

## CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

### Planning Session Worksheet

**Presentation Date:** January 30, 2019    **Start Time:** 9:30 AM    **Approx Length:** 2 hours

**Presentation Title:** Update and Draft Finding of the Canby Ferry Alternatives Feasibility Study

**Department:** Department of Transportation and Development

**Presenters:** Mike Bezner, Assistant Director – Transportation; Steve Williams, Principal Transportation Planner

**Other Invitees:** Dan Johnson, Director; Diedre Landon, Administrative Services Manager, Karen Buehrig, Transportation Planning Manager

### WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

This session will provide a presentation on the status of the Canby Ferry Alternatives Feasibility Study and give the Board the opportunity to ask questions and provide input into the listening session to be held on February 19, 2019, 6-8 pm at Canby Foursquare Church, 2350 SE Territorial Road, Canby.

### EXECUTIVE SUMMARY:

Each year, a fiscal decision is made to continue operation of the Canby Ferry, even though the revenue brought in from the ferry does not cover the costs. Although the Canby Ferry is an important part of the identity of the Canby area, there are a number of issues with the ferry. The ferry:

- Costs motorists \$5 per vehicle one-way, but over the past three years has cost the county an average of \$400,000 more per year than is received in revenue;
- Does not run when the river level gets above 70 feet or during inclement weather, and runs for limited hours in the dark. As a result, it only operates about 225 days per year;
- Can only carry 6 vehicles at a time and serves on average 200 vehicles per day;
- Is about 15 years away from the end of its useful life and replacement cost will likely be at least \$2.5 million.

In order to understand the feasibility of replacing the ferry with a bridge the Canby Ferry Alternatives Feasibility Study was undertaken. DTD began the Canby Ferry Alternatives Feasibility Study in March 2018. Four alternatives were studied:

1. Continued operation of Canby Ferry, including purchase of a new ferry within 15 to 20 years;
2. Stop operation of Canby Ferry and not replace it with a different type of crossing;
3. A bridge constructed and maintained using public funds, with the option of continuing ferry operation;
4. A bridge constructed and maintained using revenues from tolls with the option of continuing ferry operations.

This is intended to be an initial study of these alternatives to focus on the most important issues that will determine the feasibility of each alternatives:

1. Traffic – How will traffic be affected in the area around Canby in each alternative?

2. Bridge Cost – Is it feasible to build a bridge and what would be the conceptual cost of such a bridge?
3. Tolling – Could the county fund the bridge with tolling, and what would be the costs and revenue for tolling?
4. Financial Feasibility – What is the annual cost and revenue from 2025 to 2049 for each of the alternatives?
5. Public Involvement – What input has been received from the public?

The draft findings for the study are complete and were presented to the public at a public meeting at the Canby Foursquare Church from 6-9 pm on January 15, 2019. The public meeting was very well attended with 166 people who signed in and about 800 viewing the meeting livecast via Facebook Live. Materials available on the project website (<https://www.clackamas.us/transportation/cfalternatives.html>) include the PowerPoint presentation, an input form, posters/handouts, and a video recording of the meeting. An updated version of the PowerPoint from that public meeting is attached and will be presented to the Board in the Planning Session. Also attached are all comments made at the meeting, written comments that were submitted at the meeting and online comments submitted through January 22, 2019. In response to the meeting staff has made some minor revisions to the presentation of the findings in the PowerPoint to clarify the results.

The next steps for this project are as follows:

- Board of County Commissioners Public Listening Session on February 19, 2019, 6-8 pm at Canby Foursquare Church, 2350 SE Territorial Road, Canby.
- Staff presentation to Canby City Council, March 6, 2019
- Board of County Commissioners Policy Session, March 12, 2019, 1:30 pm

#### **FINANCIAL IMPLICATIONS (current year and ongoing):**

Road fund contribution of an average of \$400,000 per year to keep the ferry operating as-is.

#### **STRATEGIC PLAN ALIGNMENT**

The project aligns with the County Performance Clackamas Goals of:

- Build a Strong Infrastructure
- Ensure Safe, Healthy and Secure Communities

The project aligns with the DTD Strategic Business Plan goals for Long Range Planning of:

- Provide plan development, analysis, coordination and public engagement services to residents; businesses; local, regional and state partners, and County decision-makers so they can plan and invest based on a coordinated set of goals and policies that guide future development.

#### **LEGAL/POLICY REQUIREMENTS:**

None at this time.

#### **PUBLIC/GOVERNMENTAL PARTICIPATION:**

This project has included a very active public participation process including two public meetings, post card announcements for the meetings, project website and spoken, written and online comments that have been received. In general, the main concerns raised in the comments have been related to traffic impacts on the surrounding area, the financial feasibility of a toll bridge, and concern about right-of-way impacts. A number have also expressed support for continued operation of the Canby Ferry despite the annual subsidy that is necessary.

**OPTIONS:**

This Planning Session is an opportunity to hear the findings of the Canby Ferry Alternatives Feasibility Study and the input received from the public to date. Issues for discussion include:

1. Are there questions about the study findings?
2. What additional information is needed before the next Board Policy Session?
3. What input does the Board have on the format for the February 19, 2019 Listening Session?

**RECOMMENDATION:**

There is no recommendation at this time.

**ATTACHMENTS:**

- “Canby Ferry Alternatives Feasibility Study: Report of Draft Findings” – PowerPoint presentation.
- Comments received at the January 15, 2019 Public Meeting during the comment session, as well as comments submitted in writing or online as of January 22, 2019.

**SUBMITTED BY:**

Division Director/Head Approval \_\_\_\_\_

Department Director/Head Approval \_\_\_\_\_

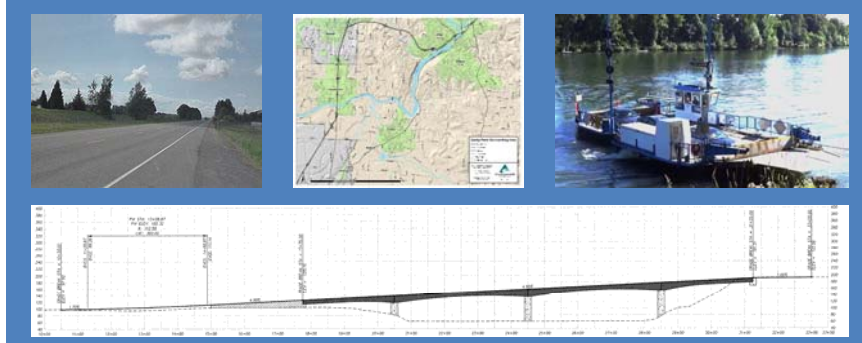
County Administrator Approval \_\_\_\_\_

For information on this issue or copies of attachments, please contact Stephen Williams @ 503-742-4696
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# Canby Ferry Alternatives Feasibility Study: Report of Draft Findings



January 30, 2019 – Board of County Commissioners Planning Session



## Agenda for Today's Planning

- Introduction
- Presentation of Draft Findings
- Board discussion, comments and questions
- Board input on February 19, 2019 Listening Session

## Why Study Ferry Alternatives?

As transportation, the Canby Ferry has limitations:

<b>Restricted times</b>	<b>Limited capacity</b>	<b>Loses money</b>
Can't operate when: - River above 70 feet - Inclement weather	Holds 6 vehicles and serves 200 vehicles/day	Lost an average \$400,000/year for last 3 years



Therefore, we analyzed possible alternatives  
for crossing the Willamette river.



3

## Issues Raised at January 15 Public Meeting

### Concerns

- Increased traffic, safety and noise issues
- Impacts to surrounding properties
- Analysis of traffic/cost/tolling/bonding
- Change to community character
- Addition of bridge does not serve community needs



4


## Analysis Assumptions

Timeframe:

- 2025-2049 (25 years)

Finances:


- Replace ferry in 2035 (\$2.5 million)
- Inflation applied to both revenues, costs


5

## Four Major Alternatives

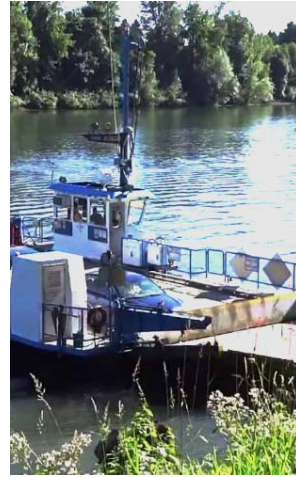
<b>01</b> Continue Operating the Canby Ferry  Or.....	<b>02</b> Stop Operating the Canby Ferry  And/or.....	<b>03</b> Build Publicly Funded Bridge at Canby Ferry  Or.....	<b>04</b> Build Toll Funded Bridge at Canby Ferry
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*Both Alternative #1 and Alternative #2 can be combined with either Alternative #3 or Alternative #4*


6

## Alternative #1: Continue the Ferry

- Extend current service to 2049
- Continue current level of use, with maximum 45,000 annual average ridership
- Continue current toll of \$5
- Buy new ferry when needed, expected by 2035
- Grants available for major repairs, but none available to support ferry operations
- No other organizations available to take over ferry operations



7

Revenue from fares	\$4,950,586
Cost of operations and personnel	-\$15,831,699
Cost of maintenance	-\$3,071,874
Cost of Ferry replacement	-\$2,500,000
<b>Total</b>	<b>-\$16,452,986</b>

## Alternative #1: Total Costs, 2025-2049



8

## Alternative #2: Stop Ferry Operations

- Stop Ferry operations by 2025
- Do not replace the Ferry with any other transportation option for crossing the river in that area
- Requires decommissioning the ferry, removing facilities and changes to signs
- Reimburse portion of Federal Highway Administration grant funds, if necessary



Decommission, remove facilities, change signs	-\$1,500,000
Reimburse Federal Highway Administration (if necessary)	-\$360,000
<b>Total cost</b>	<b>-\$1,860,000</b>

## Alternative #2: Total Costs, 2025-49





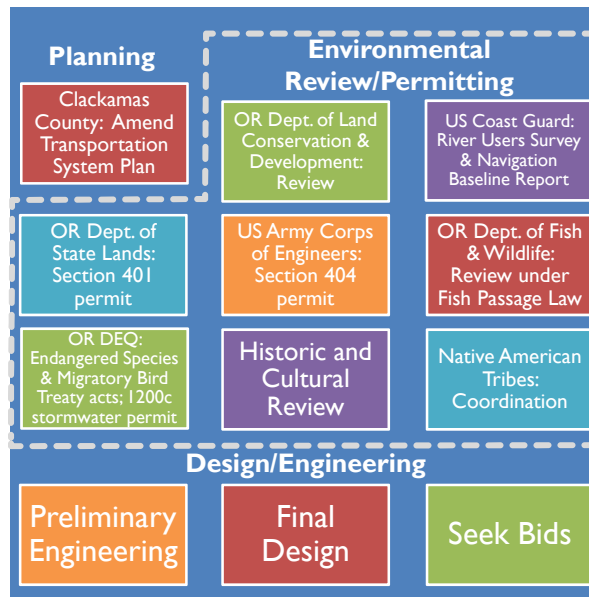
## Alternative #3: Build Bridge Adjacent to Ferry Location

### Bridge Concept:

- 2 traffic lanes, 2 shoulder/bike lanes, 1 sidewalk
- Length: 1,350 foot span from bluff top to bluff top
- Height: 70 - 100 feet above river
- 1 - 2 supporting piers in river
- Built to withstand major earthquake
- Combined total of 1,200 feet of improvement to Locust St & Mountain Rd at bridge landing points




Steps required before a bridge could be built




## Estimated 25-year Costs for Bridge


Environmental Analysis, Permits, Design	\$6,840,000
Right-of-Way	\$1,542,000
Construction	\$30,207,500
Road and Intersection Improvements	\$2,160,056
Contingency (30%) on construction & right-of-way	<u>\$10,472,867</u>
<b>Total Design &amp; Construction</b>	<b>\$51,222,423</b>
Maintenance Cost for 25 years	<u>\$5,250,000</u>
<b>GRAND TOTAL</b>	<b>\$56,472,423</b>


13


## Bridge Funding Options




**Grants or Special Funds** – No grants are available for a project this size



**Road Fund** – Majority of County road fund used to maintain 1,400 miles of road.



**Bonding & Tolls** – Toll revenue used to pay bonds. Only motorists using the bridge would pay.


14

## Alternative #4: Toll Bridge



Sample Toll Transponder

- Two major benefits
  - **Revenue:** Tolling can raise revenue to pay for bridge construction and maintenance
  - **Traffic management:** Drivers are sensitive to tolling, so tolling reduces traffic
- Project funded with bonding. Toll revenue used to pay off bonds, maintain bridge and toll system



15

## Bonding

### What it is:

A form of long-term borrowing used by governments, similar to buying a home or business with a mortgage

### What we did:

Analyzed 12 bonding scenarios to find the lowest annual cost approach

### Optimum Alternative

- Full Faith and Credit
- Term = 25 years
- No capitalized interest
- Principal = \$52.7 million
- Interest rate = 5.68%\*
- Debt service (principal and interest) = \$106.8 million

\*2% above current rate as contingency



16

## Amortization Table for Optimum Alternative

Year	Debt Service	Year	Debt Service	Year	Debt Service
2025	\$2,811,603	2034	\$4,038,111	2043	\$4,904,954
2026	\$2,942,375	2035	\$4,130,601	2044	\$4,968,294
2027	\$3,212,375	2036	\$4,221,896	2045	\$5,030,816
2028	\$3,401,818	2037	\$4,322,691	2046	\$5,096,816
2029	\$3,602,689	2038	\$4,421,585	2047	\$5,164,961
2030	\$3,683,847	2039	\$4,523,497	2048	\$5,229,769
2031	\$3,769,607	2040	\$4,627,389	2049	\$5,300,295
2032	\$3,854,311	2041	\$4,732,202	<b>Total</b>	<b>\$106,776,741</b>
2033	\$3,942,391	2042	\$4,841,854		



## Toll Collection Options

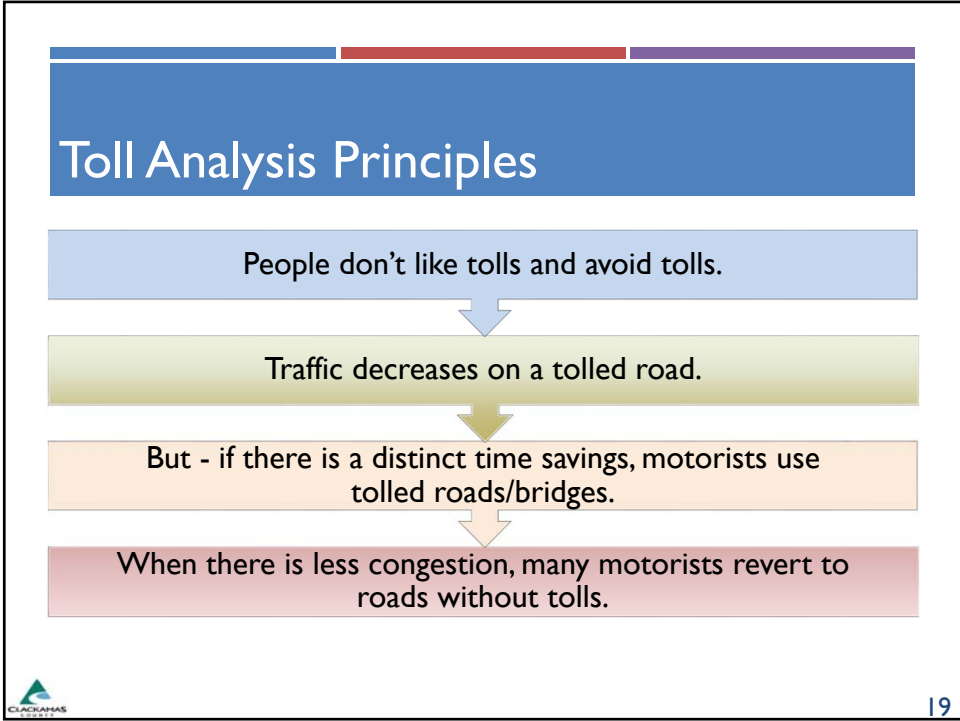
### All Cash (“traditional”)

- Typical method of toll collection until about 20 years ago
- Motorists drive to staffed toll booth, stop & pay cash
- Most expensive way to collect toll: \$1.06 per transaction
- Creates a safety and enforcement issue

### Electronic Toll Collection + License Plate Recognition

- Motorist with transponder in vehicle drives through reader. User account charged based on vehicle category.
- License plate recognition for vehicles without transponders;
- -\$2 surcharged added to toll for license plate recognition





## Toll / Traffic Scenarios

**Goals:**

- Keep traffic levels low (to lessen impact on adjacent roads) and...
- Have enough toll revenue to pay to build and maintain bridge

Analyzed Traffic Scenarios	
Scenario	Traffic (# of vehicles)
Low Traffic	Maximum of 200/hour, 3,000/day;
Moderate Traffic	Maximum of 300/hour, 4,000/day;
High Traffic	Maximum of 600/hour, 6,000/day;

20

## 2025 Toll Rates for each Scenario

- Tolls can vary by time of day and/or day of week
- Toll rates (below) will be increased for inflation to keep traffic levels at or below maximum
- \$2 surcharge for license plate recognition (~ 30% of users)

<b>Scenario</b> (vehicles/day)	<b>Peak Hours</b> (7 - 9 am, 3 - 6 pm)	<b>Mid-day</b> (9 am – 3 pm)	<b>Evening / Overnight</b> (6 pm – 7 am)
Low (2,000)	\$3.50	\$2.50	\$1.50
Moderate (3,000)	\$3.00	\$2.00	\$1.25
High (6,000)	\$2.00	\$1.25	\$1.25



21

## Annual Revenue Forecast for Low Traffic Scenario

<b>Year</b>	<b>Revenue</b>	<b>Year</b>	<b>Revenue</b>	<b>Year</b>	<b>Revenue</b>
2025	\$3,295,567	2034	\$4,733,195	2043	\$5,749,249
2026	\$3,448,850	2035	\$4,841,606	2044	\$5,823,493
2027	\$3,765,325	2036	\$4,948,616	2045	\$5,896,776
2028	\$3,987,377	2037	\$5,066,761	2046	\$5,974,137
2029	\$4,222,824	2038	\$5,182,678	2047	\$6,054,012
2030	\$4,317,952	2039	\$5,302,132	2048	\$6,129,976
2031	\$4,418,474	2040	\$5,423,907	2049	\$6,212,641
2032	\$4,517,758	2041	\$5,546,761	<b>Total</b>	<b>\$125,156,355</b>
2033	\$4,620,999	2042	\$5,675,288		



22

## Traffic Analysis Principles

People follow the shortest travel time route.

When a road connection is added, motorists shift routes to find the route with the shortest travel time.

Motorists use toll roads when it saves time. When there is no time savings or travel time is not important, motorists avoid toll roads.



23

## Models Used for Traffic/Toll Analysis

### Metro Travel Demand Model

- Determines level of congestion for every road and expected travel speed
- Assigns trips to shortest travel time route based on congestion at that hour of the day
- We worked with Metro to improve accuracy in the Canby area

### ECONorthwest Toll Model – Behavioral Model

- Used by Wash. Dept. of Transportation for toll projects
- Uses data on driver choices to estimate the number of motorists who would switch to a toll road based on expected reduction in travel time
- Estimated traffic and toll revenue at 7 toll rates from \$0 to \$4



24

## Traffic Analysis

Used the models to analyze the following:

1. Traffic changes on area roads
2. Travel from Canby to other places
3. Cut-through traffic from I-5 or I-205 using Canby Bridge
4. Change in traffic using Canby Bridge due to an incident on I-5 or I-205



25

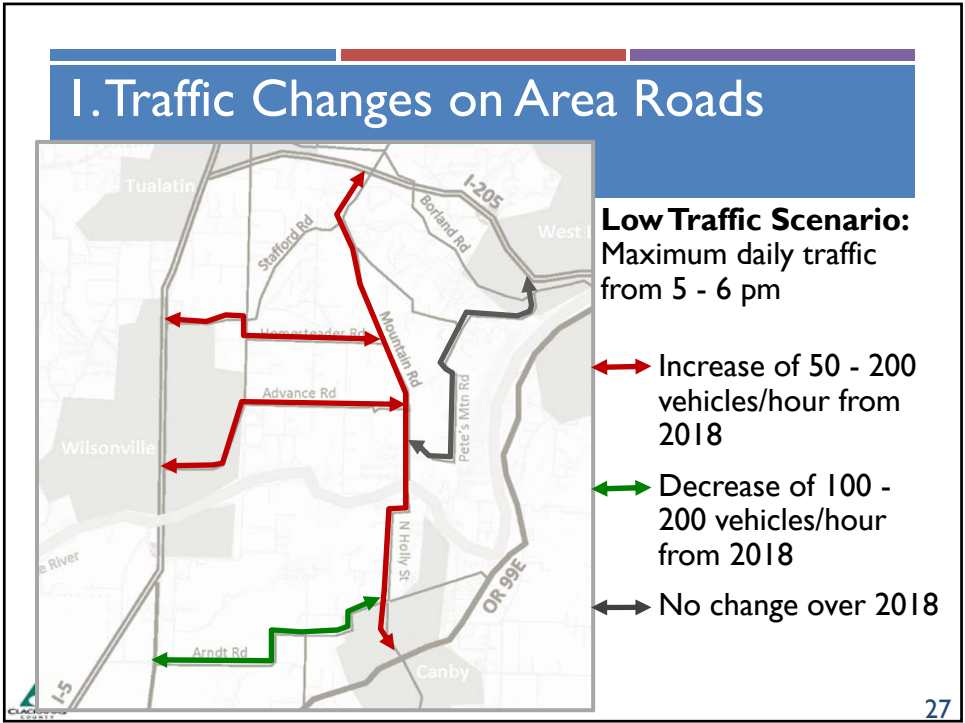
## I. Traffic Changes on Area Roads

1. **Analyzed traffic in the busiest hour of the afternoon (5-6 pm) with a \$3 toll**
2. **What we learned:**
  - Some travelers change routes to take advantage of shorter travel time on another route
  - These changes result in traffic decreases in some locations and traffic increases in other locations



26





## Traffic Changes on Area Roads

# of Cars/Hour at Busiest Time of Day (5 to 6 pm)

Road Segment	Current Traffic	Change with Bridge		
		Low Traffic	Moderate Traffic	High Traffic
Canby Bridge		+200	+300	+650
Holly St N of Territorial	50	+200	+300	+650
Holly St S of Territorial	475	+150	+250	+550
Territorial E of Holly St	575	0	0	+100
Mtn Rd S of Hoffman	25	+200	+300	+650
Mtn Rd N of Hoffman	150	+200	+300	+650
Advance Rd	75	+50	+100	+150
Pete's Mountain Rd	125	0	+25	+25
Stafford Rd S of I-205	1,450	+100	+200	+250
Willamette Falls Dr	600	0	0	0
Knight's Bridge Rd	650	-100	-200	-350
Arndt Rd	1,350	-150	-300	-375
Barlow Rd	750	-150	-200	-175

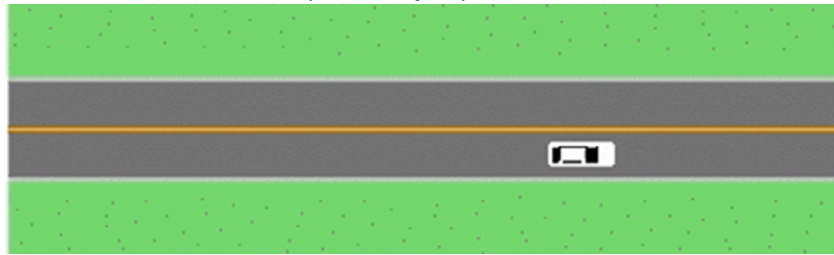
28

## Simulation of Holly, Locust & Mountain south of Hoffman: Maximum Traffic

2018 traffic = 50 cars/hour

Increase in traffic due bridge = 200 cars/hour

**Traffic at busiest time of day = 250 cars/hour**  
(5 to 6 pm)



## Weekday Traffic on Bridge by Hour

Time (AM)	Toll Rate	Vehicles/ Hour	Time (PM)	Toll Rate	Vehicles/ Hour
Midnight	\$1.50	36	Noon	\$1.50	172
1	\$1.50	30	1	\$1.50	180
2	\$1.50	27	2	\$1.50	166
3	\$1.50	18	3	\$3.00	189
4	\$1.50	78	4	\$3.50	209
5	\$1.50	113	5	\$3.50	243
6	\$3.50	108	6	\$2.50	163
7	\$3.50	197	7	\$1.50	144
8	\$3.50	231	8	\$1.50	140
9	\$2.50	194	9	\$1.50	125
10	\$2.50	131	10	\$1.50	103
11	\$1.50	161	11	\$1.50	73



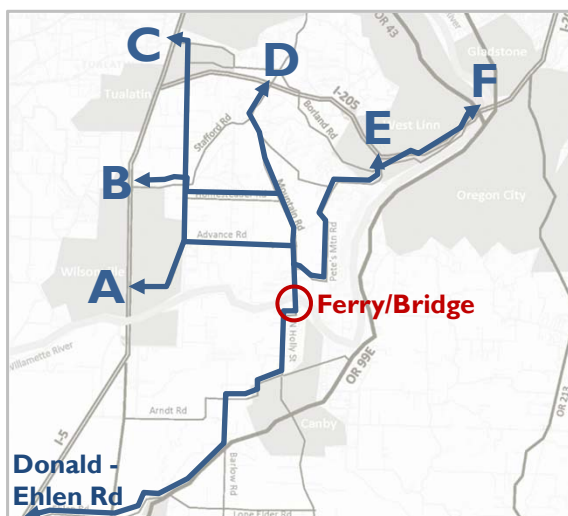
## 2. Travel from Canby to Other Places

1. Using the bridge **increases** travel time by **5+ minutes** when going to:
  - Oregon City, West Linn, Gladstone or Happy Valley
  - OR 99E continues to be the route with the shortest travel time
2. Using the bridge **decreases** travel time up to **2 minutes** when traveling to Wilsonville
3. Using the bridge **decreases** travel time more than **10 minutes** when going:
  - North of Wilsonville along I-5,
  - E.g., to Tualatin, Tigard, Beaverton, Hillsboro



31

## 3. I-5/I-205 Cut-through Routes



### Analyzed 6 routes:

- Connecting from I-5 Donald Rd / Ehlen Rd
- Across Canby Bridge
- To I-5 or I-205



32

### 3. Cut-through Traffic from I-5 or I-205

#### What we learned:

- **Canby Bridge would not save time for travelers cutting through to avoid I-5 or I-205**
  - Analyzed 5 to 6 pm traffic (when traffic is slowest) on the interstates
  - All cut-through routes must go around or through Canby and Aurora to connect to I-5 at the Donald / Ehlen Rd interchange
  - There is a lot of traffic delay on the route between Canby and I-5 at the Donald / Ehlen Rd interchange



33

### 4. Incident on I-5 / I-205

**Goal: Identify traffic diversion after a major incident on I-5/I-205 in heaviest afternoon traffic**

- 15-mph speed on:
  - I-5 (Donald/Ehlen Rd to I-5/I-205 interchange)
  - I-205 (10<sup>th</sup> St to I-5/I-205 interchange)
- \$3 toll rate

#### What We Learned:

- Travel time higher for all routes
- For interstate travelers, staying on the interstate remains the fastest option by about 10 minutes
- Only travelers to and from Canby save time by using the Canby Bridge



34

## Financial Summary of Alternatives: Costs and Revenues (\$ millions) over 25 Years

Alternative	Cost (debt service + operations + maintenance)	Revenue	Net Revenue
<b>1</b> Continue operating ferry	(\$21.40)	\$4.95	(\$16.45)
<b>2</b> Stop operating ferry	(\$1.86)	\$0	(\$1.86)
<b>3</b> Publicly-funded bridge	(\$56.47)	\$0	(\$56.47)
<b>4</b> A. Low Traffic Toll Bridge	(\$125.15)	\$125.25	\$0.10
B. Moderate Traffic Toll Bridge	(\$127.90)	\$141.80	\$13.90
C. High Traffic Toll Bridge	(\$135.00)	\$171.90	\$36.90



35

## Next Steps & Questions

- The Board of Commissioners will hold a listening session on **Tuesday, Feb. 19 at 6 p.m.** at the Canby Foursquare Church
- Presentation to Canby City Council, **March 6**
- The final report, including public input received throughout the process, will be presented to Board at a Policy Session, **March 12, 2019, 1:30 to 2:30 pm**

## Questions?



36