

CONGESTION RELIEF TASK FORCE

A Technical Review of Transportation Infrastructure Options



Task Force Meeting #5, August 3, 2018



Prepared by DKS Associates



Agenda

1. Agenda Review and Meeting #4 Recap
2. Review Project Goal, Data, and Project Ideas
3. Recommendations and Reporting
 - a) Recommended Projects: short, medium, and long-term
 - b) Changes to adopted policies, practices, and projects
 - c) Funding Strategies
 - d) Areas for further research
4. Project Conclusions and Key Points
5. Next Steps

Project Goal

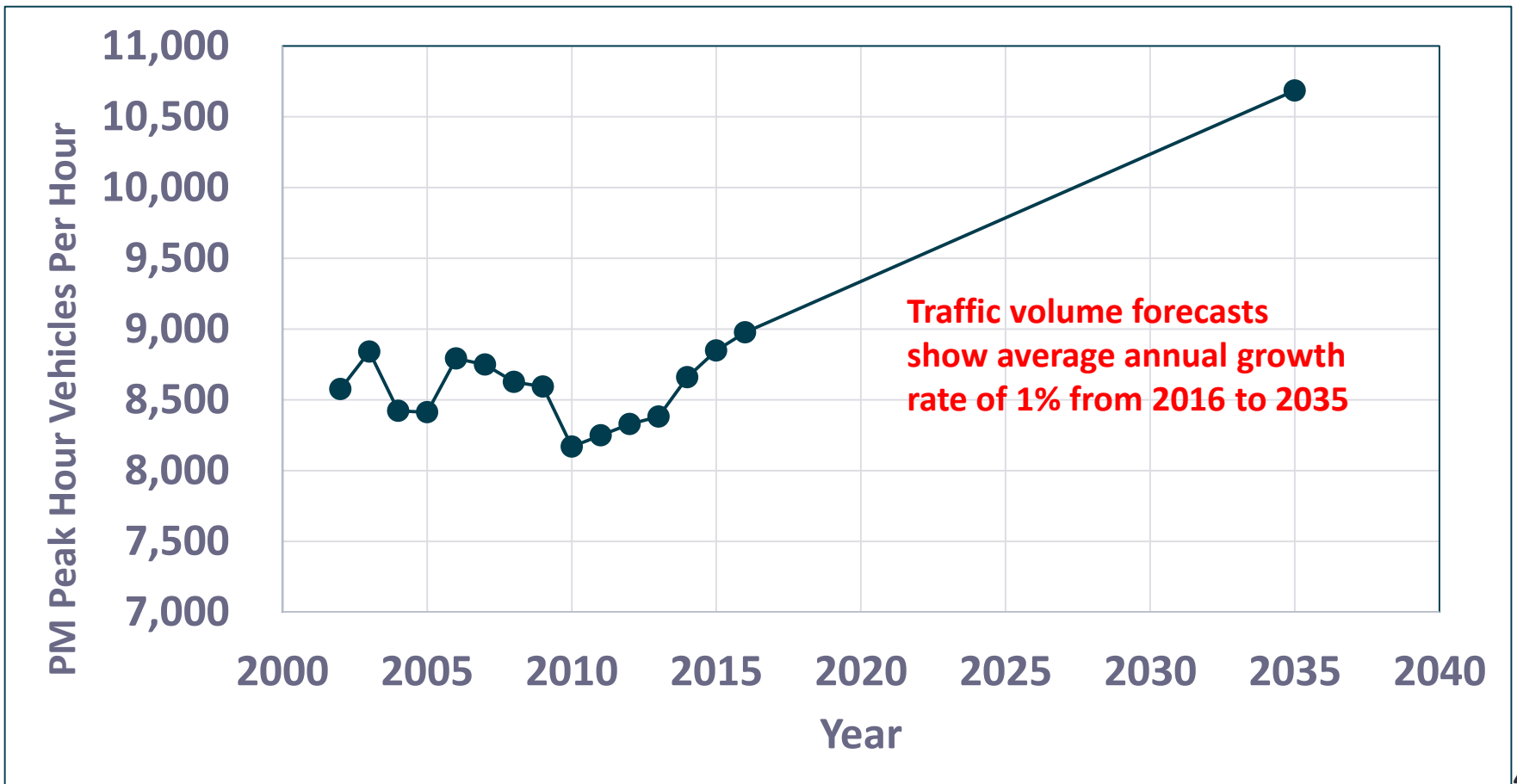
Identify options for reducing traffic congestion and improving vehicular mobility around the Marion and Center Street bridges

- Develop ideas to reduce traffic congestion and improve vehicular mobility in:
 - Short term (within 5 years)
 - Medium term (within 10 years)
 - Long term (longer than 10 years)

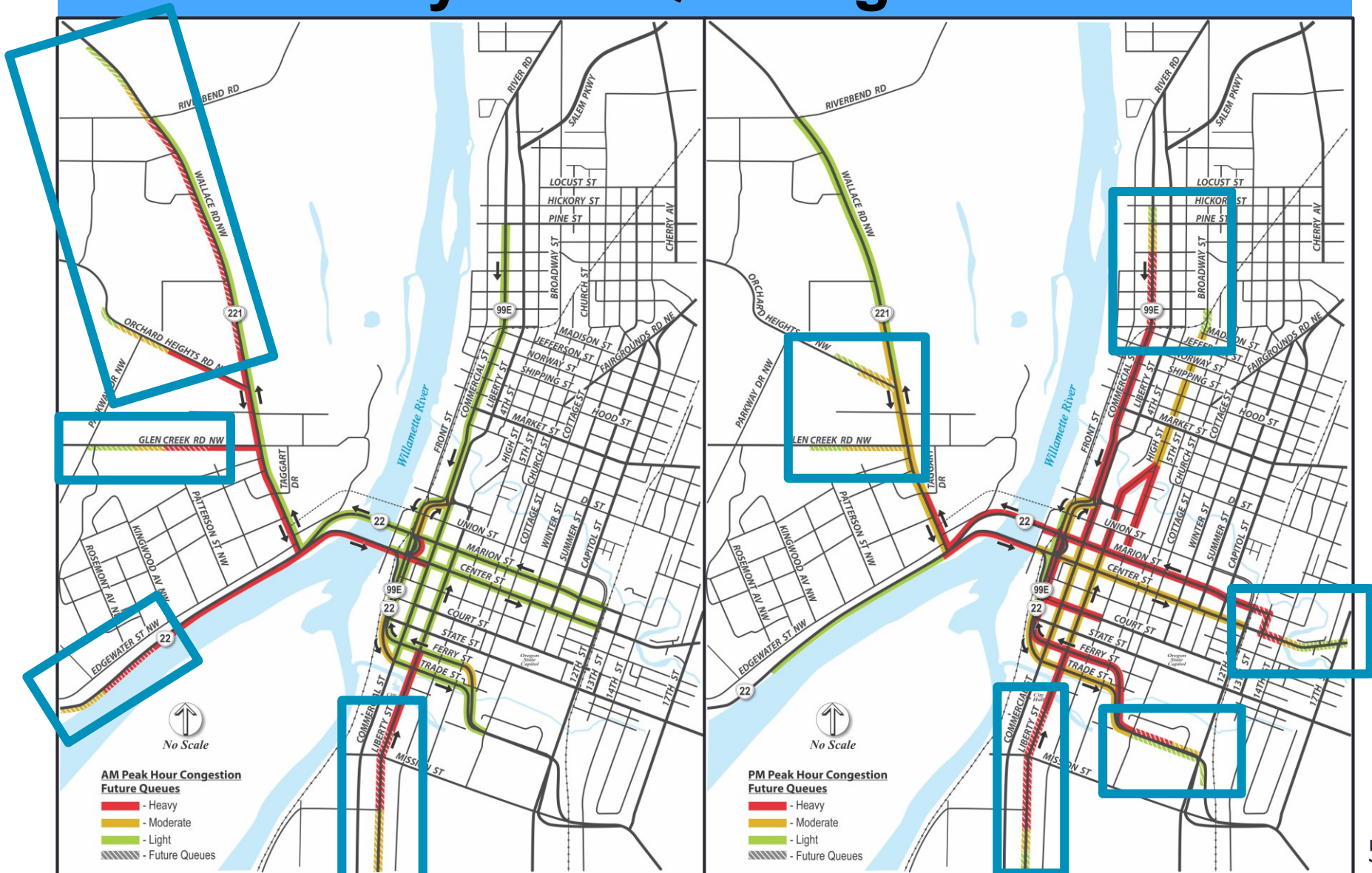
- Develop a list of recommendation(s) that includes the following:
 - Changes to adopted policies, practices, and projects
 - Projects that improve traffic congestion and vehicular mobility
 - A funding strategy
 - A prioritized listing of areas recommended for further research

Projected Traffic Growth – PM Peak Hour

Using data from ODOT Traffic Recorders, traffic across both Salem Bridges is shown below from 2002 to 2016. The 2035 PM peak hour vehicular volume shown is based on data from the PSU Population Research Center forecasts.



Study Area Queuing in 2035



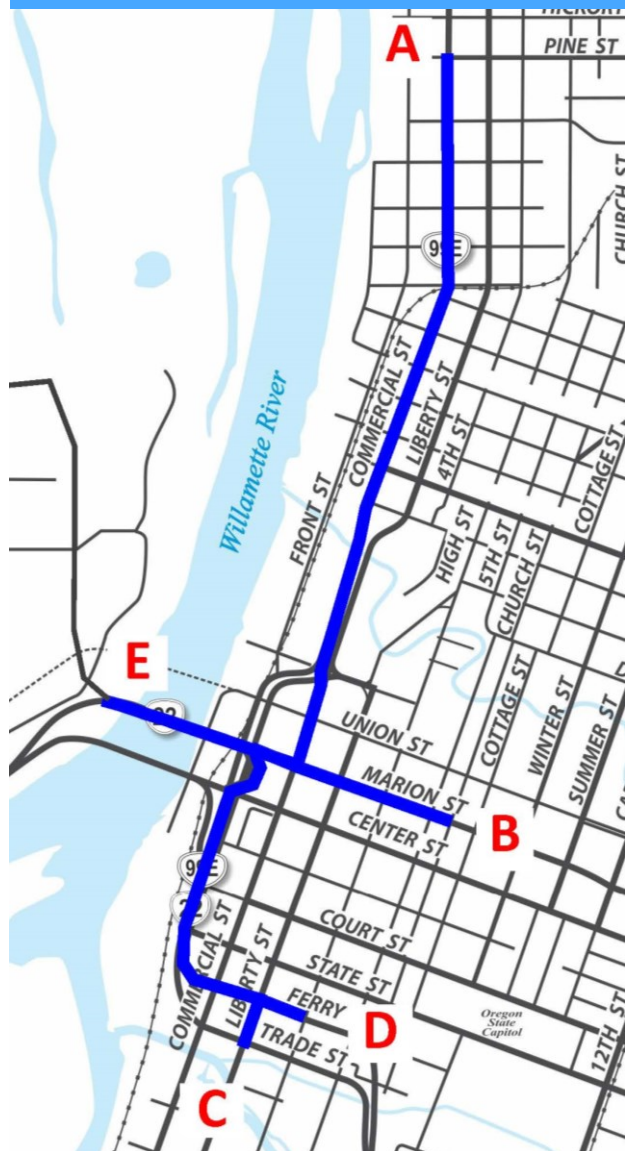
Solution Package – Center Bridge #1



AM Travel Times (mins)

Start	End	AM Peak (Existing)	AM Peak (Build 2018)	AM Peak (No Build 2028)	AM Peak (Build 2028)
A	E	11 mins	6 mins	15 mins	10 mins
B	E	10 mins	5 mins	14 mins	9 mins
C	E	7 mins	4 mins	10 mins	7 mins
D	E	5 mins	3 mins	7 mins	5 mins

Solution Package – Marion Bridge #4



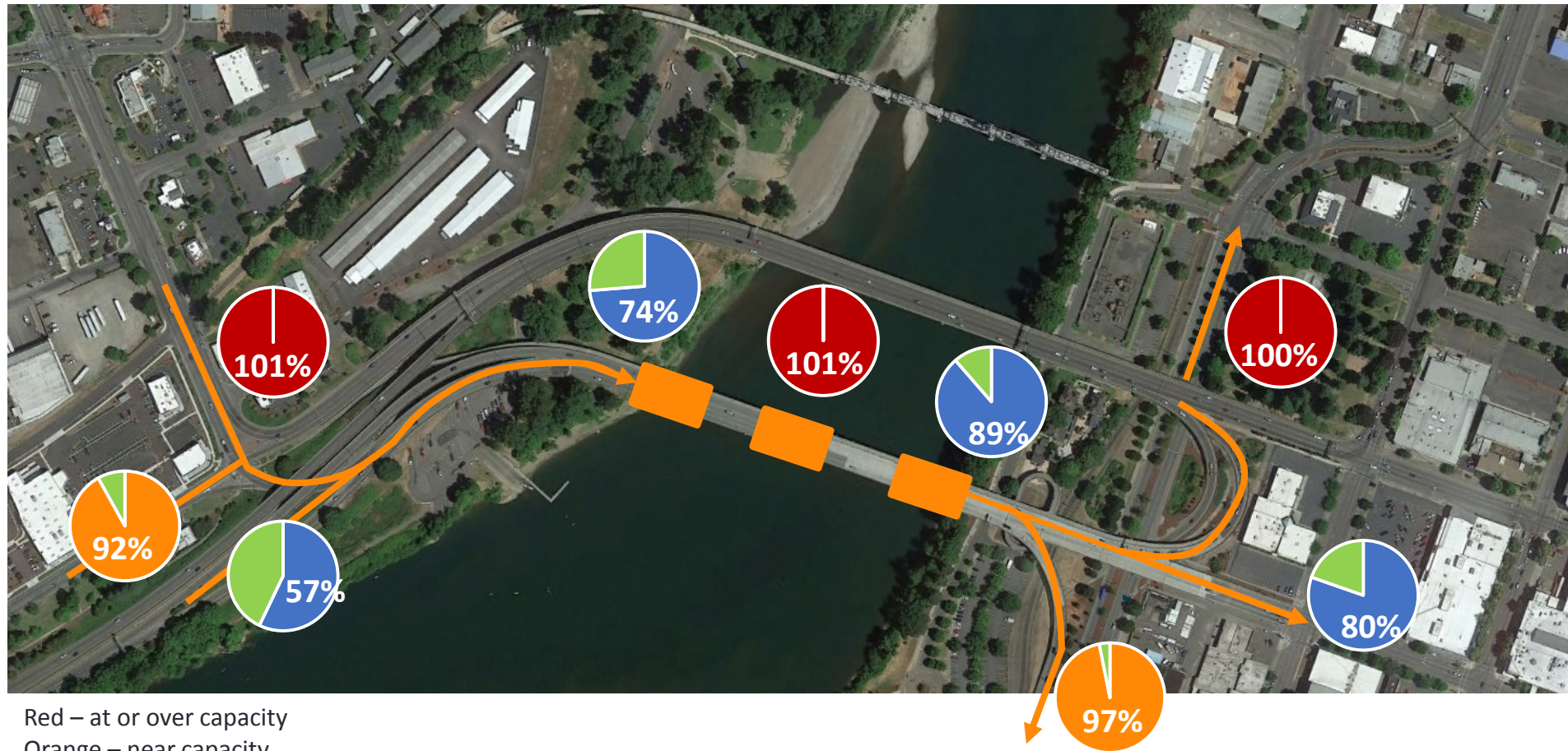
PM Travel Times (mins)

Start	End	PM Peak (Existing)	PM Peak (Build 2018)	PM Peak (No Build 2028)	PM Peak (Build 2028)
A	E	12 mins	8 mins	15 mins	10 mins
B	E	9 mins	4 mins	14 mins	12 mins
C	E	8 mins	8 mins	10 mins	10 mins
D	E	8 mins	8 mins	10 mins	10 mins

*Travel times provided for Wallace Road option (#4b)

Bridge and Bridgehead Capacity Summary

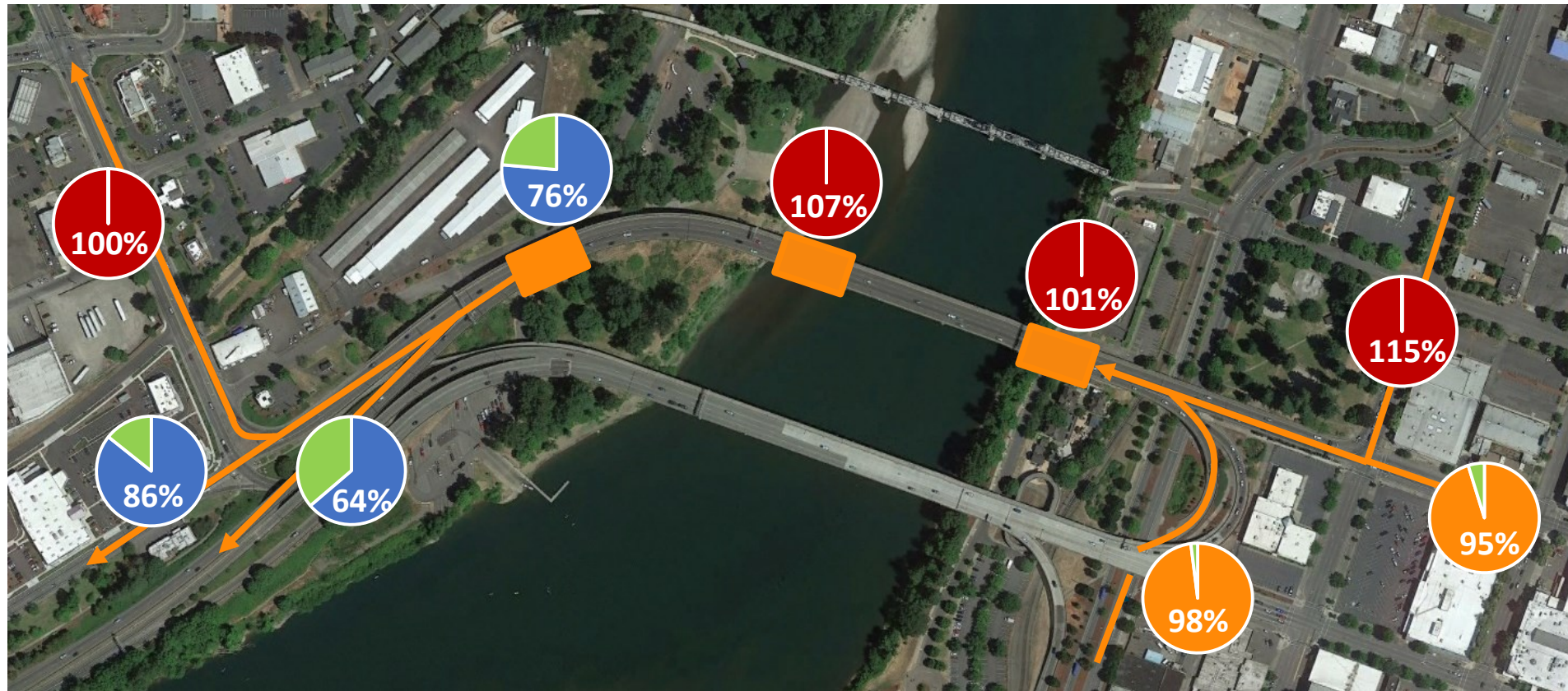
Center Street Bridge – AM Peak
Percentages of Capacity Used



Red – at or over capacity
Orange – near capacity
Blue – below capacity

Bridge and Bridgehead Capacity Summary

Marion Street Bridge – PM Peak
Percentages of Capacity Used



Red – at or over capacity
Orange – near capacity
Blue – below capacity

City & State Mobility Standards

- Level of Service (LOS): evaluated based upon average vehicle delay experienced by vehicles entering an intersection
- Volume-to-capacity ratio (v/c): A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 0.90, congestion increases and performance is reduced. At 1.0 the capacity is fully utilized.

LOS	Delay (secs.)
A	< 10
B	10 – 20
C	20 – 35
D	35 – 55
E	55 – 80
F	>80

ODOT Roadway	Mobility Standard
Bridges/ Hwy 22	(v/c < 0.85)
Commercial/ Liberty	(v/c < 0.95)
Wallace Road	(v/c < 0.95)

City of Salem Standards

Traffic Control Device	Maximum Operational Standard
Signalized Intersection	LOS E Control Delay < 80 Seconds and/or v/c < 0.900
Two-way or All-Way Stop Control	LOS E Total Delay < 50 seconds

Table 6-32. Level of Service Standards for Various Traffic Control Devices

AM Intersection Operations in Study Area

Figure shows intersection operations analysis and queuing in AM peak. As shown, many intersections fail to meet the City or State mobility standards.



- - At or near standards
- - Fails to meet standards

PM Intersection Operations in Study Area

Figure shows intersection operations analysis and queuing in PM peak. As shown, many intersections fail to meet the City or State mobility standards.



- - At or near standards
- - Fails to meet standards

Project Ideas

These following project ideas came from many sources:

- Previous Studies
- Public Survey (1,300 participants)
- Task Force Committee
- Consultant Team

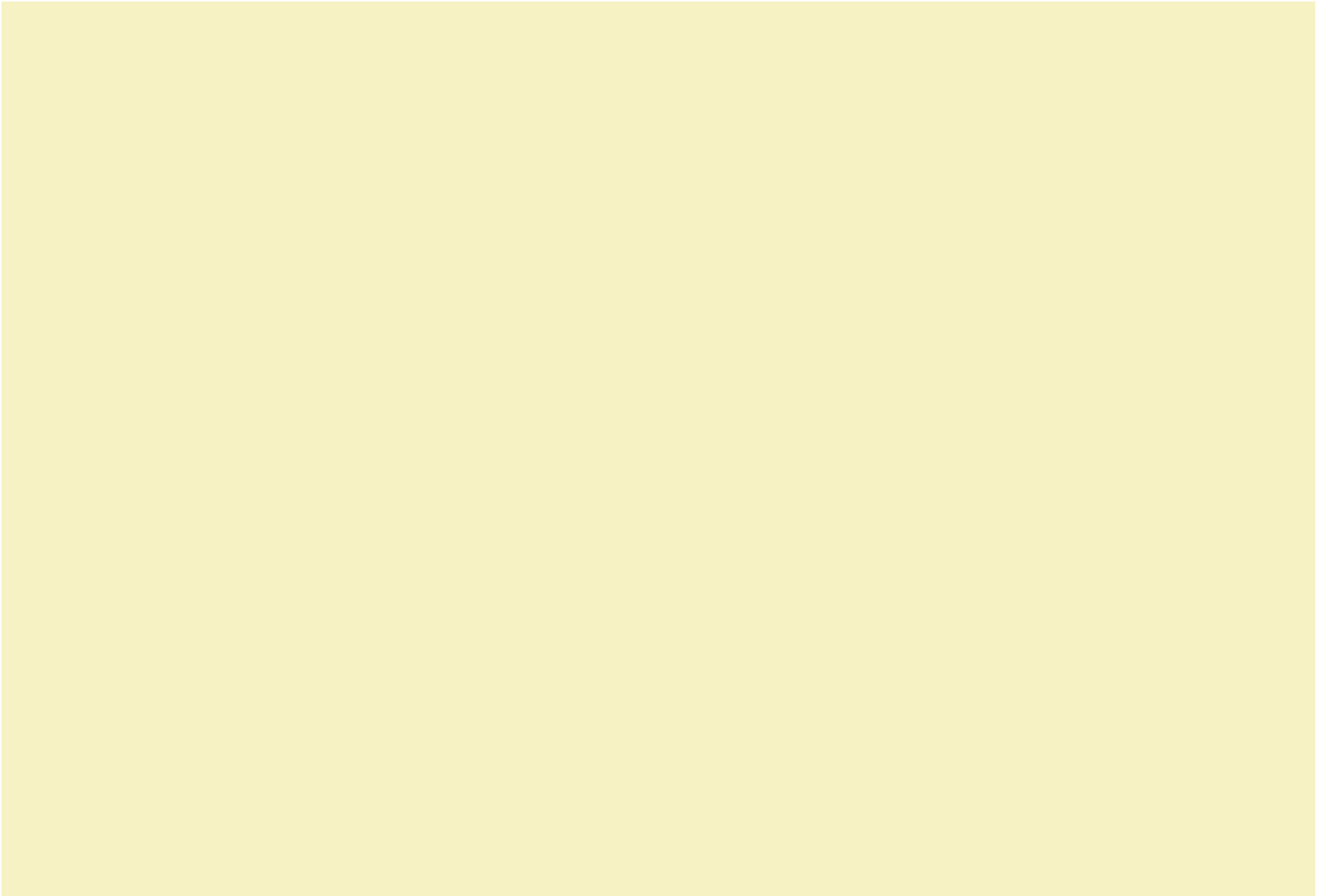
Project ideas:

- Were included in the Solution Packages or
- Provided spot benefits and are discussed later in agenda or
- Did not provide capacity benefits (next slide)

Project Ideas Not Advanced



	Ideas
1	Add lanes to Commercial Street/Liberty Street
2	Construct Union St bikeway (already funded)
3	Widen to two SB lanes on Front Street (from Commercial St to Court St)
4	Remove the traffic signal at Edgewater St/Wallace Rd
5	Roundabout at Edgewater St/Wallace Rd
6	Close Edgewater St at Wallace/Marion Street Bridge off-ramp; only accessible via Rosemont Ave
7	Install traffic signal at Edgewater St/Patterson St
8	Widen WB Rosemont exit on Highway 22
9	Remove the pedestrian crossing at Front St/Court St



Policies, Practices, and Projects

Policies for Consideration

- Congestion Pricing – charging users for roadway or bridge trips during the peak periods to decrease demand and fund transportation improvements. Congestion Pricing project for Portland Metro Area pictured right.
- Parking Pricing – implement or increase parking costs to reduce peak hour vehicle demand and increase alternative modes
- Travel Time Standards - Identify acceptable travel time standards/levels of congestion for road users

Adopted Projects

- Central Salem Mobility Study – adopted projects that reduce vehicle capacity

CONGESTION PRICING PROPOSALS



5/27/11

An Evaluation of Congestion Pricing Proposals in the Portland Metro Area

The Oregon State Legislature directed the Oregon Department of Transportation (ODOT) to implement a congestion pricing pilot project in the Portland Metropolitan Area by September 2012.

Candidate proposals were evaluated for their traffic, financial and economic effects. ODOT led the study with support by a consultant team.

Wallace Road/Taggart Drive Intersection Improvements



Improvements include widening Taggart Dr approaches to have **dual, exclusive left turn lanes** and **exclusive right turn lanes**.

Provides approximately 7% more capacity on Wallace Road for through traffic in both the AM and PM peak hour.

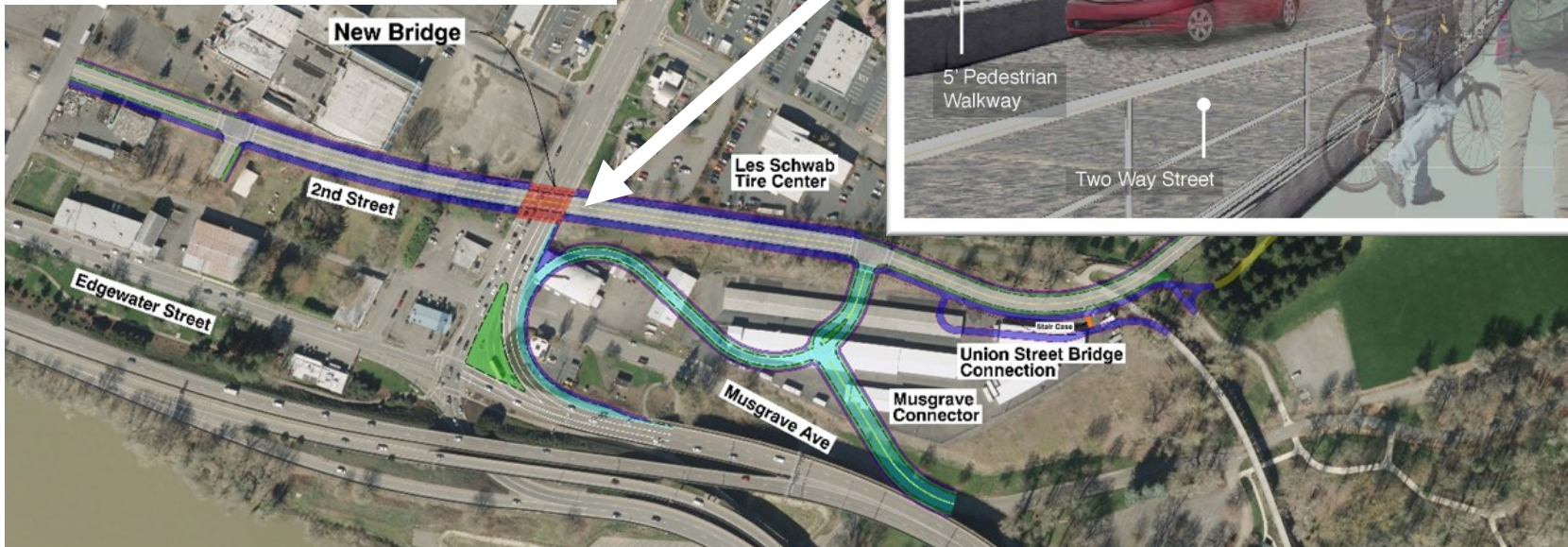
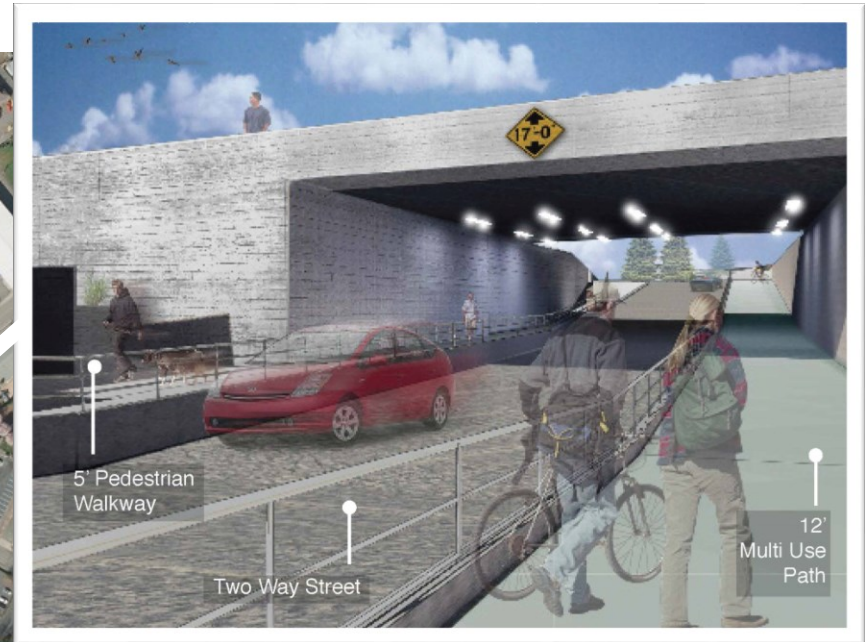
Cost estimate: \$10 million

2nd Street Undercrossing

Connect 2nd Street under Wallace Road to the proposed Marine Drive roadway, build an additional off-ramp lane from Marion Street bridge to 2nd St/Marine Dr

Improves capacity on Wallace Rd at traffic signals by approximately 3-5% in both AM and PM peak hour. Provides multimodal connectivity

Cost estimate: \$30 - \$40 million



Grade-separated Pedestrian Crossing

Remove pedestrian crossings of Front St.

Reduces delays for traffic on Front St.

Remove Front Street pedestrian crossings at State St and Court St

Build a grade-separated pedestrian crossing, reducing delay for traffic on Front Street.

Must get buy-off from ODOT to remove crossings.

Reduces access to Riverfront Park.

Negligible change in capacity due to bottleneck at Front/Trade/Commercial



ITS Driver Information Signage



Does not increase capacity but helps provide real time information to commuters.

Cost estimate: \$500,000 - \$1,000,000 for each variable message sign (VMS)

Potential Short/Medium-term Projects

Cost Estimate: \$0 - \$5 million per project

1. Improve guide signage leading up to and on the bridges
2. Increase pedestrian delays at signalized intersections during peak periods
3. Open Musgrave Avenue through Wallace Marine Park
4. Variable speed limit signage on Hwy 22
5. Install travel time signage in study area
6. Expand bike/ped connections to Union Street Bridge
7. Parking Management
8. Invest in Downtown Circulator
9. Park and Walk/Bike/Shuttle in Wallace Marine Park
10. Turn restrictions on Wallace Road - Install center lane barrier and/or remove turns from Wallace Rd onto Taggart Dr

Potential Medium/Long-term Projects

Cost Estimate: \$5 - \$50 million per project

1. Add a grade-separated pedestrian crossing of Front Street between downtown and Riverfront Park and remove the existing pedestrian crossings of Front St
2. Extend two SB lanes on High St past Union Street (remove parking) and make SBRT free flow at Marion Street
3. Add grade-separated pedestrian crossing near Marion Street/High Street, remove existing pedestrian crossing at intersection
4. 2nd Street Undercrossing
5. Taggart Dr/Wallace Rd intersection improvements
6. Connect Murlark Avenue to Glen Creek Road
7. Add through and right turn lanes to Wallace Road from Hwy 22 to Brush College Rd
8. Widen Front Street (north of Division) to minor arterial standards

Potential Long-term Projects

1. Center St bridge Solution Package #1 (Cost estimate: \$100 - \$137 million)
2. Marion St bridge Solution Package #4a (Cost estimate: \$80 - \$95 million)
3. Marion St bridge Solution Package #4b (Cost estimate: \$55 - \$65 million)

Funding Strategies

Gas Tax – sales tax imposed on sale of gasoline to fund transportation or road projects. Requires voter approval

Bonds – issued by the City to fund capital projects such as building highways or road improvement projects. Requires voter approval