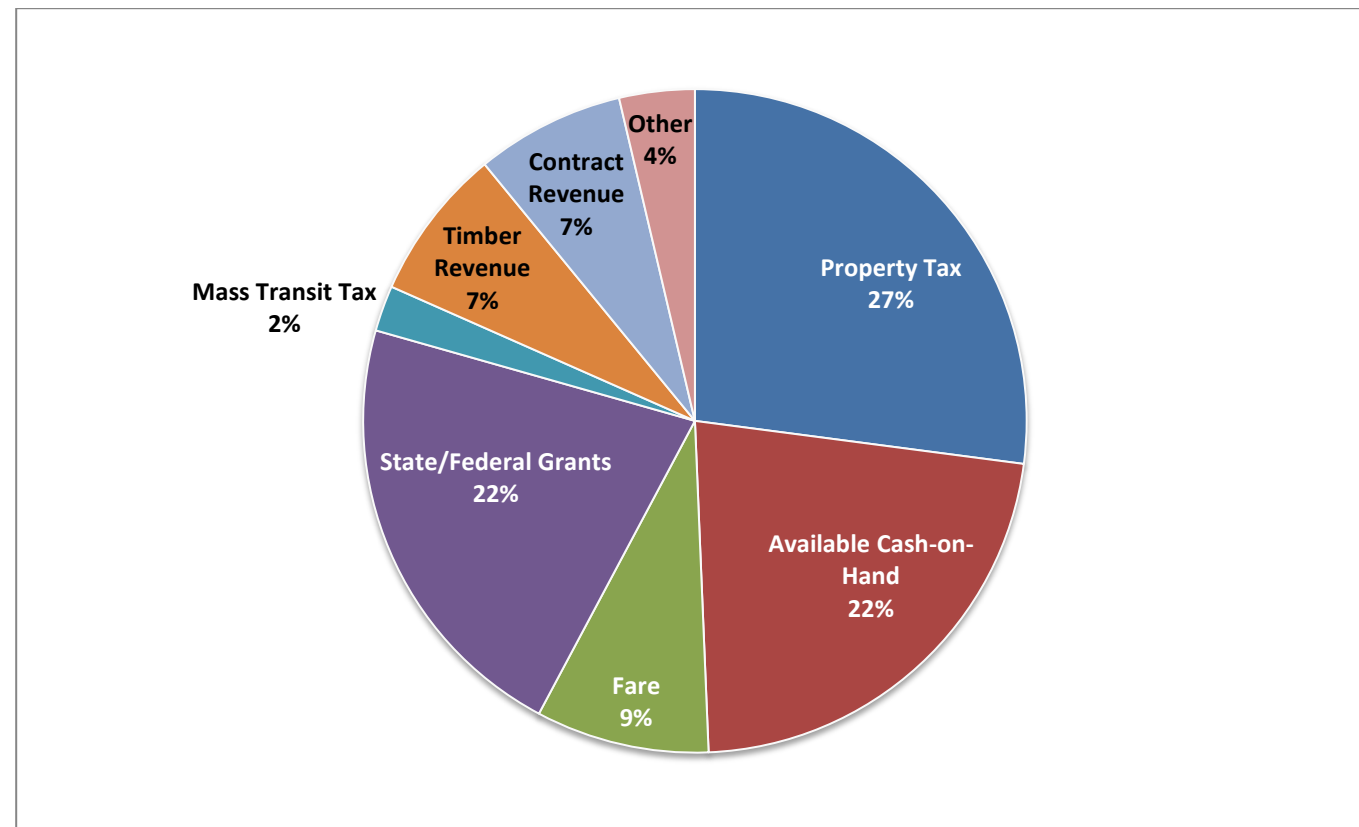
CHAPTER 5 Future Funding Analysis

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5–FUTURE FUNDING ANALYSIS

5.1–FORECAST OPERATING BUDGET

The Tillamook County Transportation District (TCTD) provides transit service with a relatively small operating budget compared to larger, more robust transit systems. The pie chart below shows the fiscal year 2014-2015 operating revenue sources as a proportion of the total TCTD operating budget.



Property taxes, available cash-on-hand, and State/Federal grants make up almost 75 percent of the total budget. In order to determine the future revenue base, each revenue source was extrapolated for a 20-year horizon, assuming the following methodologies:

Property Tax: TCTD collects a tax with a millage rate of 20 cents per 1,000 dollars of assessed property values. The forecast property tax is based on an annual increase of three percent of total existing property taxes and the additional property taxes from anticipated housing growth in the county.

Available Cash-on-Hand: Available cash-on-hand varies between fiscal years and is dependent on the previous fiscal year. As such, the future revenue forecast will assume that the available cash-on-hand will remain consistent throughout the forecast years.

Farebox Revenue: Farebox revenue growth is proportional to estimated population growth in the county, but does not assume any change in the existing fare structure.

Contract Revenue: TCTD receives reimbursement from the Ride Care Brokerage, Confederated Tribes of Grand Ronde and the Siletz Indians, and Lincoln County Transportation Service District.

State/Federal Grants: State/Federal grants have varied widely since the 2008-2009 fiscal year. The general trend of grant funding is projected to increase in Tillamook County. These revenues are dependent upon ODOT allocation policies.

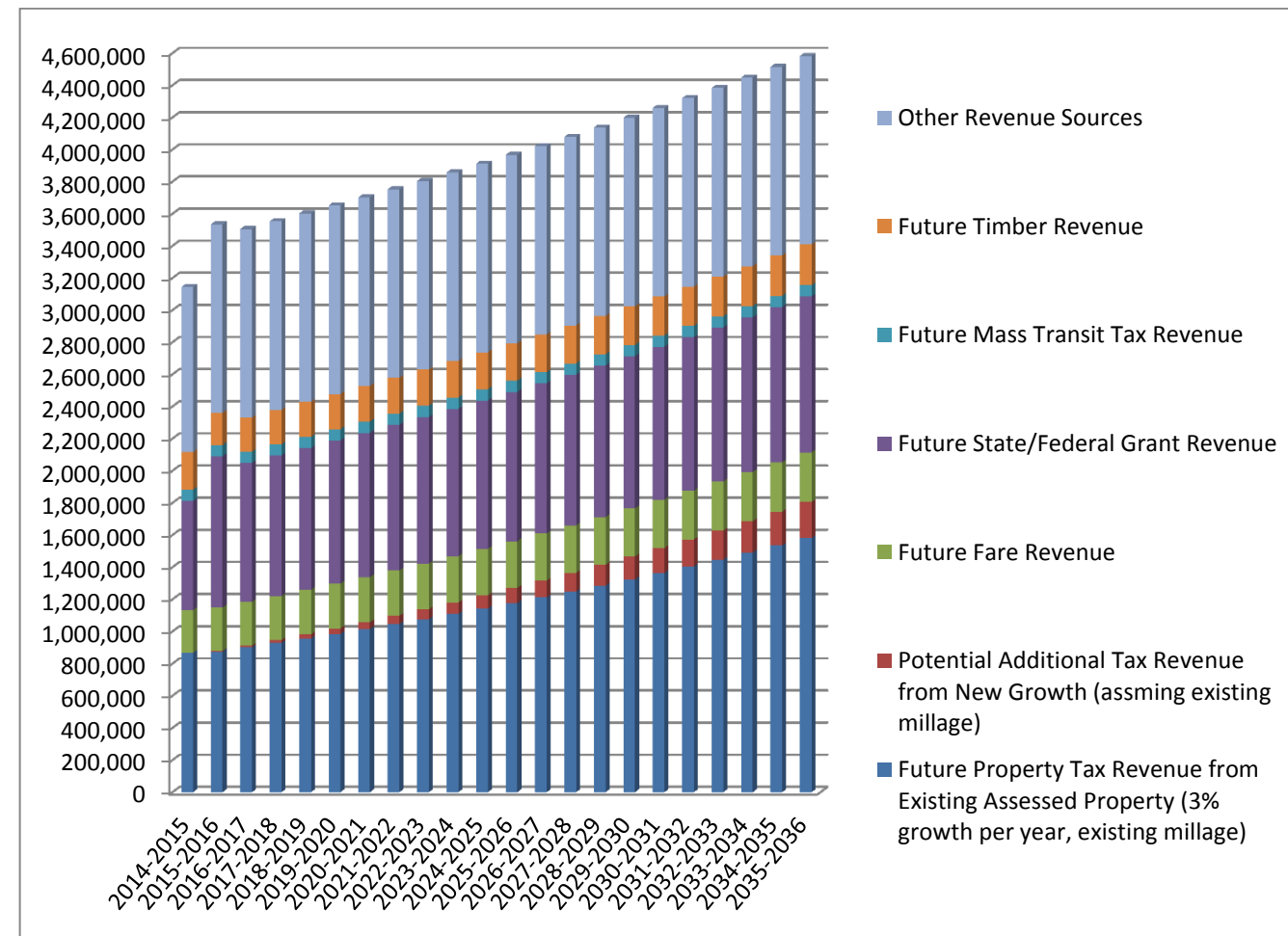
Mass Transit Tax: The mass transit tax is a payroll tax allocated by the state. TCTD has budgeted the mass transit tax at \$70,000 for the last three fiscal years. However, the District has received more than \$80,000 the past two years and is now budgeting \$80,000. The forecast of the mass transit tax revenue is dependent upon State of Oregon payroll in Tillamook County.

Timber Revenue: Timber revenue contributes approximately seven percent of the total TCTD budget for fiscal year 2014-2015. This revenue stream is highly volatile and dependent upon the policies enacted by the State of Oregon Forestry Board policies. Based on anticipated timber sales and federal mandates, timber revenue is assumed to grow linearly at one percent annually.

Other Revenue: Other revenue includes interest earned and other miscellaneous revenue sources. Other revenue is assumed to remain constant throughout the forecast years.

As shown in Exhibit 9, based on the projected growth of all revenue sources, there is a consistent projected growth in the operating budget for the 20-year horizon. The estimated growth between the 2015-2016 and 2035-2036 fiscal years is approximately 26 percent (+\$870,463), or a 1.3 percent annual growth.

Exhibit 9. Revenue Source Proportional to Forecast Operating Budget



Anticipated housing growth in the county contributes an estimated \$224,556 in additional tax revenue for TCTD. This indicates that new growth could potentially fund up to one additional 10-hour route servicing Tillamook or significantly fund a rural or commuter route.

The most significant increases in future revenue, approximately \$700,000, come from increased assessments of existing assessed property. If costs and revenues could be controlled such these increases could be allocated towards increasing transit rather than addressing increased costs of the existing system, there is potential for several additional 10-hour route blocks to be added to the system or to increase service hours for the entire existing system.

While actual future tax revenues are unknown and depend on a number of variables not explicitly accounted for by the estimates shown, the analysis provides an order-of-magnitude estimate about the potential for future service enhancements.

5.2–PROJECTED COST ANALYSIS

Based on the unit costs by service type, one additional bus for each type of service results in the following annual costs¹:

- Dial-a-Ride: \$206,000
- City of Tillamook Service: \$221,100
- Rural Service: \$270,300
- Commuter Service: \$284,300

¹ Additional bus service assumes a 10-hour schedule block per service

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CHAPTER 6 Service Alternatives

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6—SERVICE ALTERNATIVES

6.1—SERVICE ALTERNATIVES EVALUATION FRAMEWORK

Five criteria were developed to evaluate and prioritize alternatives proposed herein.

Revenue Operating Hours

Revenue operating hours relates to additional or reduced travel time between stop locations.

Cost

Future service alternatives can be evaluated based on unit costs, as summarized in Table 7. Cost estimation is directly related to a change in service hours, as detailed in Table 14.

Table 14. Total Cost per Service Hour by Service

Service	Total Costs (\$)	YTD Service Hours	Cost/Service Hour (\$)
DAR - Tillamook	154,987	2,980	52.01
NW Rides	285,272	5,288	53.95
DAR - North County	28,217	1,481	19.05
DAR - South County	13,250	724	18.29
Route 1: Town Loop	207,819	3,825	54.33
Route 2: Netarts/Oceanside	104,497	1,823	57.33
Route 3: Manzanita	267,870	4,582	58.46
Route 4: Lincoln City	224,101	3,434	65.25
Route 5: Portland	196,005	2,789	70.28
Route 6: Salem	122,431	2,061	59.42
Tripper Routes	17,606	222	79.27
Special Bus Operations	7,884	139	56.89
Total	1,629,938	29,347	55.54

Ridership and Service Area

Table 15 shows the existing routes, assuming a ¼ mile buffer to account for deviated fixed-route service, and the associated population and service area capture. As shown, Route 3 and Route 4 serve the most population and area, while Route 2 serves the least population and area. Future service alternatives can be analyzed based on this baseline analysis.

Table 15. Existing TCTD Routes Population and Area Capture Shed

Route	Area (Acres)	Population
1	508	6,278
2	435	4,474
3	1,479	9,886
4	1,430	7,144
5	652	6,253
6 ¹	na	na
Total TCTD Service²	3,558	18,310

Source: U.S. Census, 2010.

¹ Due to the characteristics of Route 6, no population or service area estimations were calculated.

² Total TCTD Service refers to the total population and area captured for all routes. The total for both population and area will not be the sum of each individual route since some routes serve the same areas.

Reliability

In this context, reliability refers to how frequently service follows published schedules. Factors that affect reliability include deviations and bus breakdowns.

TCTD operates Routes 1, 2, 3, and 4 as deviated fixed routes, which means these routes follow a fixed route with a set schedule but can detour up to ¼ of a mile off route following a user request. There are 13 regularly requested deviations.

Regular route deviations occur on Routes 3 and 4, with most occurring on Route 3. These primarily occur in the Cities of Nehalem and Tillamook to locations less than ½ mile from the designated fixed route.

Reliability can be qualitatively measured by determining if the alternatives reduce the number of regular route deviations by accommodating them through fixed route service. In parallel, additional service enhancements may be determined by understanding the cause for these deviations including limited pedestrian infrastructure. To this end, some deviations could be eliminated if ADA-compliant sidewalks were constructed from the origin to the fixed route bus stop.²

Impact to Existing Transit Users

Evaluating impacts on existing users when evaluating future service alternatives refers to trips that would be made by transit regardless of whether a service alternative were implemented. Three factors are considered in evaluating the impact, including:

- Direct financial impact (i.e., change in fare)
- Service quality changes (i.e., change in actual or perceived travel time)
- Service improvement change (i.e., change in rider comfort)

² While capital improvements such as sidewalk installation are not in the purview of TCTD, TCTD may choose to engage local agencies in interagency partnerships to fill pedestrian gaps in the network, particularly those that link areas to existing or proposed TCTD bus stops.

6.2—PROPOSED SERVICE ALTERNATIVES

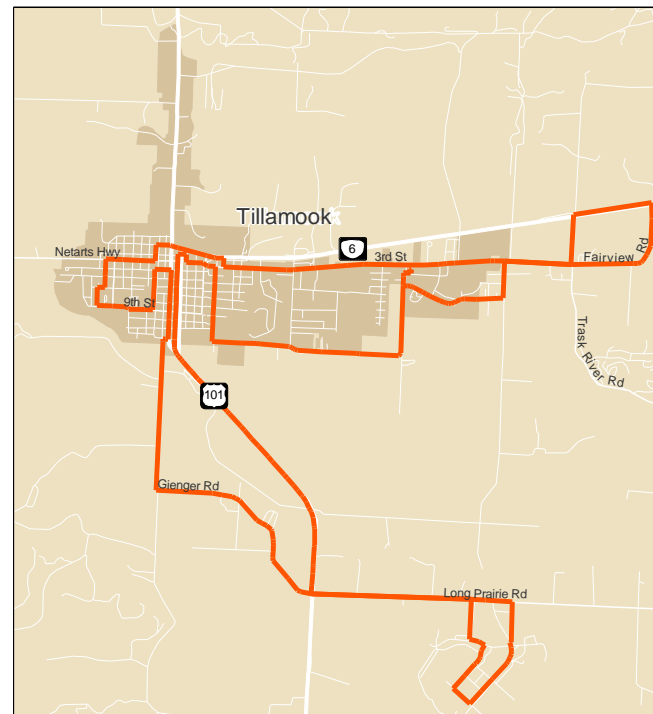
Fixed Route

Route 1

The following three alternatives are proposed for Route 1:

- **Alternative 1A:** Reduce headways from 60- to 30-minutes by running one additional bus. This route could also serve Ocean Breeze School which could eliminate the need for two existing tripper routes. In addition, depending on the schedule, this route would also provide additional coverage for Adventist School.
- **Alternative 1B:** Add an additional Town Loop route that serves Port of Tillamook Bay in lieu of traveling north on Highway 101. The remainder of the Town loop route, which serves residential and employment areas to the east and west of Highway 101, would continue to be served. The return route from the Port of Tillamook Bay could travel on Gienger Road to serve Trask River Mobile Home Park (an existing frequent deviation). Exhibit 10 shows the proposed route.
- **Alternative 1C:** Add an additional Town Loop route that serves Port of Tillamook Bay in lieu of traveling north on Highway 101, and operates in the opposite direction. The remainder of the Town loop route, which serves residential and employment areas to the east and west of Highway 101, would continue to be served. The return route from the Port of Tillamook Bay could travel on Gienger Road to serve Trask River Mobile Home Park (an existing frequent deviation).

Exhibit 10. Alternative 1B/1C Proposed Routing



Route 2 and Route 3

The following two alternatives are proposed for Route 2 and Route 3:

- **Alternative 3A:** New driver block that serves Route 2 twice a day and Route 3 three times a day, to fill morning and afternoon headway gaps for each route. At present, Route 2 has two relatively large service gaps in the morning (6:25-9:25 a.m.) and afternoon (2:25-5:25 p.m.). In parallel, Route 3 has two relatively large service gaps in the morning (5:38-8:00 a.m.) and afternoon (10:15 a.m.-2:00 p.m.) and stops evening service at 6:15 p.m. from the Transit Center. If the Cape Meares Road is eventually repaired, TCTD may consider making Route 2 a loop to serve the Cape Meares community, which is a relatively big DAR generator.
- **Alternative 3B:** Modify Route 3 to better serve Nehalem by adding a stop along Highway 101 to serve existing deviations, namely United Methodist Church and North Coast Recreation District). In conjunction, modify Route 3 to

replace flag stops through Rockaway Beach for a 3-mile zone with designated stops every ¼ to ½ mile, with an emphasis on stop location near relatively long side streets.

The Sunset Empire Transit District (SETD) LRTCP includes a service recommendation to enhance connections in Cannon Beach and Manzanita by assigning one district to manage operations between the two cities. At present, Route 3 provides three connections to SETD, one in Manzanita and two in Cannon Beach. With increased coordination, Route 3 could provide up to four connections with SETD. A feasibility and operations analysis will be conducted as part of the TCTD Intercity Service Enhancement Plan.

Route 4

The following four alternatives are proposed for Route 4:

- **Alternative 4A:** Modify existing Route 4 to serve existing Pacific City loop and proposed Port of Tillamook Bay loop every other run.
- **Alternative 4B:** Create new route that serves Pacific City and Tillamook and provides service through Sandlake Road.

Exhibit 11. Alternative 4B Proposed Routing



- **Alternative 4C:** Travel time savings to existing Route 4 as a result of Alternative 4B.
 - **Alternative 4Ca:** Add Port of Tillamook Bay loop
 - **Alternative 4Cb:** Add Port of Tillamook Bay loop at end of run between Tillamook and Lincoln City.
 - **Alternative 4Cc:** Add 5th run Route 4 to Lincoln City (reduce headways to 3-3.5 hours, rather than 4 hours) ³
- **Alternative 4D:** Add new bus to reduce headways by a factor of two between Tillamook and Lincoln City

³ Alternative 4Cc and Alternative 4B may be combined where the 5th run provides service to Pacific City and communities along Sandlake Road. This combination would result in additional service time.

Deviations

There are three alternatives related specifically to deviated fixed-route service, as follows:

- Retain existing deviated fixed-route service.
- Limit existing deviated fixed-route service to ADA passengers. This alternative would improve reliability and would continue to meet ADA regulations.
- Eliminate deviated fixed-route service. This alternative would improve reliability for the fixed-route service, but would increase costs for the DAR service since ADA regulations mandate paratransit service be provided for the length of the fixed route during the same operating hours. As such, the existing volunteer-driven DAR service may need to be employee-driven to ensure service to ADA passengers.

Intercity Route

Route 5

In an effort to interline with Greyhound services based in Portland, TCTD and Greyhound have drafted an interline agreement. This interline agreement proposes a service extension of Route 5 to connect with Greyhound service up to four times a day. A feasibility and operations analysis will be conducted as part of the TCTD Intercity Service Enhancement Plan.

Route 6

The Route 6 Coastal Connector service is a partnership between the Confederated Tribes of the Grand Ronde (CTGR), the Confederated Tribes of the Siletz Indians (CTSI), Salem Keizer Transit District (SKT), Yamhill County Transit Service Area (YCTA), Lincoln County Transportation District (LCTD), Tillamook County Transportation District (TCTD) and the Oregon Department of Transportation's Rail & Public Transit Division. (RPTD).

While TCTD is the designated service operator, the service is subsidized by an ODOT Section 5311(f) Intercity Grant and the Grant's local matching funds are provided by the CTGR and CTSI. Since SAMTD Cherrits Route 2X operates eight round trips between downtown Salem and the Spirit Mountain Casino. Therefore, the Route 6 Coastal Connector service operates three round trips between Chinook Winds Casino and the Spirit Mountain Casino where passengers can transfer to and from the Cherrits Route 2X at the Casino's East Entrance. Since SKT does not operate transit services on weekends the Route 6 Coastal Connector operates three round trips between Chinook Winds Casino and the Amtrak/Greyhound station in Salem. Route 6 improvements should align with the Salem-Keizer Transit Improvement Plan which assumes 30-minute headways. A feasibility and operations analysis will be conducted as part of the TCTD Intercity Service Enhancement Plan. Another consideration is to consider coordinating the Route 6 Coastal Connector with the YCTA services that provides seven round trips per day between both Grand Ronde Community Center and Spirit Mountain East Entrance to McMinnville. From McMinnville there are more connections to Hillsboro (MAX), Newburg, Sherwood, Tigard, and West Salem.

As such, any additional service to Route 6 is dependent on these agencies funding. However, ensuring seamless connections between Route 4 and Route 6 is important for any users traveling between Tillamook and Salem or Spirit Mountain. In addition, the alliance and connected plans can act as vehicles for coordination and partnership between these transit agencies to enhance service.

Dial-a-Ride

The majority of DAR trips have an origin or destination on or very close to existing fixed routes. This suggests an opportunity to find ways to get existing DAR users to switch to fixed-route service. Some DAR requests may be eliminated if complete pedestrian links were present between these origins/destinations and TCTD bus stops. TCTD should work with

local agencies (Tillamook County, cities, and ODOT) to incorporate pedestrian facilities in their Capital Improvement Plans in order to prioritize these in the future.

Another consideration is that the hospital and the county health department seem to be the biggest trip generators of DAR trips. It takes a lot of time to travel via Route 1 when transferring, so some options that provide one-seat rides (i.e., no transfer) for Route 3 and 4 riders to those destinations should be considered. Options include deviating the routes (adds time), interlining buses (e.g., Route 3 turns into Route 2 when it arrives at the transit center), or changes to Route 1 to improve connections to these popular destinations.

6.3–SERVICE ALTERNATIVES EVALUATION

To evaluate and assess each alternative according to the evaluation criteria, a scoring system was developed. Each evaluation criterion was assigned a range of values (T, L, B), and each alternative was scored relative to the other alternatives. The alternative that achieves each metric better than others receives a “T”, those that do not impact the metric receive a “L”, those that underperform compared to other concepts receive a “B” score. Table 16 outlines the elements considered in the initial evaluation and aspects of each element that characterized the variations between alternatives.

Table 16. Service Alternatives Evaluation

Alternative	Description	Criteria				
		Revenue operating hours ¹	Cost ²	Ridership/Service Area ³	Reliability ⁴	Impact to Existing Users ⁵
1A	Reduce headways from 60- to 30-minutes by running one additional bus.	●	●	●	●	●
1B	Add an additional Town Loop route that serves Port of Tillamook Bay in lieu of traveling north on Highway 101.	●	●	●	●	●
1C	Add an additional Town Loop route that serves Port of Tillamook Bay in lieu of traveling north on Highway 101, and travels in opposite direction.	●	●	●	●	●
3A	New driver block that serves Route 2 twice a day and Route 3 three times a day, to fill morning and afternoon headway gaps for each route.	●	●	●	●	●
3B	Modify Route 3 to better serve Nehalem by adding a stop along Highway 101 to serve existing deviations. In conjunction, modify Route 3 to replace flag stops through Rockaway Beach for a 3-mile zone with designated stops	●	●	●	●	●
4A	Modify existing Route 4 to serve existing Pacific City loop and proposed Port of Tillamook Bay loop every other run.	●	●	●	●	●
4B	Create new route that serves Pacific City and Tillamook and provides service through Sandlake Road.	●	●	●	●	●
4Ca	Eliminate existing Pacific City loop and add Port of Tillamook Bay loop	●	●	(4A must be implemented in coordination with 4Ca)	●	●
4Cb	Eliminate existing Pacific City loop and add Port of Tillamook Bay loop at end of run between Tillamook and Lincoln City.	●	●	(4A must be implemented in coordination with 4Cb)	●	●
4Cc	Eliminate existing Pacific City loop and add 5 th run Route 4 to Lincoln City (reduce headways to 3-3.5 hours, rather than 4 hours) – extra 1-2 service hours per day	●	●	(4A must be implemented in coordination with 4Cc)	●	●
4D	Add new bus to reduce headways by a factor of two between Tillamook and Lincoln City	●	●	●	●	●

¹ ● = significant increase in travel time; ● = moderate increase in travel time; ● = no increase to travel time

² ● = significant increase in cost; ● = moderate increase in cost; ● = no increase to cost

³ ● = reduces existing service area; ● = does not change existing service area; ● = increases existing service area or provides additional headways which may increase ridership

⁴ ● = negatively impacts reliability; ● = does not change reliability status quo; ● = improves reliability

⁵ ● = negatively impacts existing users; ● = does not impact existing users; ● = improves service for existing users

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CHAPTER 7 Management and Capital Alternatives

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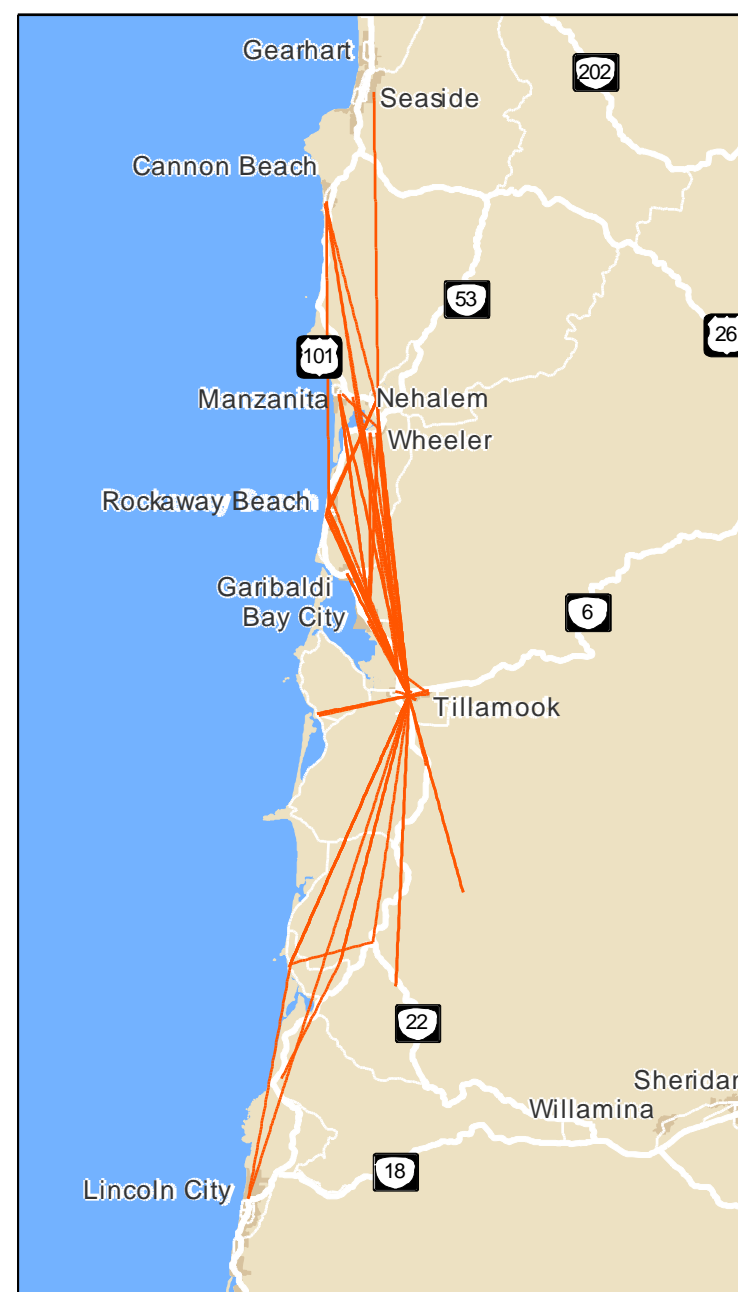
7—MANAGEMENT AND CAPITAL ALTERNATIVES

7.1—FARE POLICY

Minimal changes to the existing fare policy are proposed. Inflation should be monitored to adjust fares accordingly every year. TCTD may choose to negotiate pass programs on a per person basis for additional organizations, rather than providing a reduced price per passenger. shows the proportion of fare types used over a one-year period, between October 1, 2014 and September 30, 2014. As shown, regular passes represent approximately 70 percent of total fares sold, and of those more than 20 percent are monthly passes. At present, monthly passes can be used for multi-zone trips.

Exhibit 12 shows the bus origins and destinations for monthly pass holders only. As shown, a majority of trips are multi-zone trips. To this end, TCTD should consider a tiered monthly pass system for single- and multi-zone use.

Exhibit 12. Monthly Pass Bus Origin/Destination



Source: TCTD, Customer Survey #1

Table 17. Proportion of Fare Types (October 1, 2014 to September 30, 2015)

Service Type	DAR	1 Zone	2 Zone	3 Zone	TownLoop Day Pass	Monthly Pass	PDX Round Trip	PDX One-Way	Ride Connect 1 Zone	Ride Connect 2 Zone	Visitor Day Pass	Tribal ID	Total
DAR	8,231	-	-	-	-	-	-	-	-	-	-	-	8,231
NW Rides	5,978	-	-	-	-	-	-	-	-	-	-	-	5,978
Deviated-Fixed	-	13,283	10,478	3,074	19,613	47,104	-	-	-	-	1,094	-	94,646
Intercity	-	250	2,772	482	-	-	6,837	2,864	211	1,502	418	919	16,255
Other	-	53	100	4	7	2,593	-	-	-	-	2	-	2,759
Total	14,209	13,586	13,350	3,560	19,620	49,697	6,837	2,864	211	1,502	1,514	919	127,869

Source: TCTD

7.2—FLEET ALTERNATIVES

Vehicle Types

TCTD owns 23 vehicles ranging from medium-sized buses to modified mini-vans, and tracks fleet age and mileage to inform a bus replacement schedule. Table 18 summarizes the replacement needs up to 2020.

Table 18. Cost of Vehicle Replacement by Fiscal Year

	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20
Total Cost (\$)	335,000	160,000	333,836	1,215,297	905,126
Federal/State Funding (\$)	270,230	128,719	300,452	972,238	724,101
Local Match (\$)	64,770	31,281	33,384	243,059	181,025
Vehicles Replaced	4	3	3	6	3

Source: TCTD

Since TCTD currently tracks its fleet its fleet to manage operational failures, TCTD should develop a long range fleet financing plan. The plan would include both a replacement schedule of existing buses as they reach the end of their useful life, as well as possible fleet expansion to accommodate service growth. Another issue that the fleet plan should address is the

types of vehicle to be purchased. Transit agencies face the issue of balancing the efficiency advantages of fleet standardization with the benefits of matching vehicle size and other vehicle attributes with specific service needs.

It is recommended that the fleet be standardized to two types of vehicles:

- Medium-sized (approximately 30 to 32-foot) buses for the fixed-route service; and
- Mini-vans or small bus for the Dial-a-Ride service

Additional recommendations for the fleet include:

- Purchase heavy-duty (10-year or 12-year) buses for the fixed-route service. Heavy-duty buses typically have lower life-cycle costs and also will result in reduced maintenance costs and fewer road calls.
- Purchase vehicles in larger batches. There is an advantage in having multiple vehicles that are identical in terms of parts and maintenance needs. Even very similar vehicles purchased in different years will have differences that may impact maintenance costs.
- Maintain an average fleet age that is less than half of the average life span of the vehicles. For example, a sub-fleet of 10-year buses should have an average fleet age of five years or less.

- TCTD should continue to purchase low-floor buses and eventually, as part of the normal bus replacement schedule, replace all the high-floor buses with low-floor models.

Fleet Size

The size of the fleet is determined by the service needs, and a final size recommendation will be made once the future service plan has been established. The financial forecast has indicated that TCTD has a capacity to support up to three new buses.

Typically a 20 percent spare ratio is recommended. Adequate spare buses are particularly important for small fleets, since one or two buses that are out of service for an extended period (such as after an accident) can have a significant impact on the ability to meet service needs. In addition, with some routes operating with long headways, missing a trip due to not having an available spare bus will have a significant impact on service.

There are two approaches to establishing the spare fleet. One approach is that spares are composed of older buses that are no longer cost-effective for daily service, but are maintained to the point that they can be used on a limited basis. Typically, the maintenance costs to keep the older buses in running condition is higher than for a newer bus.

The other option is to have a spare fleet that is similar in age to the in-service fleet. In this case, the spare buses can be rotated

into service, which can reduce the mileage accrued on individual vehicles and extend vehicle life. In addition, the incidence of road calls with a newer spare fleet is likely to be lower.

The number of vehicles and the vehicle replacement schedule determines the number of buses small rural providers can purchase are limited by ODOT's funding availability.

Fuel Types

TCTD has been purchasing diesel buses. While diesel engines have been getting "cleaner" as a result of stricter federal emissions standards, TCTD could consider the purchase of lower-emission vehicles, such as buses using hybrid-electric propulsion. A bus with hybrid-electric propulsion costs \$150,000 to \$200,000 more than a similar bus with diesel propulsion, but will generally reduce fuel costs by approximately 25 to 30 percent. Given these costs and savings, the payback on the initial higher purchase price is very likely to be insufficient to justify the purchase of hybrid-electric buses simply on a direct cost-benefit basis. However, some transit agencies believe that there is additional value to hybrid technology resulting from reduced emissions and an improved community perception of the transit agency. In addition, there are occasionally federal funding incentives for the purchase of low-emission buses that may make the purchase of hybrid-electric buses more feasible.

There have also been significant advancements in all-electric buses. A promising option for all-electric bus technology appears to be quick re-charging of batteries while the bus is stopped at a station or at a layover spot, often without significantly service delay. While this technology has not advanced to the point that it is currently marketable, it may make sense for all new or reconstructed stations to be designed to accommodate higher-voltage electrical connections. This can simply involve incorporating the appropriate conduit when the facility is constructed.

7.3–FACILITY IMPROVEMENTS

Transit Centers and Major Transit Stops

Transit centers provide a connecting (transfer) point for bus routes, while major transit stops are typically provided at major activity centers. In addition to providing greater passenger amenities that improve rider comfort, transit centers and major transit stops provide visibility for the transit service, reminding residents and visitors of the availability of the service within their community. For that purpose, there is a significant benefit in having a transit center or major transit stop) as a focal point in every city served by TCTD. For small communities, this could be as simple as providing a nice passenger shelter.

The following key concepts should be considered when constructing or reconstructing transit centers:

- The location of the stop or transit center should consider pedestrian access to nearby destinations, ease of access by bus that reduces out-of-direction travel and allows for safe bus operations, and a location that has high visibility, both to publicize the service and to enhance rider safety and security.
- The stop or transit center should be sized to accommodate planned 20-year growth, both in terms of the number of buses accommodated and the size of passenger amenities, such as the passenger shelter.
- Materials used should consider life-cycle costing, which usually points toward high quality, long-lasting materials that have reduced maintenance costs. This feature is especially important in coastal communities that are subject to high winds, heavy rains, and salt air.
- The stop or transit center design should use Crime Prevention Through Environmental Design (CPTED) principles to improve rider security. CPTED principles include maintaining clear sight lines into and across the station, eliminating "hiding" spots, and providing adequate lighting.

- Public art should be considered for transit centers. Art has been shown to discourage vandalism and can also be used to involve the local art community in the transit center project. Regulations now require that public art funded through FTA be "functional." Art associated with railings, benches, pavement, windscreens, or any other element of the shelter would meet the FTA requirement. Free-standing art, such as a sculpture, would not.

Downtown Tillamook is the only location with a full transit center within the County and the only one with enough transfers to require one. Location of future transit centers and major transit stops is dependent on future route locations and frequency. However, current relatively high frequency stops within the county that have more than 5 boardings a day would be considered major stops. All major stops merit consideration for a higher level of improvement, such as a shelter. Major stops include Oceanside; Rockaway City Hall; Marie Mills, the Post Office, Tillamook Bay Community College, Department of Human Services, and Fred Meyer in Tillamook; Nehalem, Manzanita, and Garibaldi. Outside of the County, major stop locations include Lincoln City Safeway, Spirit Mountain Casino, Sunset Transit Center in Beaverton and Union Station in Portland. All of the above mentioned stops should have shelters at a minimum. Final decisions about transit center locations and other stop improvements depend on the final service network.

Bus Stops

Currently, TCTD uses a combination of bus stops and flag stops. TCTD currently has only 53 bus stops with timeholders. It is recommended that where feasible, flag stops be replaced with designated bus stops. The cost for a new bus stop sign and pole, installed, can range from \$200 to \$500, depending on the material and the installation conditions. Designated bus stops have the following advantages:

- They provide awareness of the service, improving the visibility of TCTD in the community.

- The stop can be located to assure safe bus and passenger access
- The stop can be improved (e.g., with a paved landing pad) to facilitate access by riders needing to utilize the bus' lift or ramp
- They can consolidate access, reducing the number of stops a bus makes
- They can help communicate service information such as route numbers are included on the signs

Bus stop poles and the attached signs should be sturdy to stand up to the high coastal winds. An option of perforated metal poles in concrete footings may work well. It is recommended that route numbers be placed on the signs to assist riders in identifying the service. Bus stop displays with specific route, schedule, and fare information can also be very helpful, though they require updating when there are services or fare changes, which adds to operating cost. If service and fare changes are relatively infrequent, the more specific rider information at the highly used bus stops is recommended. This option is especially important in areas where visitors tend to use the TCTD service, since they are less likely to be familiar with the fares, routes and schedules.

Bus stops should be located to allow for safe bus and passenger access. Where possible, bus stops would be located at locations that have sidewalks or other pedestrian connections, and that allow for safe pedestrian crossing of the street. On major roadways, such as state highways, bus stops should allow for the bus to stop out of the traffic lane to avoid rear end collisions and discourage unsafe passing of the bus by motorists.

Shelters

Passenger shelters add to the comfort of using transit and are generally very popular with riders. An "off the shelf" passenger shelter (there are several companies that provide them) typically costs approximately \$5,000 installed. In addition to initial capital costs, passenger shelters will incur maintenance costs, both for

routine on-going cleaning and repair and replacement as needed. The primary maintenance issues for shelters, apart from the routine cleaning, are vandalism and fading/clouding of the windscreen. For routine cleaning, trash receptacles, if included, would dictate the frequency that the shelter should be serviced. If trash receptacles are not provided, the regular cleaning and servicing of shelters can be as low as a once per month.

Passenger shelters must be designed to meet the requirements of the Americans with Disabilities Act (ADA) and should be located so as to provide safe and convenient pedestrian connections with nearby destinations. Coordination of shelter placement with sidewalk and other pedestrian improvements projects planned by ODOT or local agencies is encouraged. In addition to the overhead protection (roof), shelter amenities can include:

- Windscreens
- Benches
- Trash receptacles
- Passenger information

Passenger shelters are recommended at high-use stops and all transit centers. They are especially important in a coastal community given the high incidence of wind and inclement weather. TCTD currently has 21 bus stops with shelters, each of which have schedule boards. All of the major stop locations noted in the transit center section should have a shelter. The condition of existing shelters at these locations should be reviewed and additional amenities considered, although final prioritization depends on the future service plan. Low-frequency stops that stakeholders have noted as in need of shelter improvements include Beaver and Hebo due to the long gap between buses and the lack of other places to wait.

There is a tradeoff between the level of wind/weather protection provided through the use of windscreens and an open shelter design, without a windscreen, that reduces maintenance costs. If vandalism is not a major problem for TCTD, windscreens are recommended for TCTD shelters both to

address coastal winds and because the infrequent service can lead to longer wait times which suggests the need for a higher level of protection from the weather. Glass in lieu of acrylic should be considered to address weathering and fading issues.

An alternative to a shelter for a stop that has less ridership is a bench. Benches should be considered for stops with 3-5 boardings per day, although other factors, such as the proximity to senior housing and nearby businesses willing to contribute to the costs, should be factored into the decision as well. Benches that attach to the bus stop pole, such as the Simmi-Seat take up very little space, have low maintenance, and are relatively inexpensive. Installed benches vary in price from \$200 to \$1000, depending on materials, the quality of the product, and the installation conditions.

Exhibit 13. Simmi Seat



Park-and-Ride Lots

Park-and-ride lots are typically feasible in situations where there is either a parking charge or parking shortages at the rider's destination, or if there is a significant savings in travel cost or time by using transit. Without one or more of these factors, park-and-ride use is generally very low. In TCTD's service district, park and ride options are particularly important as topography issues prevent many people from walking to and from the bus stop. Park and rides can also act as a gathering point for shared ride services.

TCTD has two formal park-and-ride facilities located at the District’s Administrative and Operations Center and the Kiwanda Community Center in Pacific City. The TCTD park-and-ride serves both Routes 1 and 5.

For TCTD, park-and-ride options might be feasible in the following situations:

- For the Portland-Tillamook or the Salem-Lincoln City trips, which are long enough that the transit trip may yield significant user cost savings (particularly if gas prices increase).
- For travel to communities where there are parking shortages during peak tourism times, such as Cannon Beach in the summer. Locations within Tillamook County that might be considered for this type of service are Pacific City, Manzanita, and Oceanside.

The intercity park-and-ride demand is likely to be relatively small and peak tourism park-and-ride is seasonal. Thus, it may not make sense for TCTD to invest in a significant park-and-ride program. Instead, agreements with local business and community organizations such as the Kiwanda Community Center and Fred Meyer to allow use of a few spaces for park-and-ride usage is recommended. For example, a major grocery store or shopping area may be willing to designate 4-6 spaces for the longer distance park-and-ride with the expectation that park and riders would often stop and shop on one end of their trip. This approach can be used to test park-and-ride demand without a significant investment by TCTD.

A seasonal park-and-ride lot to meet high tourist demand would need to be located just outside the area with parking shortages, and would need to be connected to the area via a shuttle operating with fairly high frequency, which carries with it substantial operating costs. That service is only likely to be feasible if subsidized by a merchant or business group that would benefit from the improved access.

Passenger Amenities

Additional passenger amenities requested during the stakeholder outreach for this project include Wi-Fi and more accessible storage for grocery bags and luggage on buses. Stakeholders also suggested more information about services and how to ride, in more languages, both at bus stops and on-line. Bicycle and Pedestrian Amenities

Bicycle and pedestrian access is very important to transit. Virtually every bus rider is also a pedestrian, and bicycles provide an important “last mile” option for transit, particularly for a system such as TCTD which serves residents that are fairly widely dispersed. While it is not within TCTD’s scope or financial capability to provide safe and convenient pedestrian access to transit stops, it can work with local cities and the county to prioritize pedestrian improvements that serve transit stops. In addition, pedestrian improvements in the immediate vicinity of a transit center or shelter can sometimes be funded by the project.

It is of particular importance and a legal requirement to provide for access by persons with disabilities. Transit centers, shelters, and new or relocated bus stops should be designed to meet the requirements of the Americans with Disabilities Act (ADA). It is recommended that cities, the county, and ODOT prioritize street corners near transit centers and shelters for ADA ramps. This is also particularly relevant to TCTD due to the high proportion of seniors in its service district.

The bicycle/transit connection can be facilitated by providing for bike parking at transit centers and, space permitting, transit shelters. TCTD buses have the capability to carry bikes. However, not all stakeholders were aware of this service. TCTD should make this information more prominent on its website and other promotional materials.

7.4–PUBLIC TRANSPORTATION SYSTEM TECHNOLOGIES

Dispatching

TCTD currently uses a basic application for dispatch that it developed, called Transit Ace . Transit Ace schedules rides, dispatches the buses and manages the District’s operating statistics. For Dial-a-Ride, customers currently phone in their requests. In the past, TCTD used RouteMatch. However, it found the system to be expensive and it didn’t fully meet their needs for trip management and reporting.

The agency is considering expansion of its Dial-a-Ride services to accept private pay customers for out of County trips under the NW Rides brand and moving to on demand scheduling. In order to efficiently handle the volume of requests, it might need to consider enhanced dispatch software. Depending on the demand, in the future it might be worth considering a dispatch system that would allow clients to schedule their rides directly.

Two relatively low-cost dispatch systems that are used by transit agencies of a similar size with extensive paratransit as well as fixed route services are Mobilitat and StataGen. Mobilitat is relatively inexpensive and simple, yet can be scaled up as service needs change and the system grows. It can generate the reports that TCTD needs to submit to the National Transit Database and for asset management. The tablet allows the operators to schedule and manage their own rides and has been used in Harney and Josephine Counties. StrataGen is a more robust and somewhat more expensive system. NE Oregon Public Transit which serves Baker, Union, and Wallowa counties on behalf of Community Connections of NE Oregon, Inc. uses it and has been able to expand their coverage to include several nearby agencies. TCTD plans to visit some peer agencies in order to see how these systems operate on the ground and make an informed assessment as to which might best meet their needs.

Cameras

TCTD currently equips buses with security cameras. On-vehicle surveillance provides for documentation of criminal acts and can also be used to absolve the transit agency of fault in litigation involving passenger incidents. Security cameras (Closed Circuit Television, or CCTV) should also be considered for transit centers.

CCTV can be used to enhance safety and security at transit centers. Criminal behavior can be documented and recordings used to help prosecute perpetrators. In addition, the presence of a camera at a transit center can deter criminal activity and add to the sense of security for riders. For that reason, the presence of the cameras at the transit centers should be communicated. CCTV cameras pointed at a bicycle parking area can enhance security for bike parking that may be located at or next to a transit center.

CCTV can act as standalone units that record video that can be accessed as needed in response to an incident. They can also be paired with many other technologies, such as radio communications, silent alarms, and Automatic Vehicle Location (AVL) to create a broader security system. There are many options for security systems with wide ranges in capability and cost. Should TCTD wish to pursue a possible security system, it is recommended that a study be conducted of possible options and their associated costs to allow for the selection of a system that best meets TCTD's needs.

On Board Information System

TCTD is equipping future intercity and deviated fixed route buses with On Board Information Systems that performs two functions. The District is purchasing the Hanover Destination signs and onboard announcement system that's controlled by GPS. First, after the driver programs the Route into the system controller, GPS technology changes the destination sign to flash both the Route and next bus stop. Secondly, when the bus reaches a certain geographic location along the route using

Google Maps the GPS sends a signal to the controller which activates the audio system to announce the next stop to passengers on the bus. In addition to improved customer service this technology will help TCTD meet its ADA requirement to announce major bus stops.

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CHAPTER 8 Transit Development Plan

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8—TRANSIT DEVELOPMENT PLAN

8.1—THE VISION

TCTD provides fixed route service and dial-a-ride service throughout Tillamook County with circulator service in the City of Tillamook and deviated-fixed route service to cities up and down the coast within Tillamook County and intercity connections outside of the County in Cannon Beach, Lincoln City, Portland, Grand Ronde, and Salem. TCTD's mission is to connect the community through sustainable transit service. TCTD is committed to being innovative in how it delivers service and values accountability, safety, communication, and service excellence. TCTD is committed to working with partner transit agencies to provide a coordinated transit network that allows local residents and visitors to travel to and from the Willamette Valley and up and down the coast for trips that provide access to jobs, medical care, daily needs, and recreation.

The following outlines a long-range plan to help TCTD implement its vision over the next 20-years. The plan includes near-term and mid-term recommendations, a financial plan, and an implementation plan.

8.2—MANAGEMENT, OPERATIONS, AND CAPITAL STRATEGIES

The extensive existing and future market analysis conducted for Tillamook County and the TCTD service area, and the subsequent public and stakeholder outreach, have informed the recommendations provided in this section. The management, operations, and capital strategies summarized in Chapters 6 and 7 have been prioritized as either short-term or medium-term actions.

- **Short-term actions** could be implemented within the five-year horizon (2020) within TCTD's existing budget, or with minimal cost increases. Short-term recommendations were founded on TCTD's near-term objectives to address immediate operations deficiencies and bolster interagency coordination across District boundaries.

In addition to the public and stakeholder outreach which helped identify unmet needs, the short-term recommendations were developed to implement strategies founded as part of previous planning efforts, particularly the *TCTD 2013-2015 Business Plan*, and strategies proposed through the TDP update process for a five-year implementation horizon.

- **Mid-term actions** could be implemented within the 10-year horizon (2025) to accommodate anticipated growth and to address the most significant unmet needs.

Mid-term recommendations were guided and prioritized using two outreach and evaluation efforts. (1) Each service alternative was evaluated against five criteria: revenue operating hours, cost, ridership and service area, reliability, and impacts to existing users. (2) Customer Survey #2 surveyed existing riders to determine preferences between service alternatives, which resulted in total ratings for each alternative.

Management Strategies

Short- and mid-term management actions were developed through stakeholder and District engagement, as follows:

- **Partner With Employers** – Many of the actions of this strategy are needs assessment based, including conducting employer surveys and continued coordination with large employer sites.

- **Gain Community Support** – Gaining community support by creating and supporting local programs promotes the service and builds consensus.
- **Involvement with Outside Organizations** – TCTD's involvement with outside organizations ensures that knowledge and information sharing.
- **Adjust the Fare Base Policy** – TCTD should review fares annually to ensure that farebox recovery and equity objectives are being met.
- **Positive Union Relations** – Positive union relations ensures a positive work environment.
- **Create Measurable Outcomes for Services to Promote Effective Monitoring** – The transit benchmarks developed in this plan provide the foundation for an effective monitoring program.
- **Enhance Coordination between TCTD and Local Partners** – Coordination between TCTD and local partners, including adjacent transit districts, local transportation providers, and local jurisdictions will lead to a comprehensive and efficient system, in which users can travel seamlessly inter- and intra-regionally.
- **Meet Daily General Administrative and Maintenance Needs** – TCTD should focus on daily administrative and maintenance needs to ensure smooth operations.
- **Customer or Stakeholder Satisfaction** – TCTD Service must have a friendly face to be recognized and successful. Promoting awareness of the service provided through online and on-paper means will contribute to the success of the service.

The above strategies are summarized in Table 19 with the associated short- and mid-term actions.

Table 19: Management Strategies

Actions	Status	Short-Term	Mid-Term
PARTNER WITH EMPLOYERS			
Survey Employee Groups	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Employer Interviews	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Identify the Needs	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Planning Phase	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Implement the Plan	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Follow Up	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
GAIN COMMUNITY SUPPORT			
Friends of the Wave			This action item should continue to be an agency focus as long as there is the community support to pursue.
Establish a Foundation			This action item should continue to be an agency focus as long as there is the community support to pursue.
Participate in Community Events	Ongoing	Host a TCTD information and travel training booth at farmers markets.	TCTD should identify community events on a yearly basis and identify yearly targets for number of touchpoints with the community.
Gain Support by Interaction from Other Agencies	Ongoing	TCTD should continue to engage with the NWOTA agencies, Salem-Keizer Transit, Greyhound, and with other transit agencies in the area.	TCTD should continue to engage with the NWOTA partners, Salem-Keizer Transit, Yamhill County Transit Area, Confederated Tribes of Grand Ronde and the Siletz Indians, Greyhound, Amtrak, and with other transit agencies in the area.
INVOLVEMENT WITH OUTSIDE ORGANIZATIONS			
Oregon Transit Association	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Public Transportation Advisory Committee	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Northwest Oregon Transit Alliance Coordinating Committee	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
Northwest Oregon Area Commission on Transportation	Ongoing	TCTD should continue to participate and engage	TCTD should continue to participate and engage
ADJUST THE FARE BASE POLICY			
Annual Fare Review	Ongoing	TCTD should implement small increases in fares on an annual basis.	TCTD should develop a program to review fares periodically to ensure farebox recovery ratio is on-par with peer agencies.
POSITIVE UNION RELATIONS			
Positive negotiations with the Union	On-Going	Continue to Monitor and Improve Union Relationship	Continue to Monitor and Improve Union Relationship
Quarterly Meeting with Union Representative		Conduct quarterly meetings to discuss any issues that may be occurring and to generally maintain and improve working relationships.	Conduct quarterly meetings to discuss any issues that may be occurring and to generally maintain and improve working relationships.
CREATE MEASURABLE OUTCOMES FOR SERVICES			
Build Secondary Measures	Being completed as part of the TDP	These action items should continue to be an agency focus.	These action items should continue to be an agency focus.
Educate the Board on Measures	Being completed as part of the TDP		
Communicate Measures to Public			
Communicate Measures to Drivers	Ongoing		
Communicate Measures to the City Council and	Ongoing		

Actions	Status	Short-Term	Mid-Term
County Officials			
Celebrate 20 years of Service		These action items should continue to be an agency focus.	These action items should continue to be an agency focus.
Compare Measures Against Other Transit Organization of Similar Size	Ongoing		
Conduct a Public Awareness Survey			
ENHANCE COORDINATION BETWEEN TCTD AND LOCAL PARTNERS			
Meet with Pacific City Chamber		These action items should continue to be an agency focus.	These action items should continue to be an agency focus.
Set up a meeting with Cloverdale Group	Done		
Complete Cloverdale Wayside Transit Center	10%		
Lincoln City/NCAC	Ongoing		
Identify and meet with other business, planning and redevelopment groups in south county.	New	This will contribute to regional recognition of TCTD and allow TCTD to better understand their market needs. For example, attend the Cape Kiwanda Planning Meeting.	
MEET DAILY GENERAL ADMINISTRATIVE AND MAINTENANCE NEEDS			
Preparations for Board Meetings	Ongoing	This action item should continue to be an agency focus.	
Develop and Approve Annual Budgets	Ongoing	This action item should continue to be an agency focus.	
Develop a more Comprehensive Facility Maintenance Program that Includes Buildings, Shelters, etc.	New	A Comprehensive Facility Maintenance Program will help TCTD to prioritize capital needs and regular maintenance.	
Hire and Train an In-House Service Tech to Perform Bus Repairs and Preventative Maintenance	New	There may be cost savings associated with having an in-house tech on staff.	
CUSTOMER OR STAKEHOLDER SATISFACTION			
Survey yearly to Measure	Ongoing	These action items should continue to be an agency focus.	These action items should continue to be an agency focus.
Implement a Public Awareness Survey every two years			

Customer Service/Information Strategy

The following describes actions to improve customer service and information that can be implemented in the short-term and that should be maintained on a long-term basis.

- **Produce User-Friendly Brochure.** TCTD currently provides all of the relevant service information across several brochures and system maps. TCTD should consider consolidating all TCTD service into a single, user-friendly brochure.
- **Develop Mobile Application Technologies.** A mobile/smartphone presence has become increasingly important. TCTD should explore various mobile applications and develop an application that serves its existing and potential riders most.
- **Invest in Training Program.** The face of TCTD is the bus operators and customer service staff. Continue investing in training resources so that staff contribute to the District's positive image. TCTD should create a more robust and formal training program NEMT drivers to provide stretcher transportation service.
- **Develop Dispatching/DAR Operations Procedures.** Communication between and among bus operators and support staff will allow everyone to quickly and easily communicate if issues arise while in operation.
- **Install Hanover Destination Signs on New Fleet.** TCTD is planning to purchase Hanover Destination Signs on all new buses. This signage system performs 2 customer service tasks. First, after the driver programs the Route into the system controller, GPS technology changes the destination sign to flash both the Route and next bus stop. Secondly, when the bus reaches a certain geographic location along the route using Google Maps the GPS sends a signal to the controller which activates the audio system to announce the next stop to passengers on the bus. In addition to improved customer service this technology will help TCTD meet its ADA requirement to announce major bus stops.

Operations Strategies

In the short-term, TCTD should focus on increasing reliability, improving interregional coordination, and implementing the coordination enhancements that can be implemented with little to no additional cost to TCTD so that increases in ridership can be evaluated. In the mid- to long-term, TCTD should focus on increasing service based on the alternatives presented in Chapter 6 and in the TCTD Intercity Service Enhancement Plan as ridership, farebox recovery, and funding allows.

Short-Term Actions

- **Complete a TCTD Intercity Service Enhancement Plan** to understand the operational feasibility of the following service enhancements:

- **Route 3 connection to Sunset Empire Transportation District.** The Sunset Empire Transit District (SETD) LRTCP includes a service recommendation to enhance connections in Cannon Beach and Manzanita by assigning one district to manage operations between the two cities. At present, Route 3 provides three connections to SETD, one in Manzanita and two in Cannon Beach. With increased coordination, Route 3 could provide up to four connections with SETD. *This would implement part of Service Alternative 3A and would cost approximately \$73,000 per year based on an additional 4-hour driver block and could require the purchase of an additional bus.*
- **Route 4 connections to Lincoln County Transportation Service District.** Improve reliability and connectivity with Lincoln County Transportation Service District.
- **Route 5 connections to Greyhound's inbound/outbound services.** In an effort to interline with Greyhound services based in Portland, TCTD and Greyhound have drafted an interline agreement, which would allow Greyhound passengers to begin or complete their trip via Route 5, using a single ticket. This interline agreement proposes a combination of schedule adjustment and a possible service extension of Route 5 to provide up to four Greyhound connections per day. *The cost of additional services and fleet requirements will be determined in the Enhancement Plan.*
- **Route 6 connections to TCTD, Lincoln County Transportation Service District, Yamhill County Transit, and Salem Keizer Transit District.** Route 6 improvements should include aligning schedules with Salem-Keizer Transit, which now operates a connection from their downtown transit center to the greyhound and station on 30-minute headways. A feasibility and operations analysis will be conducted as part of the TCTD Intercity Service Enhancement Plan. Another potential consideration is coordinating the Route 6 Coastal Connector with the YCTA services that provide seven round trips per day between both Grand Ronde Community Center and Spirit Mountain East Entrance to McMinnville. From McMinnville there are more connections to Hillsboro (MAX), Newberg, Sherwood, Tigard, and West Salem. *This could be no cost if only results in schedule changes but two additional connections could be possible for approximately \$74,000 per year based on an additional 4-hour driver block and could require the purchase of an additional bus. Changes to Route 6 need to be coordinated with Route 4 and could be implemented with some of the Route 4 service alternatives.*
- **Implement recommendations from the TCTD Intercity Service Enhancement Plan** that can be implemented without significant impacts to TCTD's budget. *Some enhancements may have potential funding opportunities that would not impact TCTD.*
- **Analyze and implement recommendations from the Cape Kiwanda Master Plan for Tourism Facilities.** Throughout the on-going planning process, stakeholders and community members have expressed interest in exploring the feasibility of TCTD operating a seasonal shuttle service to serve Pacific City on the weekends during peak summer months.

- **Modify Route 3** to better serve Nehalem by adding a stop at the United Methodist Church and North Coast Recreation District. In conjunction, modify Route 3 to replace flag stops through Rockaway Beach for a 3-mile zone with designated stops every ¼ to ½ mile, with an emphasis on stop location near relatively long side streets.
- **Dial-a-Ride.** Market NW Rides as a county-wide transportation service and Dial-A-Ride services as a single zone system to eliminate customer confusion. Expand NW Rides to accommodate private pay clients in addition to Medicaid clients, and expand NW Rides services to provide stretcher service for both Medicaid and private pay clients..

Mid-term Actions

Chapter 6 includes all of the service alternatives considered in the alternatives analysis. Table 20 below shows how all of the alternatives rate against their counterpart. The rating system is color-coded as such:

- ● – Negative impact on the given criteria
- ● – Net-zero impact on the given criteria
- ● – Positive impact on the given criteria

Each of alternatives are viable but could be impacted on the outcome of the TCTD Intercity Service Enhancement Plan, particularly with Alternative 3A (providing an additional trip per day on Route 2 and Route 3) and Route 4 Alternatives (which largely all rely on an additional daily driver block with variations on how Pacific City is best served and service between Tillamook and Lincoln City are connections to Route 6 are improved).

An on-board customer survey was conducted and the following customer preferences were identified:

- Route 1 – Town Loop
 - Strong support for reducing headways by adding another bus.
 - Strong support for the additional bus to operate in the reverse direction.
 - Strong support for the additional bus to serve the Port of Tillamook Bay in-lieu of traveling north on Highway 101. *This is a notable conclusion as Port of Tillamook Bay is not currently served by transit and people riding the bus to this location were not represented in the survey.*
- Route 2 and 3
 - Strong support for an additional trip each day.
- Route 4
 - Strong support for providing direct service between Tillamook and Lincoln County and not diverting to Pacific City.
 - Strong support for having a connection to Pacific City through Sandlake.
 - Low support for serving Port of Tillamook Bay with this route. *This is a notable conclusion as there was strong support for serving the Port of Tillamook Bay with Route 1. This is likely due to the fact that an extension of Route 1 would not inconvenience passengers traveling through to another destination like it would on Route 4.*

Table 20: Alternatives Prioritization Analysis

Route Alternatives	Description	Criteria				
		Revenue operating hours ¹	Cost ²	Ridership/Service Area ³	Reliability ⁴	Impact to Existing Users ⁵
1A	Reduce headways from 60- to 30-minutes by running one additional bus.	●	●	●	●	●
1B	Add an additional Town Loop route that serves Port of Tillamook Bay in lieu of traveling north on Highway 101.	●	●	●	●	●
1C	Add an additional Town Loop route that serves Port of Tillamook Bay in lieu of traveling north on Highway 101, and travels in opposite direction.	●	●	●	●	●
3A	New driver block that serves Route 2 twice a day and Route 3 three times a day, to fill morning and afternoon headway gaps for each route.	●	●	●	●	●
3B	Modify Route 3 to better serve Nehalem by adding a stop along Highway 101 to serve existing deviations. In conjunction, modify Route 3 to replace flag stops through Rockaway Beach for a 3-mile zone with designated stops	●	●	●	●	●
4A	Modify existing Route 4 to serve existing Pacific City loop and proposed Port of Tillamook Bay loop every other run.	●	●	●	●	●
4B	Create new route that serves Pacific City and Tillamook and provides service through Sandlake Road.	●	●	●	●	●
4Ca	Eliminate existing Pacific City loop and add Port of Tillamook Bay loop	●	● (4A must be implemented in coordination with 4Ca)	●	●	●
4Cb	Eliminate existing Pacific City loop and add Port of Tillamook Bay loop at end of run between Tillamook and Lincoln City.	●	● (4A must be implemented in coordination with 4Cb)	●	●	●
4Cc	Eliminate existing Pacific City loop and add 5 th run Route 4 to Lincoln City (reduce headways to 3-3.5 hours, rather than 4 hours) – extra 1-2 service hours per day	●	● (4A must be implemented in coordination with 4Cc)	●	●	●
4D	Add new bus to reduce headways by a factor of two between Tillamook and Lincoln City	●	●	●	●	●

¹ ● = significant increase in travel time; ● = moderate increase in travel time; ● = no increase to travel time

² ● = significant increase in cost; ● = moderate increase in cost; ● = no increase to cost

³ ● = reduces existing service area; ● = does not change existing service area; ● = increases existing service area or provides additional headways which may increase ridership

⁴ ● = negatively impacts reliability; ● = does not change reliability status quo; ● = improves reliability

⁵ ● = negatively impacts existing users; ● = does not impact existing users; ● = improves service for existing users

Capital Strategies

The following describes short-term and mid-term actions for capital enhancements including vehicle fleet and transit facility actions.

Vehicle Fleet

TCTD’s vehicle replacement needs by year for the next five years are shown in Table 21 below. The Intercity Transit Enhancement Plan will identify if additional buses are needed to support feasible near-term actions. TCTD should begin replacing existing Category B buses with Category A buses. Table 21 reflects the first Category A replacements to occur in FY 18/19.

Table 21. Cost of Vehicle Replacement by Fiscal Year

	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20
Total Cost (\$)	335,000	160,000	333,836	1,215,297	905,126
Federal/State Funding (\$)	270,230	128,719	300,452	972,238	724,101
Local Match (\$)	64,770	31,281	33,384	243,059	181,025
Vehicles Replaced	4	3	3	6	3

Source: TCTD

In the long-term, TCTD could require three or more additional buses to increase service on several routes and should develop a long range fleet financing plan. The plan should include both a replacement schedule of existing buses as they reach the end of their useful life, as well as possible fleet expansion to accommodate service growth. The fleet plan should also address the types of vehicle to be purchased, as follows:

- Medium-sized (approximately 30 to 32-foot) buses for the fixed-route service; and
- Mini-vans or small bus for the Dial-a-Ride service

Fleet standardization can accomplish greater flexibility in vehicle assignments, reduce the need for spare vehicles, and reduce maintenance costs. A more standardized fleet reduces parts inventory and enables mechanics to repair buses more efficiently. In addition, TCTD should purchase vehicles in larger batches to smooth-out the age of the fleet and reduce maintenance expenses. However, the funding realities for Oregon rural transit capital programs is a barrier to purchasing larger batches of vehicles; as such, TCTD’s fleet financing plan is contingent upon ODOT’s ability to fund Oregon’s rural transit programs.

Facilities

The facilities plan includes actions to improve transit stops, increase park-and-ride opportunities, upgrade dispatch software, increase security surveillance, and to conduct facility repair.

- Provide shelters at the following stop locations:
 - Oceanside
 - Tillamook Post Office
 - Tillamook Bay Community College – Rural Partners Building
 - Cloverdale Wayside
 - Cloverdale Health Clinic
 - Hoquarton Interpretive Center
 - Goodspeed Park
 - Garibaldi City Hall

Exhibit 14. Existing bus shelter



- Provide a bus stop sign and pole at the converted flag stops along Route 3 through Rockaway.

- Establish agreements with local business and community organizations such as the Kiawanda Community Center and Fred Meyer to allow use of several spaces for park-and-ride.
- Explore enhanced dispatch software alternatives to allow expansion of Dial-a-Ride services to accept private pay customers for out of County trips under the NW Rides brand and allow for on demand scheduling.
- Explore options for implementing a security system that meet's TCTD's specific needs. Security systems provide documentation of criminal acts and can also be used to absolve the transit agency of fault in litigation involving passenger incidents. CCTV can be used to enhance safety and security at transit centers.
- Implement the TCTD Facility Repair and Renovation Project to address roof repair, HVAC repair and replacement, office renovation, generator installation, and parking lot repavement.

Other Revenue: Other revenue includes interest earned and other miscellaneous revenue sources. Other revenue is assumed to remain constant throughout the forecast years.

8.3–FINANCIAL PLAN

The financial plan reflected in Table 22 represents the baseline financial assessment for the 20-year horizon. Revenue sources are often restricted to expenditure types, either operating or capital; as such, the financial plan is organized by operating and capital costs and revenues. The baseline financial analysis allows TCTD to understand the magnitude of the net surplus given no changes to service operations. The financial plan does include fleet replacement over the next five years plus an annual budget for additional capital purchases and other capital and infrastructure. The following describes some of the assumptions for future revenues.

- **Property Tax:** TCTD collects a tax with a millage rate of 20 cents per 1,000 dollars of assessed property values. The forecast property tax is based on an annual increase of three percent of total existing property taxes and the additional property taxes from anticipated housing growth in the county.
- **Farebox Revenue:** Farebox revenue growth is proportional to estimated population growth in the county, but does not assume any change in the existing fare structure.
- **State/Federal Grants:** State/Federal grants have varied widely since the 2008-2009 fiscal year. Figure 10 shows the historical grant revenue, between fiscal years 2008-2009 and 2015-2016, and the logarithmic extrapolation assuming the historical variation in grant revenue.
- **Mass Transit Tax:** The mass transit tax is a payroll tax allocated by the state. The mass transit tax has remained at \$80,000 for the last three fiscal years. As such, the forecast assumed no change to the mass transit tax revenue.
- **Timber Revenue:** Timber revenue contributes approximately seven percent of the total TCTD budget for fiscal year 2014-2015. Based on anticipated timber sales and federal mandates, timber revenue is assumed to remain constant at \$175,000 revenue.

Table 22. Financial Plan (10-Year Horizon)

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Costs												
Regular DAR - Maintain Existing	238,556	243,923	249,412	255,023	260,761	266,628	272,628	278,762	285,034	291,447	298,005	304,710
NW Rides - Maintain Existing	224,488	229,539	234,704	239,985	245,385	250,906	256,551	262,323	268,226	274,261	280,432	286,741
Fixed Route - Maintain Existing	856,869	876,148	895,862	916,018	936,629	957,703	979,251	1,001,285	1,023,813	1,046,849	1,070,403	1,094,487
Intercity - Maintain Existing	325,934	333,268	340,766	348,433	356,273	364,289	372,486	380,867	389,436	398,199	407,158	416,319
Other - Maintain Existing	15,312	15,657	16,009	16,369	16,737	17,114	17,499	17,893	18,295	18,707	19,128	19,558
Replace Existing Fleet	0	335,000	160,000	333,836	1,215,297	905,126	104,372	190,190	164,484	1,655,991	0	1,167,750
Other Capital/Infrastructure	398,836	398,836	398,836	398,836	398,836	398,836	398,836	398,836	398,836	398,836	398,836	398,836
Total Costs	2,059,995	2,432,371	2,295,589	2,508,501	3,429,919	3,160,603	2,401,623	2,530,156	2,548,125	4,084,290	2,473,962	3,688,402
Revenues												
Fare	265,600	270,000	272,155	274,327	276,517	278,724	280,776	282,939	285,119	287,316	289,530	291,593
Operating Grants	612,568	656,296	519,304	521,343	523,188	524,873	526,422	527,857	529,192	530,442	531,615	532,722
Mass Transit Tax	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Timber Revenue	200,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000
Property Tax	867,310	878,256	911,446	945,893	981,645	1,018,751	1,056,644	1,096,305	1,137,459	1,180,161	1,224,470	1,269,749
Contract Revenue	228,000	398,597	398,597	398,597	398,597	398,597	398,597	398,597	398,597	398,597	398,597	398,597
Other	799,136	775,586	775,586	775,586	775,586	775,586	775,586	775,586	775,586	775,586	775,586	775,586
Capital Grants (State/Federal)	66,500	285,265	344,422	352,255	359,340	365,808	371,758	377,267	382,396	387,194	391,700	395,949
Total Revenues	3,119,114	3,519,000	3,476,510	3,523,002	3,569,873	3,617,339	3,664,783	3,713,552	3,763,350	3,814,296	3,866,499	3,919,197
Cost/Revenue Summary												
Total Costs	2,059,995	2,432,371	2,295,589	2,508,501	3,429,919	3,160,603	2,401,623	2,530,156	2,548,125	4,084,290	2,473,962	3,688,402
Total Revenues	3,119,114	3,519,000	3,476,510	3,523,002	3,569,873	3,617,339	3,664,783	3,713,552	3,763,350	3,814,296	3,866,499	3,919,197
Surplus/Shortfall	1,059,119	1,086,629	1,180,922	1,014,500	139,955	456,736	1,263,159	1,183,396	1,215,225	-269,994	1,392,537	230,795

8.4—MONITORING PROGRAM

The following section provides a program to track performance and success of the short- and mid-term recommendations. The program is data-driven and is founded on performance measures that can be tracked on a monthly, quarterly, or annual basis through set benchmarks. This program enables a dynamic system where service adjustments can be implemented and justified following performance evaluations.

Characteristics of an Effective Performance Measurement System

There are several key characteristics that were considered in developing an effective performance measurement system for TCTD. They include:

- **Clarity:** Performance measures should be easily understood by their intended audiences. These audiences should understand how and why a specific performance measure is relevant to the District's goals. Furthermore, the performance measure results should be presented in a format that is easily discerned, such as graphs and infographics.
- **Reliability and credibility:** The reliability and credibility of performance measures is directly dependent on the quality of data used to develop the measures. Appropriate training and quality control should be practiced to minimize data errors, so the District can rely on the data to support decision-making and goal-setting and the District's stakeholders will perceive the data as credible.
- **Variety of measures:** Performance measures should address a variety of issues that match issues important to the District's stakeholders, which include customers, the District board and management, state and federal grant providers, and the community at large. Consequently, the performance

measure package should not focus on just one metric or type of metric, such as economic performance.

- **Number of measures:** While a variety of measures is important to gain a holistic view of service performance, the variety of measures should be balanced with the resources available for data collection and the need to provide clarity by avoiding overwhelming audiences with too many measures.
- **Realism of goals and targets:** Goals and targets for individual measures should be realistic, but should also be ambitious to encourage continuous agency improvement.

TCTD-Specific Performance Measures

The performance measures proposed for the District are described in this section, organized into the following topic areas: system productivity, economic performance, maintenance, and customer experience. As the District already must report some performance measures each year for inclusion in the rural National Transit Database (NTD), these measures were used, when feasible, to minimize the District's new data-collection needs and to allow the District to compare its performance with those of peer agencies.

System Productivity

- **Passengers per Service Hour:** provides an indication of how well vehicle resources are being used. Service hours (also known as vehicle hours) include deadhead time (e.g., traveling from the bus yard to the start of a route).
- **Passengers per Service Mile:** also provides an indication of how well vehicle resources are being used. As TCTD operates a deviated-fixed route service, service miles are not fixed, unlike a pure fixed-route service.
- **Total Passenger Miles** describes the mobility provided by the service. In order to calculate this measure, data are

needed on how many people are on board the bus between each bus stop, as well as the distance between each bus stop. As obtaining this information requires either on-board surveys on a sample of trips or automated equipment that record passenger boardings and alightings by location, this measure can be costly to calculate. In the near-term, total passenger miles may be most feasible as an ad hoc measure.

Economic Performance

- **Total Cost per Passenger** is one of the core indicators of a transit system's overall performance. Intuitively, this cost-effectiveness metric declines as ridership increases; however, this correlation is not always true for demand-responsive service as each additional passenger often increases service hours and miles, thereby increasing total cost. Improved scheduling efficiencies for demand-responsive service, such as passenger grouping, can increase ridership without increasing the total cost for demand-responsive service.
- **Farebox Recovery** is calculated by dividing fare revenue by total operating cost, and reflects a policy balance between an affordable service and a self-sustaining service (which cannot be expected in a rural setting or, for that matter, in most urban situations).
- **Total Cost per Service Hour** is one of a transit system's key cost-efficiency indicators. It is used to estimate the cost of adding service hours and, over time, to compare how the agency's costs are increasing relative to inflation. It is particularly sensitive to changes in an agency's labor costs.
- **Total Cost per Service Mile** is another key cost-efficiency indicator. This measure is more affected by changes in fuel costs and traffic congestion that slows down buses than is cost per service hour.

Maintenance

- **Number of Vehicle Breakdowns** can be used to justify maintenance and capital expenditures, such as an on-site mechanic and fleet replacement.
- **Maintenance Cost per Vehicle** is also used to justify the need to replace an aging fleet, as well as to compare the relative maintenance costs of different vehicle models.

Customer Experience

- **Number of Missed Connections with Coordinated Transit Systems** can be used to identify the need for schedule changes to improve connection reliability. The establishment of the North by Northwest Connector Alliance (NWOTA) points to a mutual goal to provide effective and reliable service between counties.
- **Number of Customer Complaints and Compliments** can be used as a general indicator of customer satisfaction; tracking by topic area can provide additional detail. TCTD should develop a system by which customers can easily provide feedback.

In addition to the performance measures summarized above, TCTD should consider performance measures specific to dial-a-ride service, including on-time performance and schedule request times.

TCTD-Specific Benchmarks

This section provides benchmarks for those performance measures for which TCTD has available data. In parallel to existing practice and industry best-practices, the benchmarks were developed by service type, including dial-a-ride, for both NW Rides and regular DAR, deviated-fixed routes (i.e., routes 1, 2, 3, 4), intercity routes (i.e., routes 5 and 6), and other services, including special bus operations (SBO).

Two benchmarks were developed by calculating the annual average for fiscal years 2013/2014 and 2014/2015 of the respective performance measure values. Table X includes the performance measure type, the benchmark, the type of service, the goal (i.e., increase or decrease performance measure value, and the timeframe for monitoring.

Table 23. Performance Measures and Benchmarks

	Benchmarks	DAR	NW Rides	Deviated-Fixed Route	Intercity	Other Services	Goal	Timeframe
System Productivity	Passengers per Service Hour							
	FY 13/14 Average	1.35	0.60	6.10	3.11	9.72	+	Monthly/Quarterly/Annually
	FY 14/15 Average	1.56	0.55	5.78	2.58	6.75		
	Passengers per Service Mile							
	FY 13/14 Average	0.10	0.03	0.27	0.10	1.38	+	Monthly/Quarterly/Annually
	FY 14/15 Average	0.10	0.02	0.26	0.09	1.00		
Total Passenger Miles								
Baseline	Reference Table 24						+	Ad Hoc
Economic Performance	Total Cost per Passenger							
	FY 13/14 Average	35.27	105.13	12.15	26.55	5.30	-	Monthly/Quarterly/Annually
	FY 14/15 Average	24.65	100.36	10.16	25.29	5.49		
	Farebox Recovery							
	FY 13/14 Average	15%	52%	13%	33%	30%	+	Monthly/Quarterly/Annually
	FY 14/15 Average	34%	81%	12%	33%	29%		
	Total Cost per Service Hour							
	FY 13/14 Average	47.69	63.17	74.15	82.53	51.50	-	Monthly/Quarterly/Annually
	FY 14/15 Average	38.57	54.97	58.68	65.18	37.04		
	Total Cost per Service Mile							
FY 13/14 Average	3.46	3.02	3.31	2.78	7.32	-	Monthly/Quarterly/Annually	
FY 14/15 Average	2.43	2.15	2.64	2.20	5.51			
Maintenance	Number of Vehicle Breakdowns ¹							
	Baseline	-	-	-	-	-	-	Monthly/Quarterly/Annually
	Maintenance Cost per Vehicle ²							
	FY 13/14 Average	742	742	742	742	742	-	Monthly/Quarterly/Annually
FY 14/15 Average	419	419	419	419	419			
Customer Experience	Number of Missed Connections with Coordinated Transit Systems ³							
	Baseline	-	-	-	-	-	-	Monthly/Quarterly/Annually
	Number of Customer Complaints and Compliments ⁴							
Baseline	-	-	-	-	-	-	+	Quarterly/Annually

¹ TCTD does not currently have data to inform a benchmark or trend but should implement one and monitor for a decrease over time or use the data to inform decisions on maintenance and fleet replacement.

² Reflects costs associated with account # 5340

³ TCTD does not currently have data to inform a benchmark or trend but should implement one and monitor for a decrease over time.

⁴ TCTD does not current keep track of customer complaints and compliments; however, with more of an online presence, TCTD can track more easily. An increase in number of customer complaints and compliments suggests increased public exposure.

Table 24 shows the passenger miles for each deviated-fixed and intercity route. The total passenger miles and passenger miles per passenger can serve as the baseline benchmarks for TCTD moving forward.

Table 24. Passenger Miles¹

	Total Passenger Miles ¹	Passenger Miles per Passenger ²
1	592	3.15
2	2,775	111.16
3	8,840	50.65
4	7,730	124.41
5	7,382	134.10
6	382	25.26
Total	27,700	51.78

Source: Customer Survey #1, September 2014

¹ Reported passenger miles represent one week of collected data

The performance measures and calculated benchmarks are likely to evolve. A systemic and holistic performance evaluation and appropriate benchmarks for set performance measures are critical inputs for TCTD to justify service improvements in the District. In order to develop realistic, credible, and accepted benchmarks, TCTD should consider the following:

- Performance measures should be linked to District and community goals. The benchmarks developed can guide TCTD through goal-setting and inform where service can be improved.
- The TCTD board and community stakeholders must accept the performance measures and associated benchmarks in order to have long-term viability.
- Data accuracy and reliability is important in performance evaluation and in setting benchmarks. Superimposing monthly data on a trend analysis graph can help identify where data errors have occurred.

Monitoring Program Application Example

This section provides an example of how the monitoring program developed can be applied and evaluated. Exhibit 15 and Exhibit 16 show the two system productivity performance measures, Passengers per Service Hour and Passengers per Service Mile respectively. The dashed horizontal lines represent the benchmarks summarized in Table 23. The larger dashed lines represent FY 13/14 while the smaller dashed lines represent FY 14/15.

Exhibit 15. Passenger per Service Hour

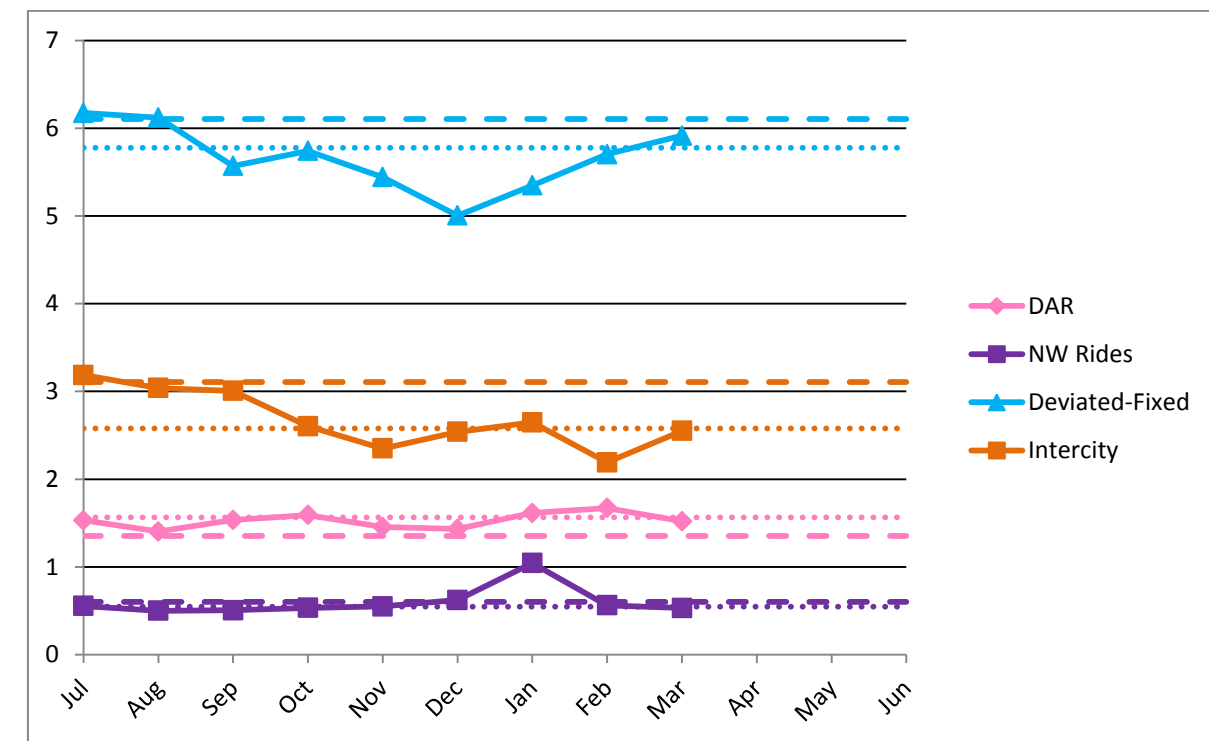


Exhibit 16. Passenger per Service Mile

