JUNE 27TH, 2018

DATA-DRIVEN TRANSIT PLANNING IN RURAL OREGON

2018 ITE JOINT WESTERN DISTRICT AND TEXAS DISTRICT MEETING

KRISTA PURSER

Why does this matter?

- Serve Communities, Increase Opportunities
  - Increase in data informs planning
  - Increase in technology informs riders
  - Increase in both creates equitably, economically, and environmentally sustainable communities

Presentation Overview

- Existing Systems: Lincoln County
  - What works today? What doesn't work?
  - How would changes impact community members?
  - What resources (operating costs, capital costs, staff, bus drivers) would that take?
- New Systems: The Dalles
  - Where are our population and employment densities now? In the future?
  - What do similar systems cost? Where's funding coming from?
  - What routes can reach the high-priority locations? Where can't the bus drive?
  - What ridership can we expect?
  - How do cities implement the system?

Existing System Routing

Case Study: Lincoln County, Oregon

- Population 46,000
- Fixed-route, dial-a-ride, regional
  - 2 city loops
  - 2 city dial-a-ride
  - 3 county routes
  - 2 regional connectors

Questions to Ask

- Capturing more or less people?
- Missing any stops?
- Transfers?

Existing

Route	¼ Mile Capture		½ Mile Capture		¾ Mile Capture	
	Population	Employment	Population	Employment	Population	Employment
North Route	5,087	6,280	11,955	10,257	15,210	11,553
South Route	1,450	3,268	4,332	5,289	5,910	6,129
East County	2,854	4,661	6,713	6,407	8,746	7,207
Newport City Loop	4,932	6,220	6,584	6,828	7,350	6,969
Lincoln City Loop	3,383	3,908	6,221	4,732	7,404	4,782
Total LCTSD Service[1]	**11,619**	**17,506**	**28,911**	**29,231**	**45,953**	**39,624**

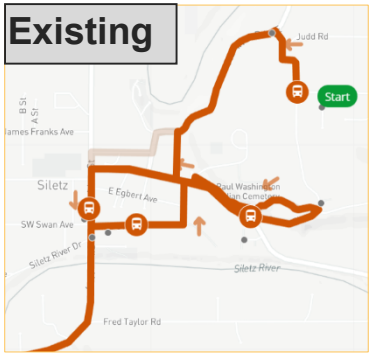
Projected

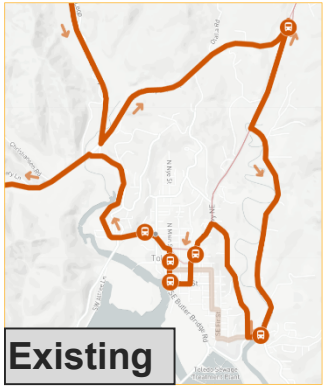
Scenario	Operating Cost	Miles	Population Capture	Employment Capture	Total Capture	Ridership	Ridership/ Capture Ratio	Cost/Rider
Existing Route	$358,336	51	2833	4649	7482	50,835	**6.79**	$ 7.05
Modified Route	$350,800	50	3504	4867	8371	56,875		$ 6.17

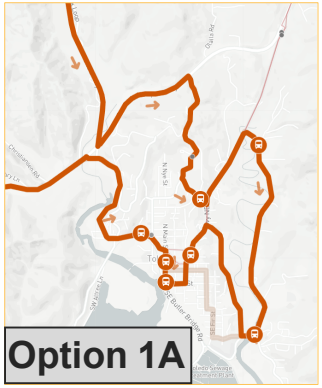
Routing Efficiencies

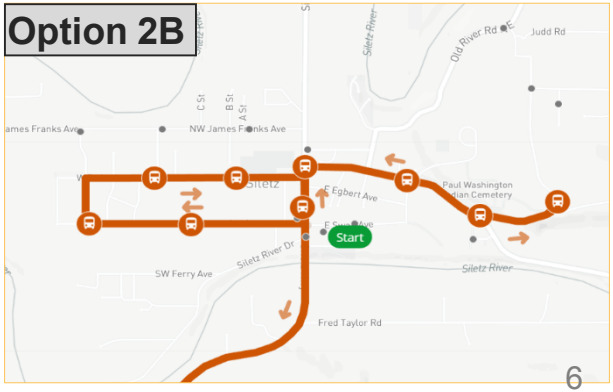
- Do changes align with community need?
- When are these changes needed?

East County Route Options



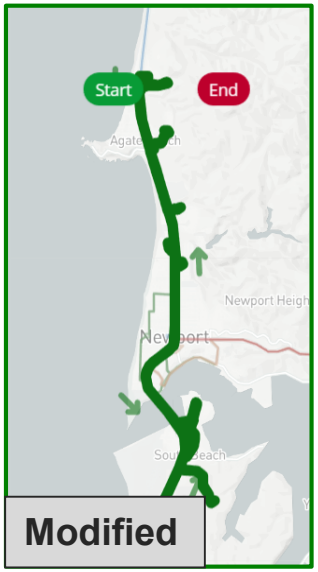


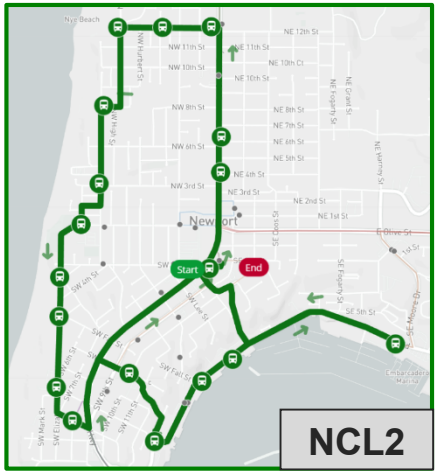




Tsunamis & Tourists

Newport City Loop Route





Communicating Need

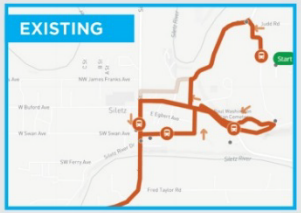
- Identify impacts to range of criteria

SERVICE ALTERNATIVES

Lincoln County OREGON

EAST COUNTY ROUTE Alternative EC1

EXISTING



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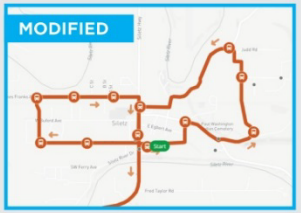


Justification

This change would provide an opportunity to meet needs for shopping, pharmacy, and banking trips, as well as provide a means to travel to work at these locations and other businesses in the northern part of Newport without needing a transfer at City Hall or a one-mile walk. In addition, this change would provide an easier way to get into Newport and points south for residents of the Little Creek apartments. The overarching theme is the regularity of the service and the elimination of the need to make special stop requests or to get picked up from these locations.

Revenue operating hours

This alternative assumes that buses would continue to serve the same stop locations as the existing route, with the addition of always serving the Fred Meyer and Wal-Mart stops. Under this assumption, the travel time of the five daily routes that currently serve the Fred Meyer/Wal-Mart stops by request only would equal the travel time from Newport City Hall and back (approximately 24 minutes for each run). This would increase the operating hours by a total of two hours per day (5 runs × 24 minutes per run).

Cost

Based on the additional travel time, the operating cost for this additional service is approximately $117/day and $36,500/year.

Ridership and Service Area

The addition of the Fred Meyer/Wal-Mart stops to the regular schedule for each run would not increase the areas or populations served. As the additional bus would reduce the need to transfer or walk during most of the day, it would be easier and more convenient for people to reach those destinations throughout the day.

Reliability

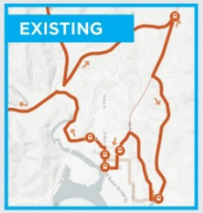
Some potential negative impact to reliability because the route would be lengthened. Reliability would be improved for those who would use the service as there would be no need to request pick-up.

Impacts to Existing Users

Existing users would be better served with more frequent service.

EAST COUNTY ROUTE Alternative EC2

EXISTING



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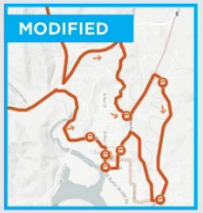


Justification

New roadways in Siletz and development in Toledo provide the potential for better routing on the East County Route.

Revenue operating hours

Changes to the route would save approximately 200 annual revenue operating hours.

Cost

Routing changes would decrease mileage and time, decreasing costs by approximately $38/day or $11,800/year.2

Ridership and Service Area

Siletz service area is expanded and Toledo service area is modified, capturing more employment and population.

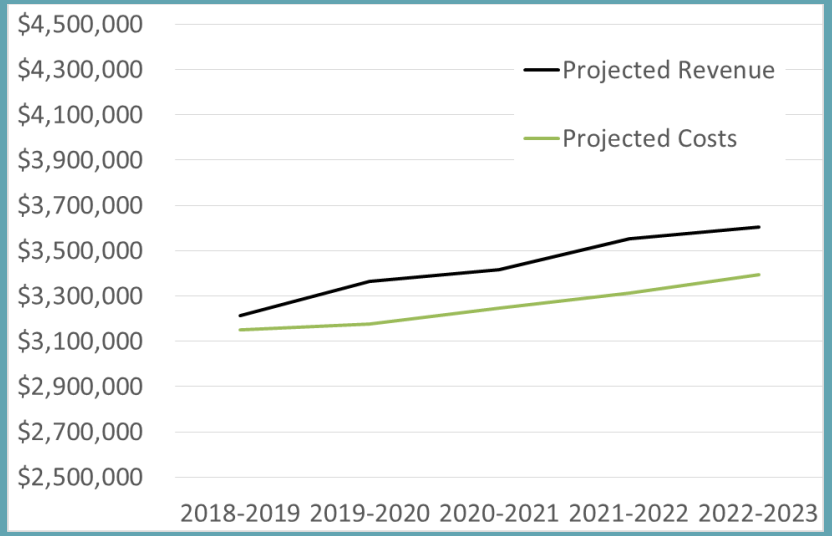
Reliability

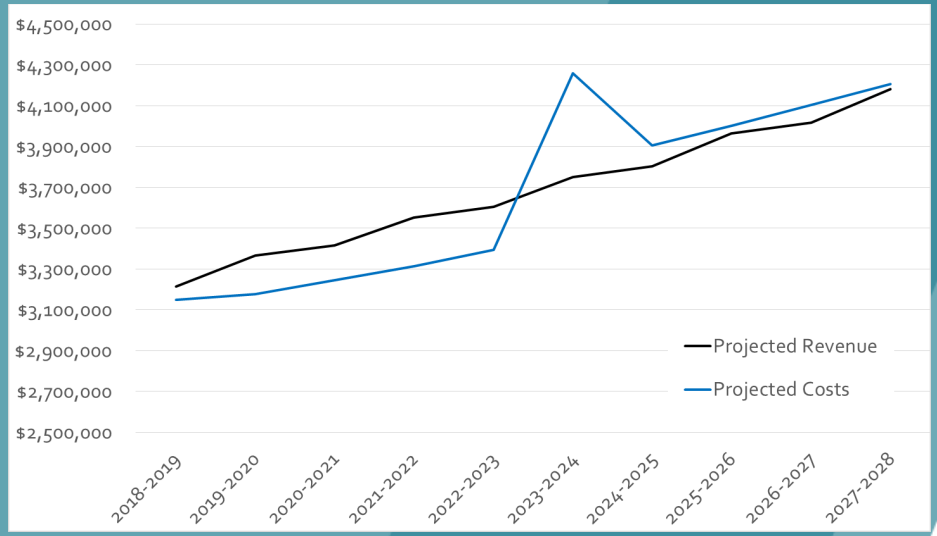
Reduced route mileage would improve reliability.

Impacts to Existing Users

May change route scheduling, with potential to cause confusion after route changes. In the long-term, improvements to reliability and increased amenities near bus stops would benefit existing users.

Impacts & Costs

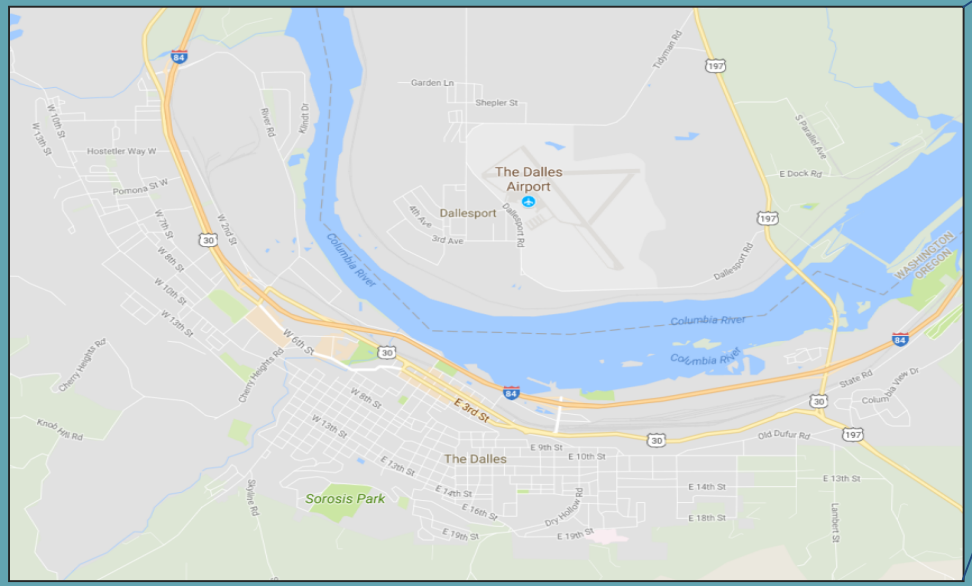


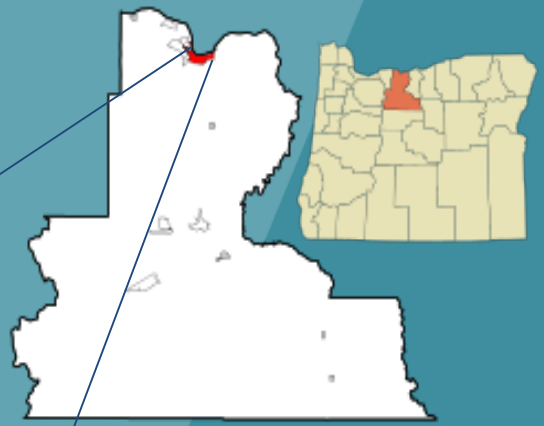


- Projecting Costs
  - Identified impacts of increased mileage and fleet turnover
  - Understanding need for partnership, grant funding, etc.
  - Tools for performance measurement and financial tracking

New Systems – The Dalles

- Wasco County
- Population - 15,000
- Dial-a-ride and regional transit



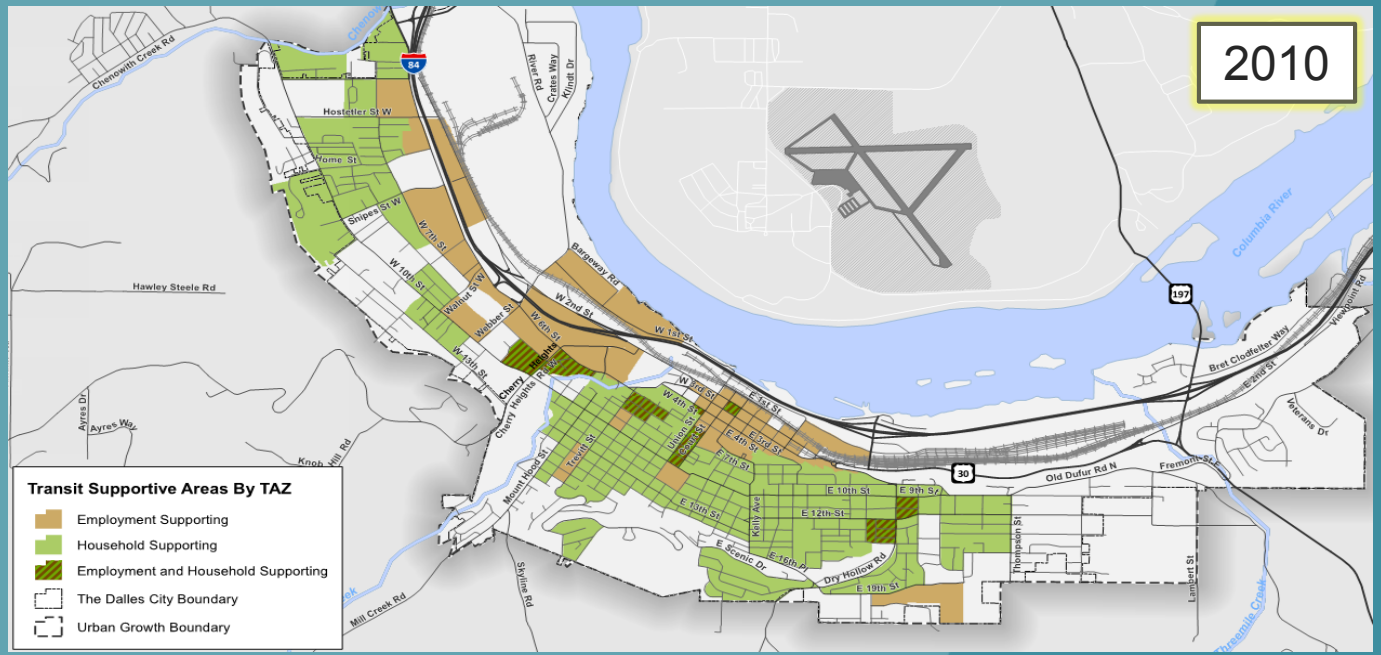


Key Destinations

1) Transit Center
2) 6th Street Shopping
3) Downtown
4) Lone Pine Region
5) Veteran's Affairs*
6) Columbia Gorge Community College
7) Mid-Columbia Medical Center

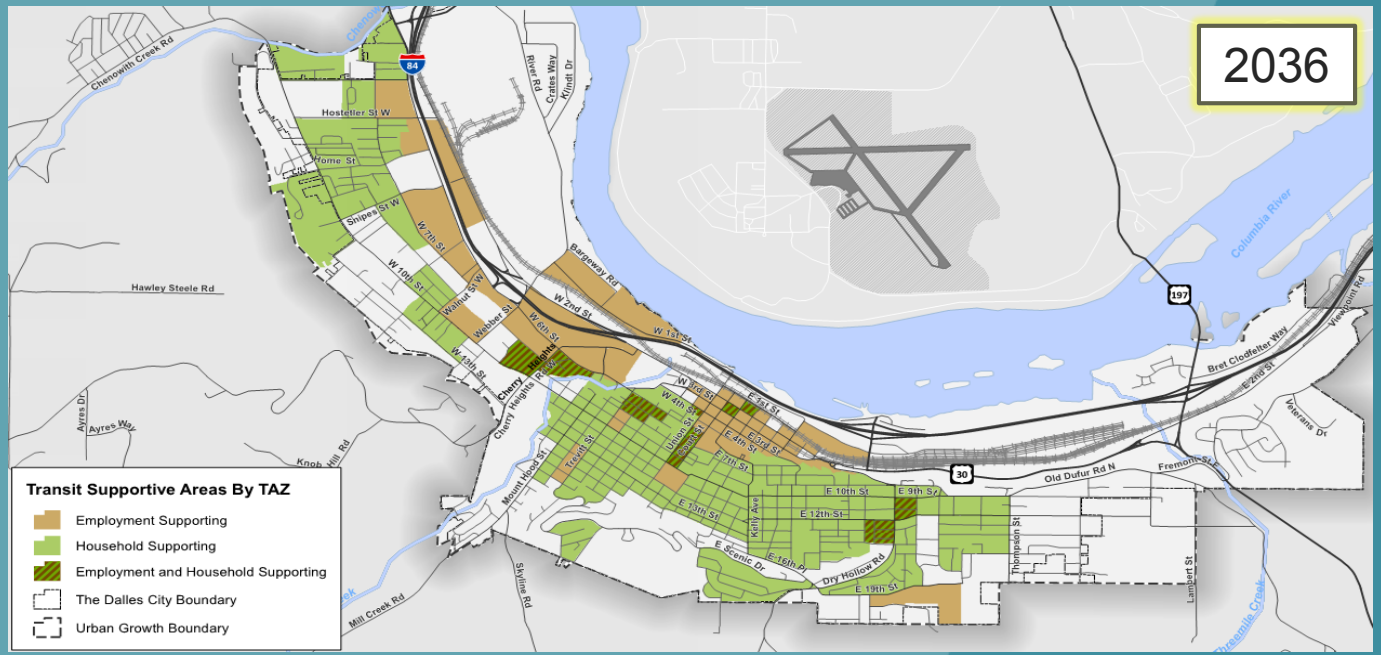
Transit-Supportive Densities 2010

- Population density of 3 households/gross acre or more; or,
- Job density of 4 employees/gross acre.



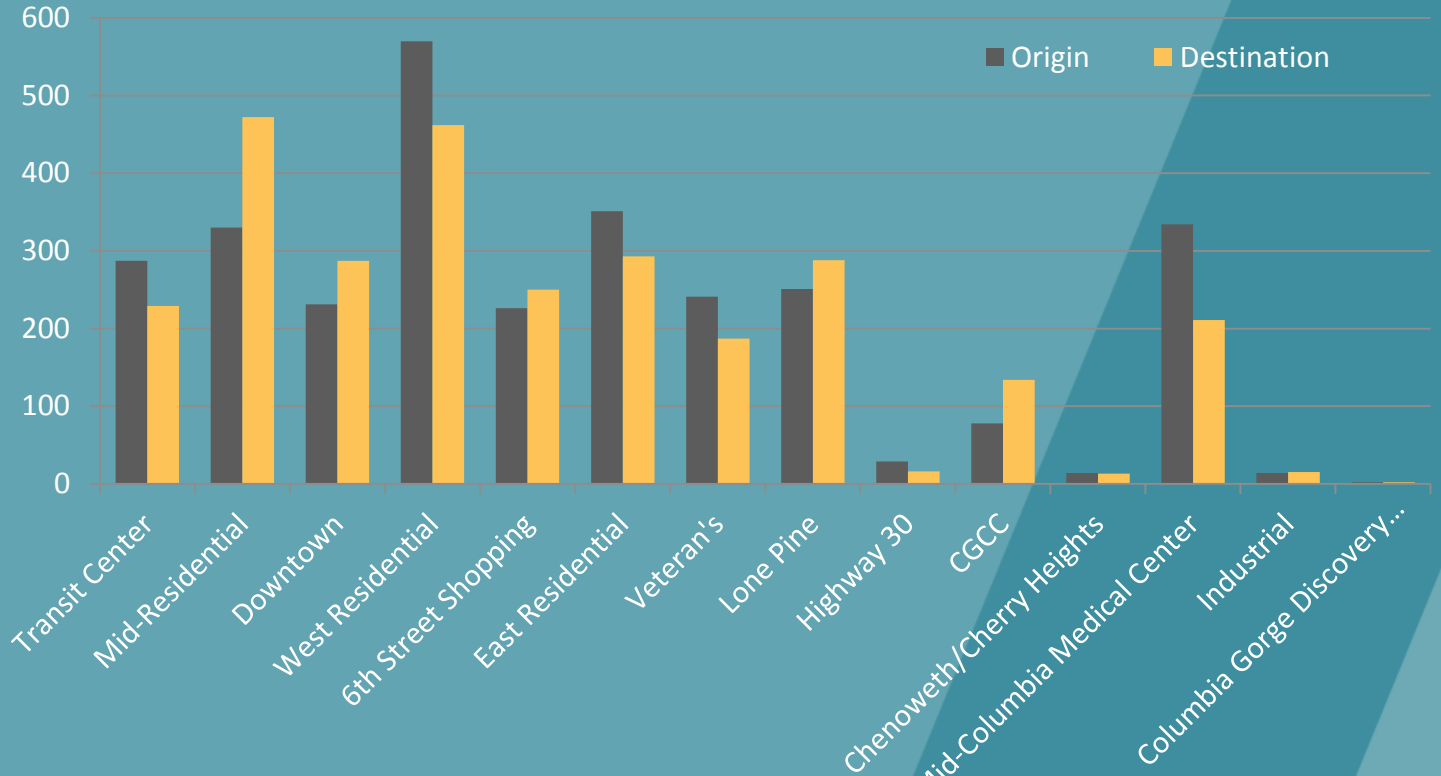
Transit-Supportive Densities 2036

- Population density of 3 households/gross acre or more; or,
- Job density of 4 employees/gross acre.



LINK (Dial-a-Ride) Findings

- Origins and Destinations



CAT (Regional) Findings

The Dalles to Hood River

- 3 buses/day between The Dalles and Hood River
- 2 buses/week between The Dalles, Hood River, and Portland
- Approx. 3.5 rides/hour on intercity CAT services
- Strong commute pattern to/from Hood River
- Survey results:
  - Range of trip purpose, age, income status, and employment status
  - Mix of choice and captive riders
  - Potential first-mile last-mile issues

Cost & Funding Assumptions

- $500,000 per 40-foot bus[1]
  - Oregon 2015-2018 STIP shows an average $350,000 STIP funding for bus purchases
  - ~$150,000 local match per 40-foot bus
- $70/hour operating cost[2]
  - Similar agencies by region and services provided
- Funding Sources
  - State Programs
  - Federal Funding
  - Local taxes, advertising, parking meters/fines

[1] APTA 2016 Public Transportation Vehicle Database

[2] Rural Integrated National Transit Database

Ridership Estimation

- Methodology – TCRP 161
  - College enrollment, population, and annual revenue-hours
  - Example for following service:
    - 6:00 a.m. to 7:00 p.m. on weekdays
    - 8:00 a.m. to 6:00 p.m. on weekends

Alternative	Number of Routes	Headways (minutes)	Days per Week	Annual Revenue-Hours per Route	TCRP 161 Estimated Ridership
1	1	60	5	3,315	34,800
			6	3,865	37,900
			7	4,415	41,100
2	2	60	5	6,630	53,900
			6	7,730	60,300
			7	8,830	66,600
3	3	60	5	9,945	73,000
			6	11,595	82,600
			7	13,220	91,900

Comparison to Similar Systems

- Comparison to Small Oregon Cities

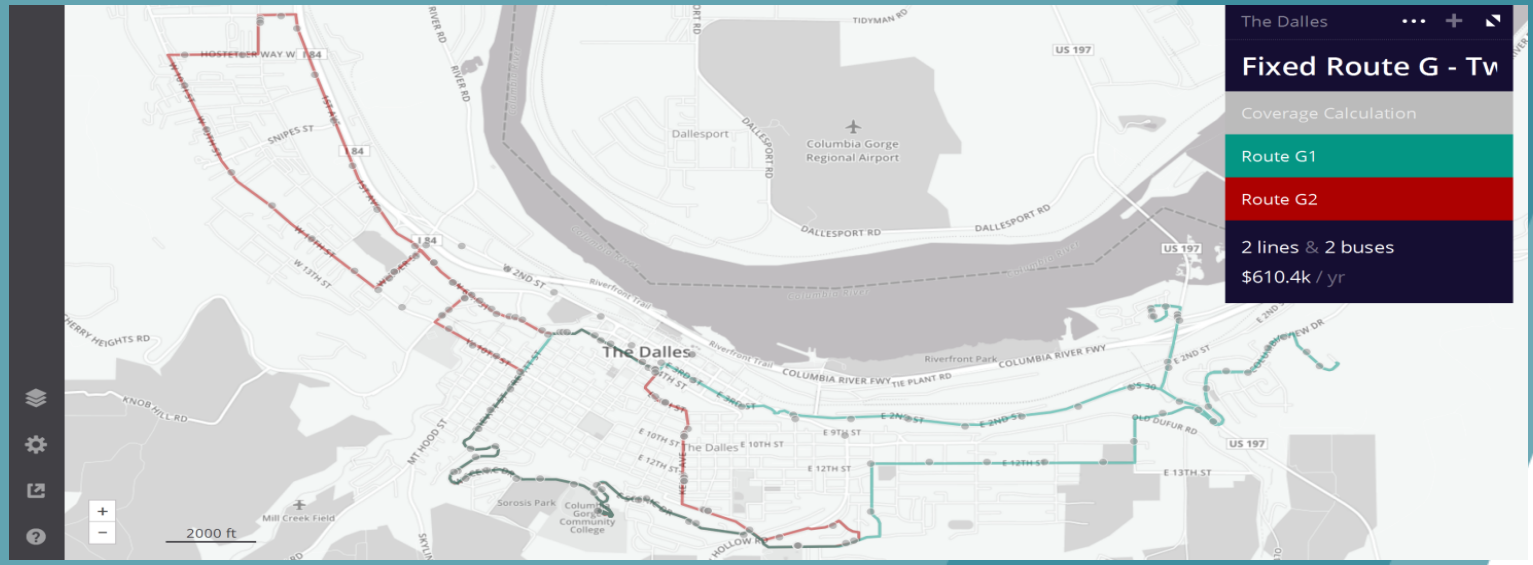
City	Population	Revenue Hours	College Enrollment	Method	Ridership
Sandy	10,014	14,682	0	TCRP 161	95,400
				Actual	169,863
Canby	16,866	17,815	0	TCRP 161	120,800
				Actual	112,648
The Dalles	14,625	13,983	0	TCRP 161	85,600
				Actual	-

Alternative 1 – One Route

- Buses Required – 1
- 5/6 Key Destinations
- Revenue Hours – 4,415
- Estimated demand - 41,100 annual rides for 7-day service
- Cost - $309,100 per year to operate, $500,000 capital cost
- ¼ Mile Capture area – 7,600 people, 5,100 jobs

Alternative 2 – Two Routes

- Buses Required – 2
- 6/6 Key Destinations + Veteran's Affairs
- Revenue Hours – 8,830
- Estimated demand - 66,600 annual rides for 7-day service
- Cost - $610,400 per year to operate, $1,000,000 capital cost
- ¼ Mile Capture area – 9,400 people, 5,700 jobs



Phasing & Implementation

Use of LINK dial-a-ride bus

- No capital costs and similar operating costs
- Potential for 9-10 rides/hour (compared to current 3.5 rides/hour)
- Increase transit ridership, lower strain on dial-a-ride system

Pursue separate and designated service

- Initiate one bus route system
- Expand as demand and funding increases
- Increase days/week based on ridership trends and community outreach

Outcomes

- Oregon HB2017
  - Direct funding for transit systems
- Lincoln County to begin implementation
  - Projected funding will comfortably cover existing and expanded services
  - Communication and public outreach key to effective implementation
- The Dalles to explore fixed-route transit service further
  - Some funding would need to stem from County funds which currently serve regional needs

Questions?