CONGESTION RELIEF TASK FORCE

A Technical Review of Transportation Infrastructure Options

Task Force Meeting #4, July 20, 2018

DKS

Prepared by DKS Associates

CITY OF Salem AT YOUR SERVICE

Agenda

- Meeting #3 Recap
- ODOT Coordination
- Additional Recommendations to Support Solution Packages
- Performance of Solution Packages
- Summary Matrix
- Wrap-up and Next Steps

CONGESTION RELIEF TASK FORCE

A Technical Review of Transportation Infrastructure Options

Review of Solution Packages

	Marion Package #1	Marion Package #2	Marion Package #3	Marion Package #4	Center Package #1	Center Package #2	Center Package #3
Description	Triple SBR on Commercial St, Added lane on Marion St, 5th lane on Bridge, no weaving	Free flow SBR on Commercial St, 5th lane on Bridge, no weaving	Loop ramp over Marion Square Park, Added lane on Marion St, 5th lane on Bridge, no weaving	Triple SBR on Commercial St, Added lane on Marion St, 5th lane on Bridge	Widen Wallace Rd, 5th lane on Bridge, Free flow off-ramp to Front St NB	Widen Wallace Rd, 5th lane on Bridge, Flyover ramp to NB Commercial St	Marine Dr reversible lane on Marion St Bridge
Date of Removal			May 18 (Task Force Meeting #3)			May 18 (Task Force Meeting #3)	June 12 (ODOT coordination meeting)
Reason for Removal			Loop ramp over Marion Square Park would cause large impact to park			Flyover ramp from Center St Bridge would cause significant downtown business impacts	After meeting with ODOT, reversible lane on Marion St Bridge deemed fatal flaw

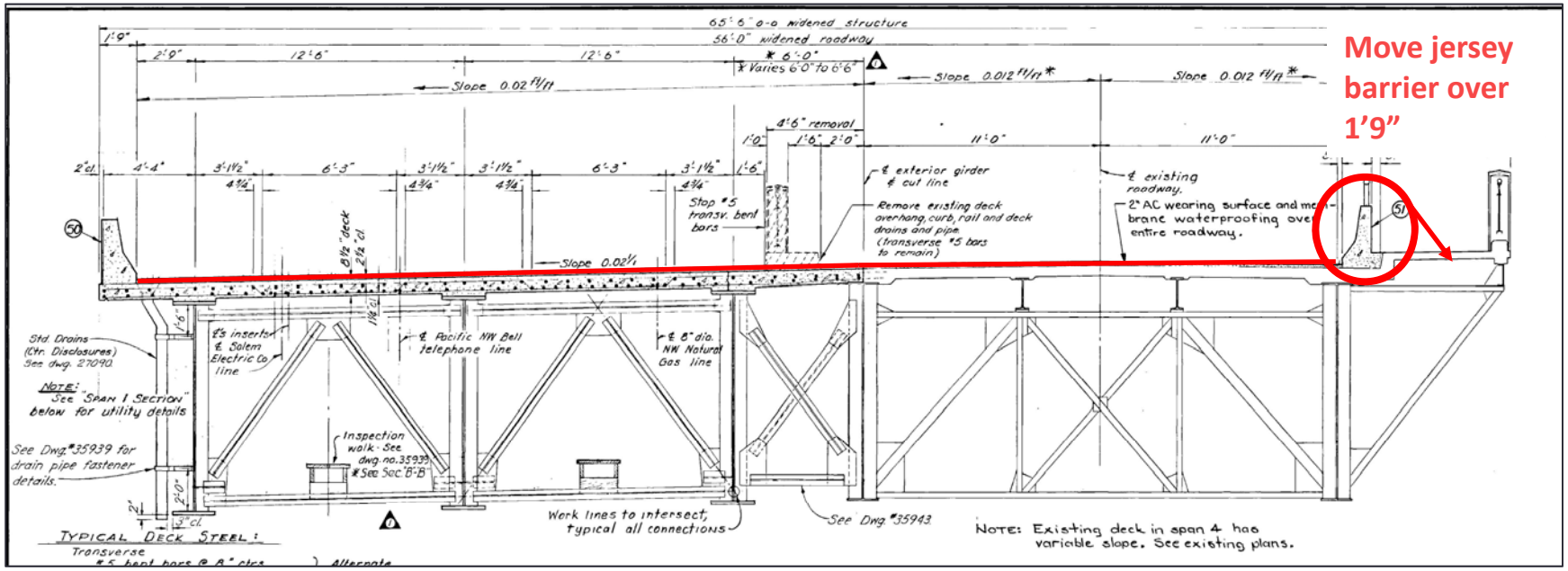
ODOT Coordination Meeting

DKS/City met with ODOT Region 2 Bridge, Traffic and Roadway staff

Date: June 12th, 2018

- Presented the current Marion and Center solution packages
- Reviewed the Marion St and Center St Bridge ODOT construction drawings
- **Confirmed Solution Packages were feasible for Marion Bridge #1, #2, and #4 (see handouts)**

Marion Bridge Construction Drawings



- Existing roadway width = 56'
- Total new roadway width = 57' 9"
- Restripe bridge to have five 11' wide lanes plus 1' 4.5" of shy
- ODOT Design Exceptions will be required due to removal of sidewalk, narrow lanes, and less than 2' of shy distance between travel lanes and barrier

Marion Bridge Construction Drawings

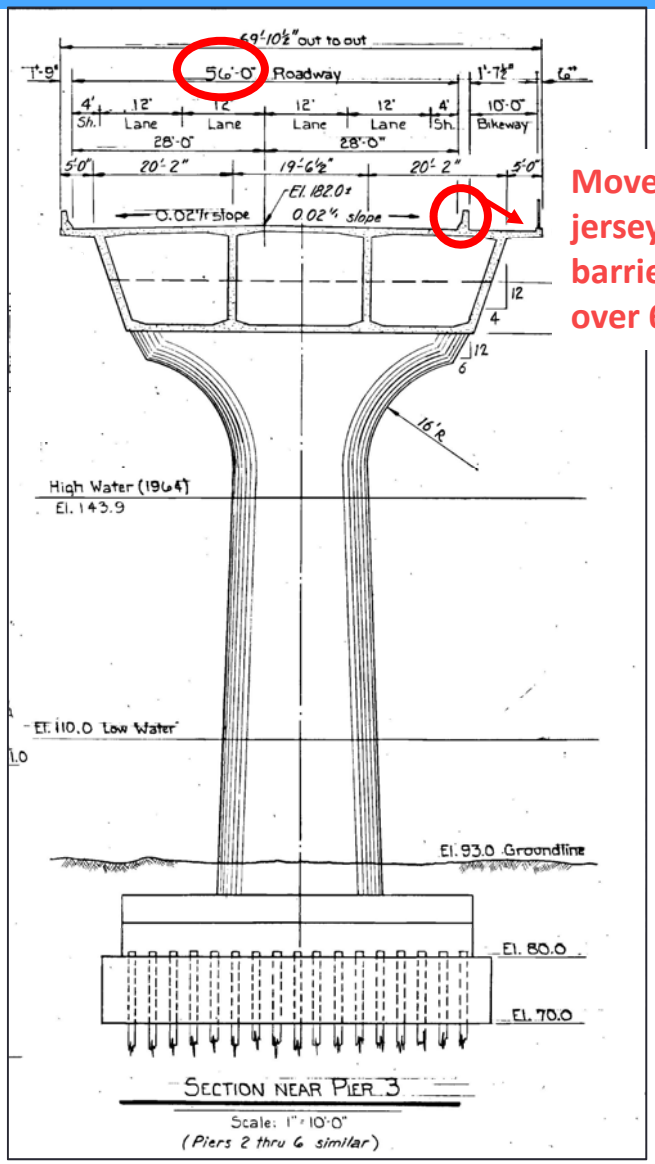
Not enough width for a fifth reversible travel lane, would require physical barrier separating two-way traffic

Removed Center Bridge Solution Package #3

Center Bridge Construction Drawings

- Existing roadway width = 56’
- Total new roadway width = 62’ 7”
- Maintain 5’ ped walkway on Bridge
- Restripe bridge to have five travel lanes
- No fatal flaws
- ODOT Design Exception required for removal of bike facilities and narrow lanes

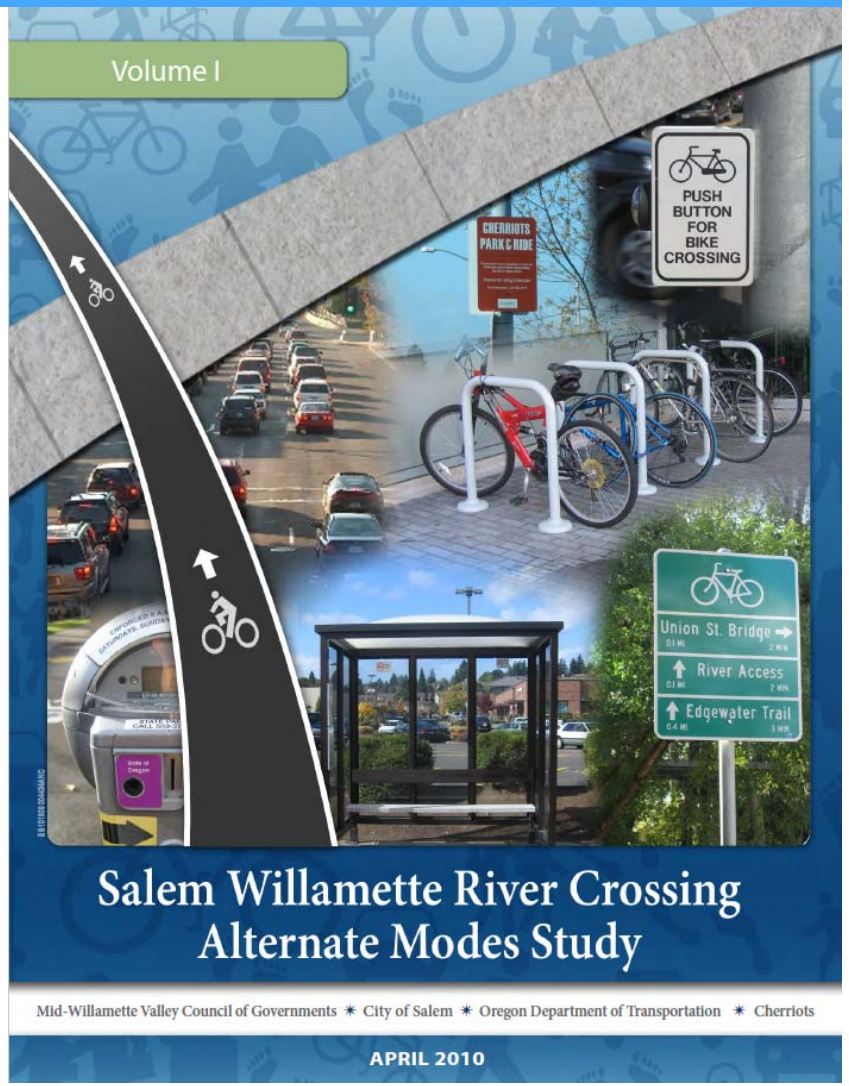
Confirmed Center Bridge Solution Package #1



Move jersey barrier over 6’7”

Additional Recommendations to Support Solution Packages

- Beyond Scope of Current Project
- Could form basis for future recommended action or study
- Reviewed:
  - Public Input
  - Salem River Crossing Alternate Modes Study (2010)
- Focus on Actions within City Control (mostly)



Additional Recommendations to Support Solution Packages

- Wallace Marine Park – Park & Walk/Bike to Work
- Bike/pedestrian connections to Union Street Bridge
- Parking Management
- Invest in Downtown Circulator
- Pursue Local Gas Tax

Wallace Marine Park – Park and Walk/Bike

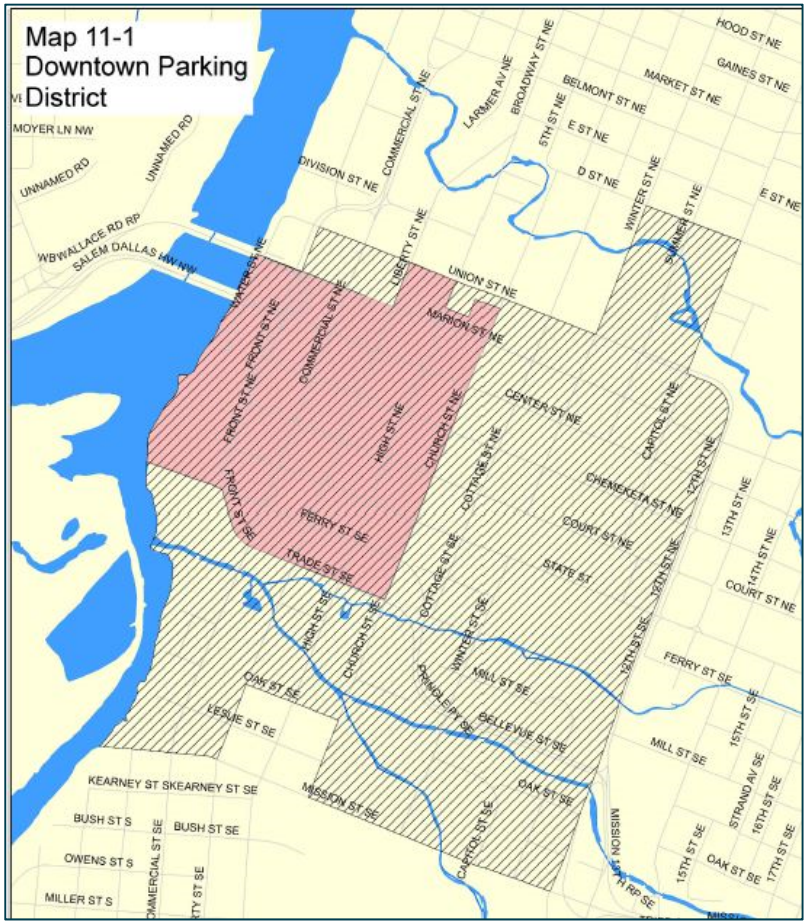
- Could accommodate 40-45 spaces
- Would need input from SPRAB, others
- Possible conflicts with recreational use
- Security, Lighting, Enforcement
- Permits?
- Funding?

Bike/Pedestrian Connections to Union St Bridge

- Continue Existing:
  - Union Street Bikeway
  - Winter Maple Greenway
  - Pringle Creek Path Connection
- Expand Connections:
  - 2nd Street Connection across Wallace Road
  - Marine Drive Multi-use Path
  - Front Street bike lanes and sidewalks
  - East Bank Multi-use Path
  - Other?

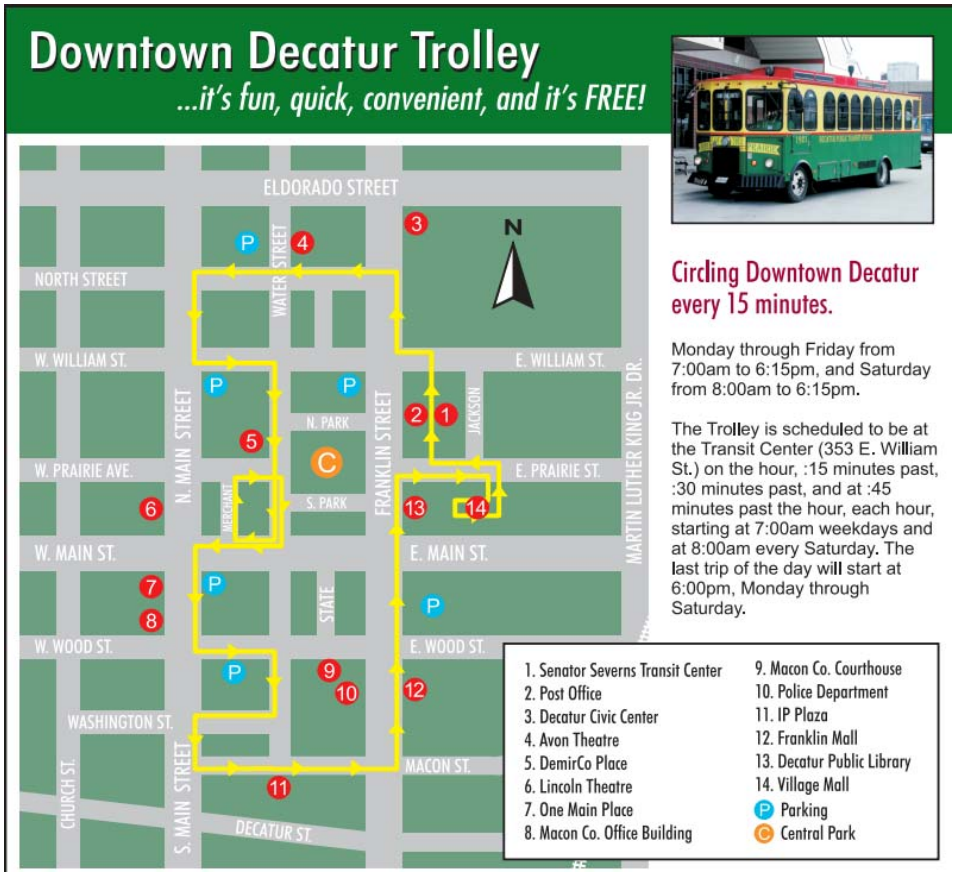
Parking Management

- Suggestions from 2010 Alternate Modes Study
  - Switch from Monthly to Daily Fee Parking
  - Discourage Parking at Peak Periods
    - Peak-period surcharge
    - Early-bird discount
  - Increase pricing for parking:
    - Structures
    - On-street
  - Tax parking spaces?
  - Parking Cash Out Programs



Downtown Circulator/Trolley

- Circulator route to connect major employers, bike parking, and carpool parking with common destinations downtown
  - Possible connections to west Salem?
- Ease of access to bank, restaurants, shopping during lunch may encourage more people to leave personal car at home
- Would likely be joint with Cherriots
- Requires feasibility study and funding



Local Gas Tax

- 24 Cities have Local Gas Tax
- 1 – 5 cents per gallon
- Could support transportation projects – auto, bike, pedestrian
- Is restricted to use in Public right-of-way and can not be used for transit operations
- Requires voter approval (requirement in place since January 2014)

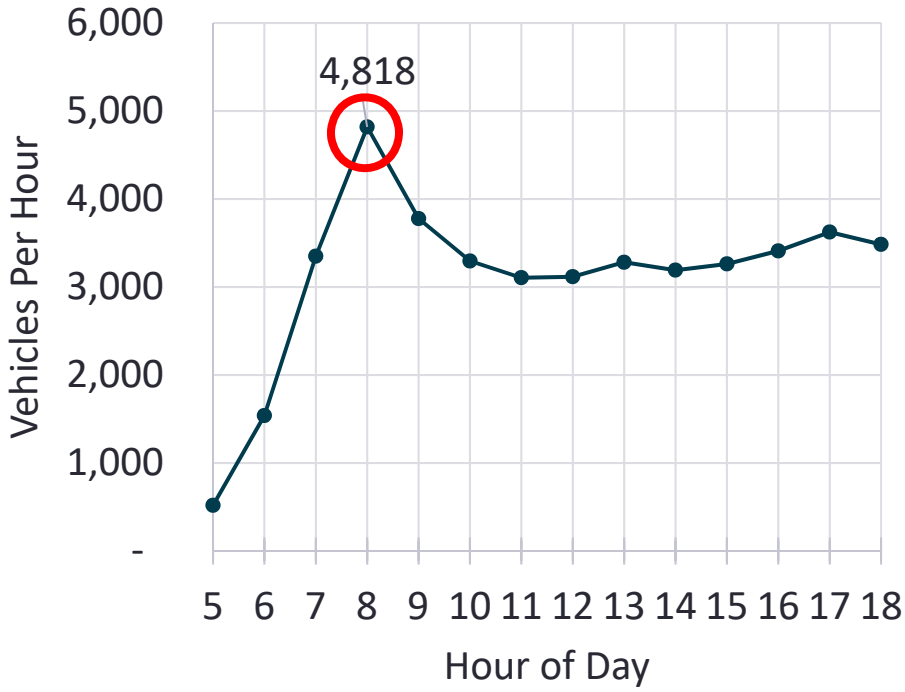
City	Passage Date	Tax Rate (cents/gal.)
Astoria	2007	3 cents
Brookings	2015	4 cents
Canby	2008	3 cents
Coburg	2007	3 cents
Coquille	2007	3 cents
Cornelius	2009	2 cents
Cottage Grove	2003	3 cents
Dundee	2003	2 cents
Eugene	2003	5 cents
Hood River	2009	3 cents
Milwaukie	2007	2 cents
Newport	2009	1 cent (Nov.-May) 3 cents (June-Oct.)
Oakridge	2004	3 cents
Phoenix	2015	2 cents
Sandy	2002	1 cent
Sisters	2009	3 cents
Springfield	2003	3 cents
The Dalles	1980	3 cents
Tigard	2006	3 cents
Troutdale	2015	3 cents
Tillamook	1982	1.5 cents
Veneta	2004	3 cents
Warrenton	2007	3 cents
Woodburn	1989	1 cent

• ODOT's Fuel Tax Disclosures

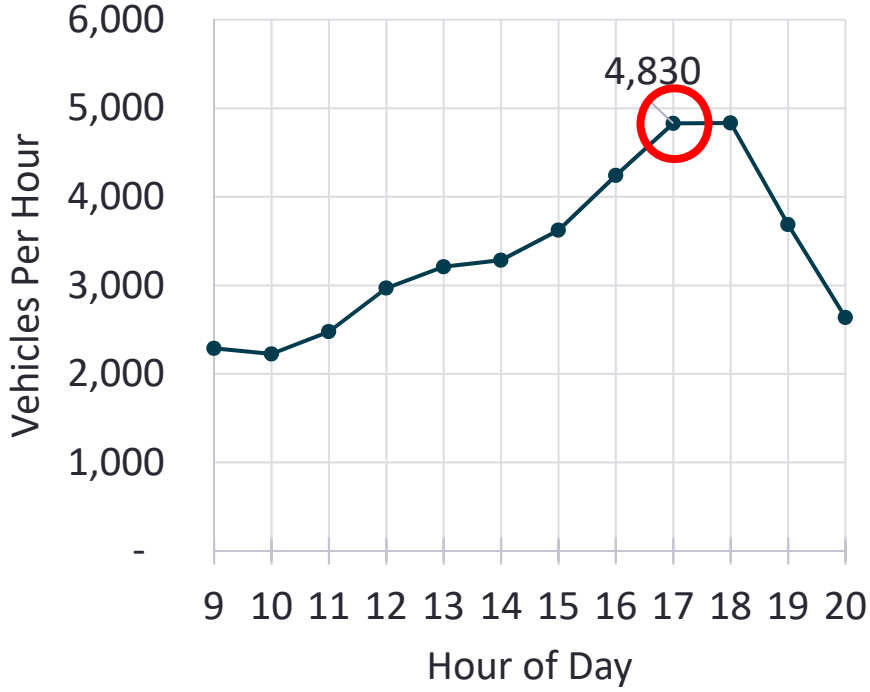
Solution Packages' Performance

Peak Hour for Travel Times and Queuing Represents:

Center Street Bridge – morning peak hour



Marion Street Bridge – evening peak hour



Solution Package – Center Bridge #1

<u>Summary:</u>

Improves Wallace Rd and Front St

Bottlenecks still exist at both Commercial St/Front St intersections

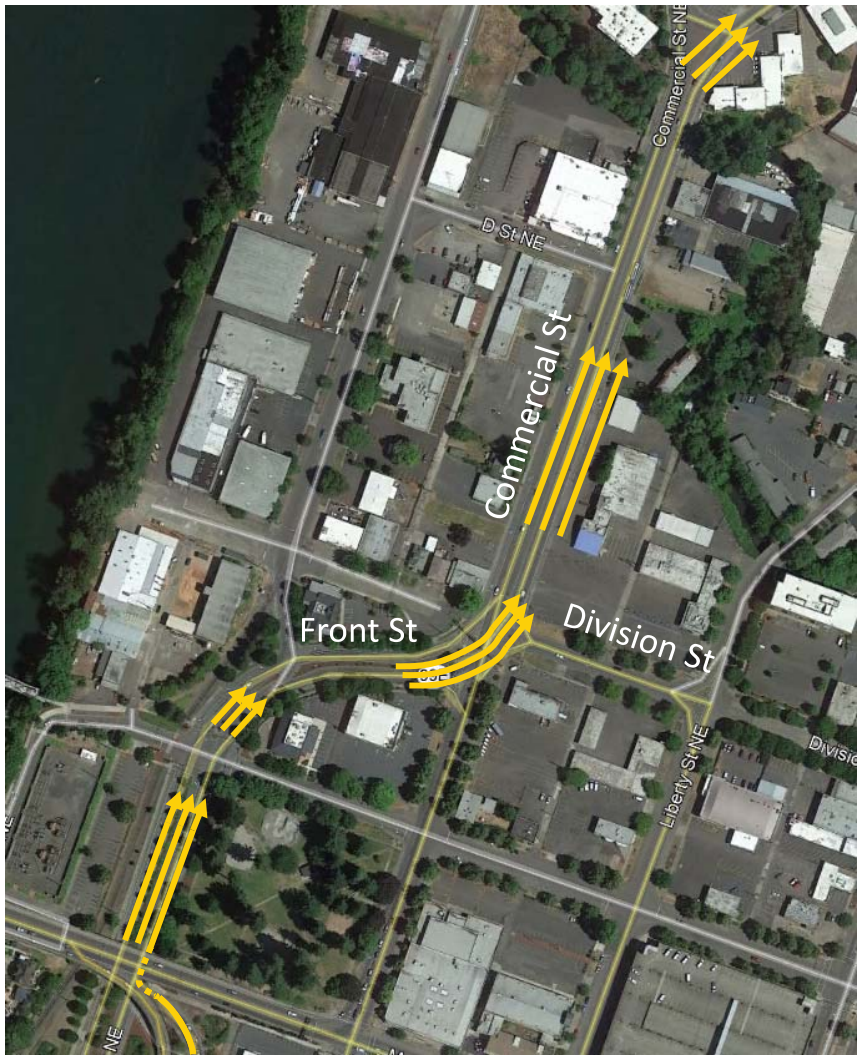
Maximum capacity of package = 850 vph*

*assuming "bottleneck" intersections are improved (improvements shown on following slides)

○ = Indicates existing "bottleneck"

Solution Package – Center Bridge #1

"Bottleneck" Improvement at Commercial St/Front St



Assumptions:

- Widen to three northbound lanes on Front St and Commercial St
- Signal modifications at Commercial St/Front St/Division St
- Would require right-of-way

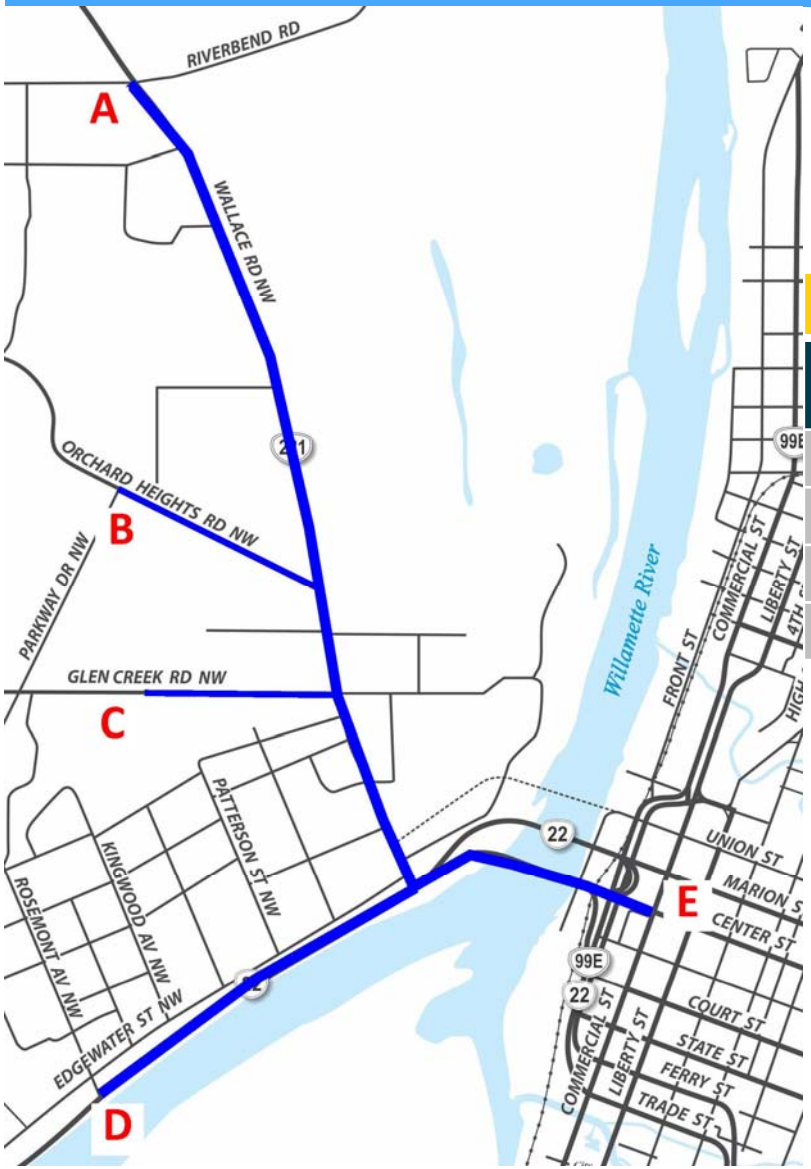
Solution Package – Center Bridge #1

"Bottleneck" Improvements at Commercial St/Trade St

Assumptions:

- Dual exclusive through lanes, dual exclusive right turn lanes
- Carry the outside EBR turn lane back 500 feet
- Would require right-of-way

Solution Package – Center Bridge #1



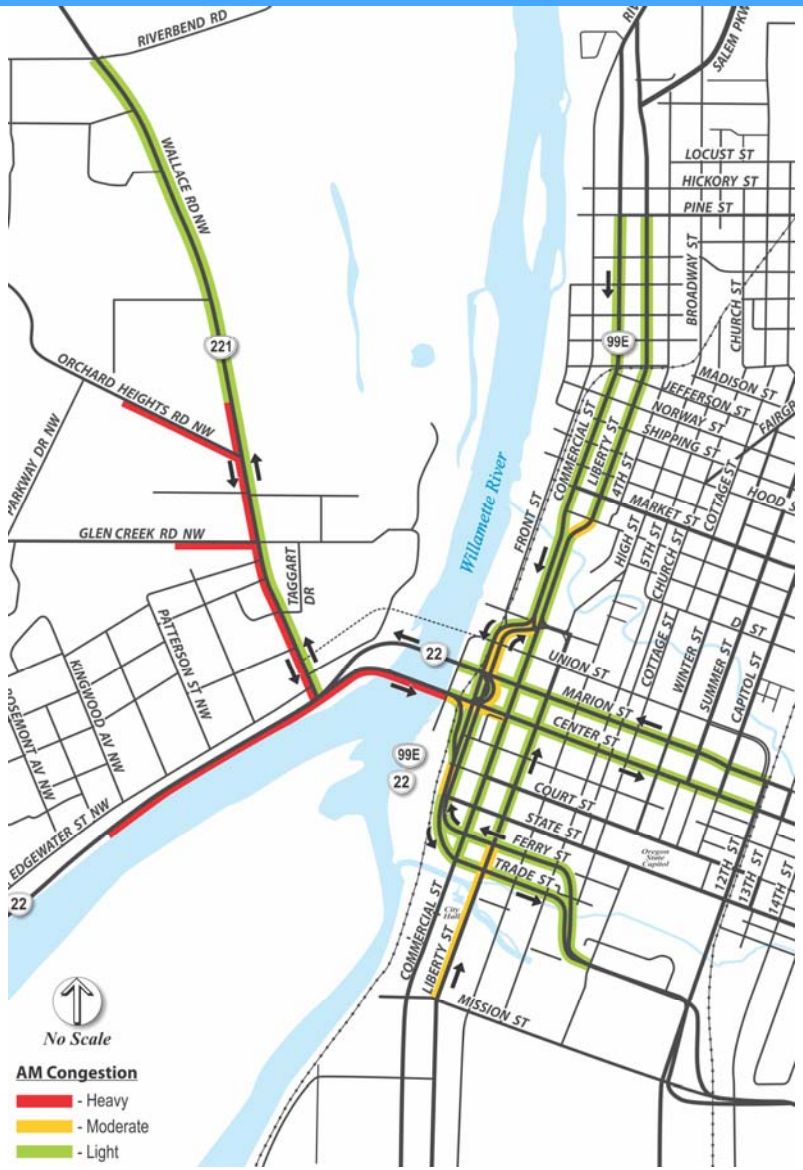
Travel Times (mins)

Start	End	AM Peak (Existing)	**AM Peak (Build 2018)**	**AM Peak (Build 2028)**
A	E	11 mins	**6 mins**	**10 min**
B	E	10 mins	**5 mins**	**9 min**
C	E	7 mins	**4 mins**	**7 min**
D	E	5 mins	**3 mins**	**5 min**

Solution Package – Center Bridge #1

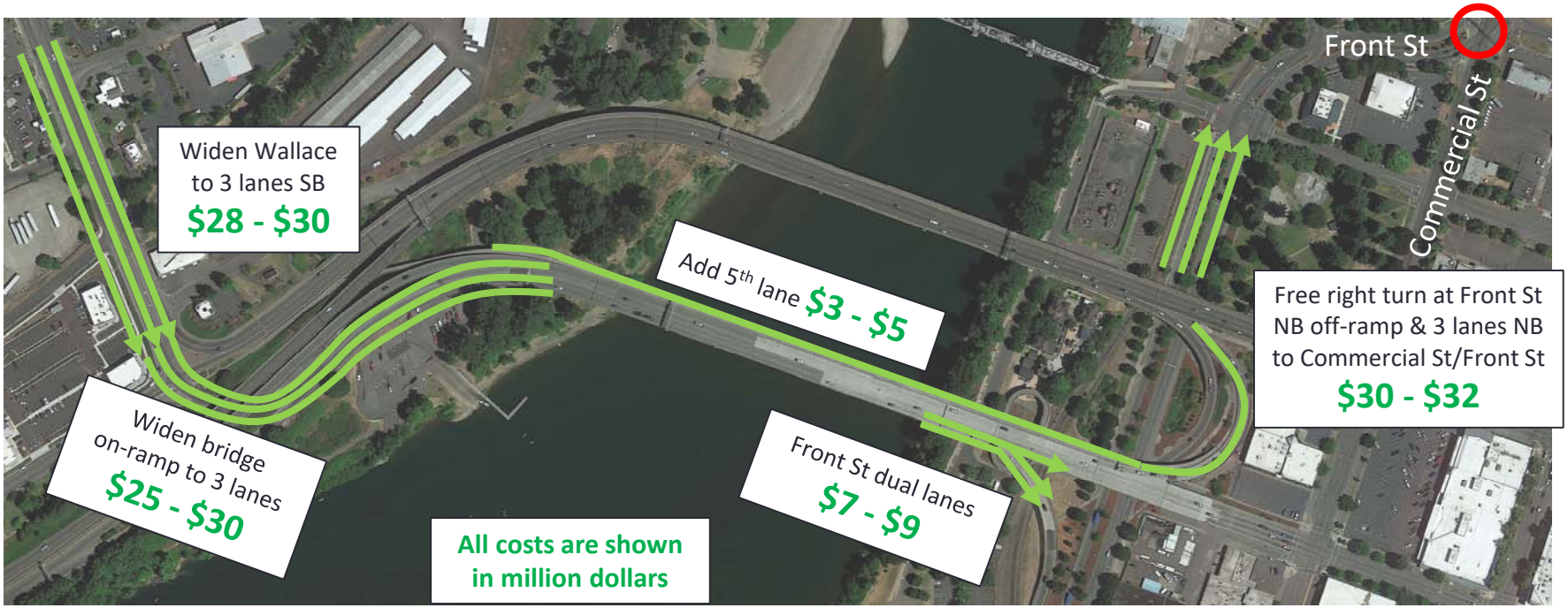
Queuing – 2028 AM Peak

- Improves queuing and congestion on Wallace Rd
- Congestion would return to current conditions by approximately year 2030 (12 years of growth)
- Maintains similar operations for Highway 22



Solution Package – Center Bridge #1

Cost Estimate



Summary:

Total: $100 million - $115 million

"Bottleneck" improvements at Commercial St/Trade St
$7 - $9

Solution Packages – Marion St Bridge

Package #1a (Marine Dr) #1b (Wallace Rd)

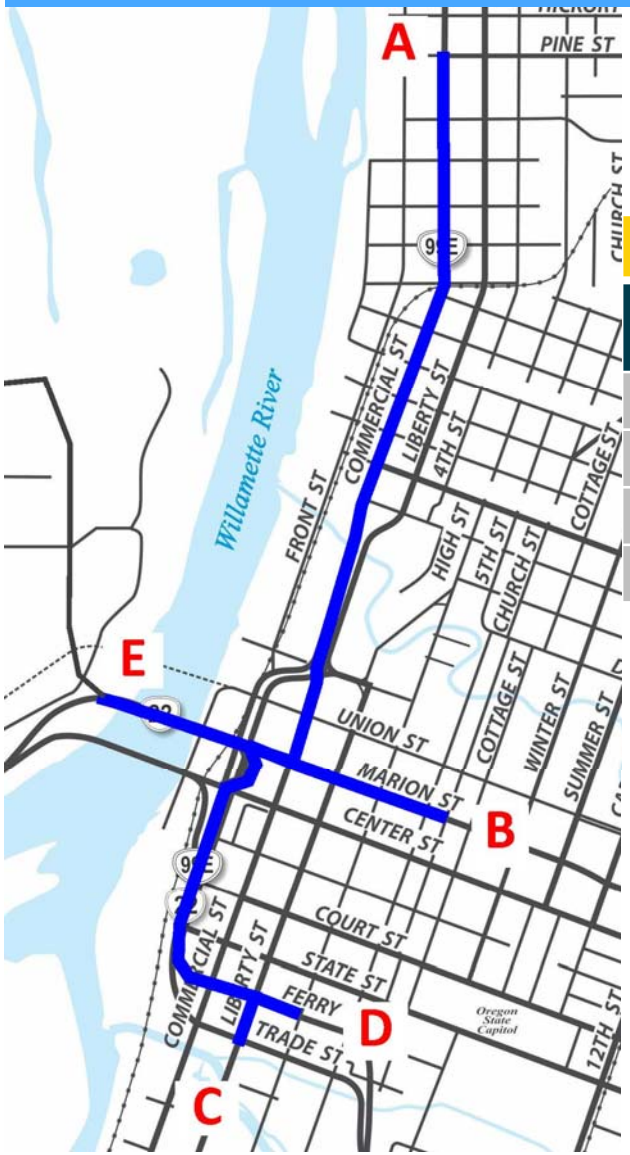
Summary:

Improves Front Street, Marion St, and Wallace

Worsens Commercial St

Maximum capacity of package = 900 vph

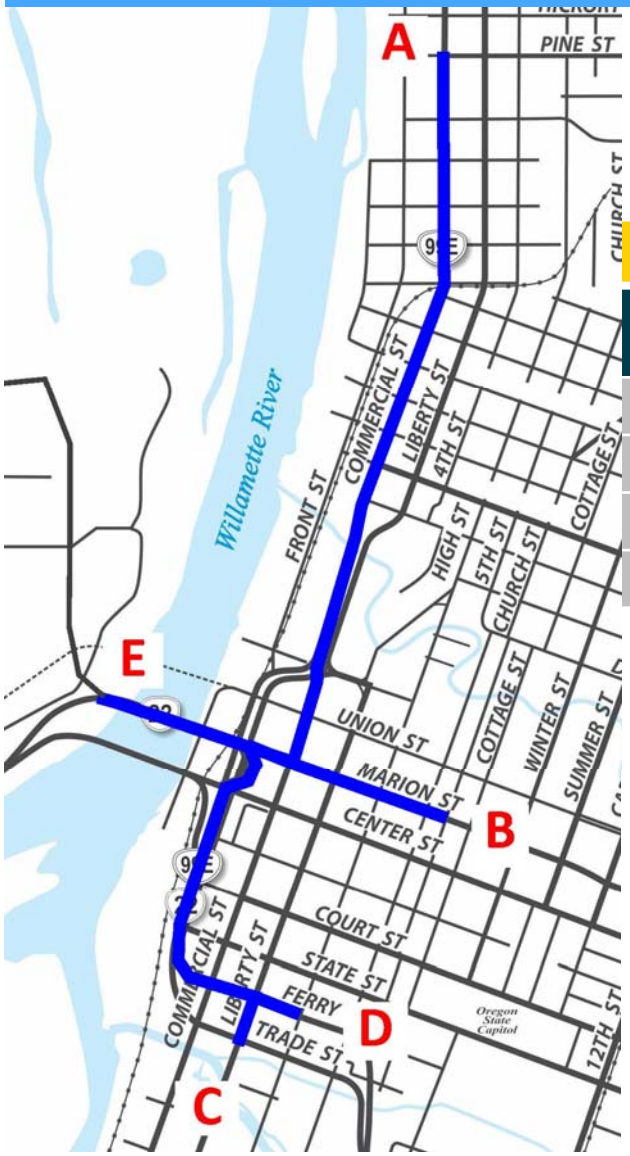
Solution Package – Marion Bridge #1a (Marine Drive)



Travel Times (mins)

Start	End	PM Peak (Existing)	**PM Peak (Build 2018)**	**PM Peak (Build 2028)**
A	E	12 mins	**22 mins**	**36 mins**
B	E	9 mins	**5 mins**	**10 mins**
C	E	8 mins	**15 mins**	**22 mins**
D	E	8 mins	**16 mins**	**23 mins**

Solution Package – Marion Bridge #1b (Wallace Rd)



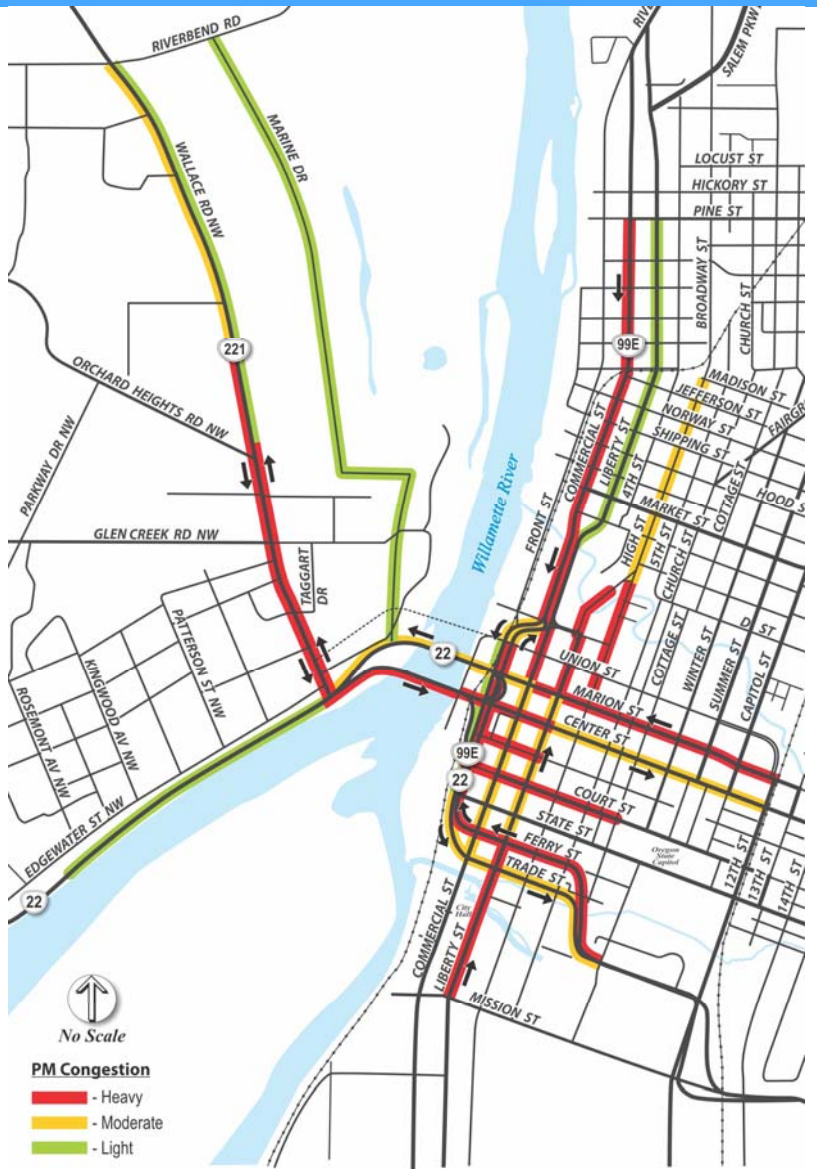
Travel Times (mins)

Start	End	PM Peak (Existing)	**PM Peak (Build 2018)**	**PM Peak (Build 2028)**
A	E	12 mins	**20 mins**	**32 mins**
B	E	9 mins	**4 mins**	**9 mins**
C	E	8 mins	**13 mins**	**20 mins**
D	E	8 mins	**16 mins**	**22 mins**

Solution Package – Marion Bridge #1

Queuing – 2028 PM Peak

- Rerouted Front St traffic causes additional delay on Center Bridge and backs up into west Salem
- Increases queuing and congestion on Front St NB, Liberty St, Ferry St, and Commercial St SB
- Marion St – only facility with short-term improvements



Solution Package – Marion Bridge #1a

Cost Estimate (with Marine Dr)

Summary:

Total #1a (with Marine Dr): $80 million - $95 million

Solution Package – Marion Bridge #1b

Cost Estimate (with Wallace Rd)

Summary:

Total #1b (with Wallace Rd): $55 million - $65 million

Solution Packages – Marion St Bridge

Package #2a (Marine Dr) and #2b (Wallace Rd)

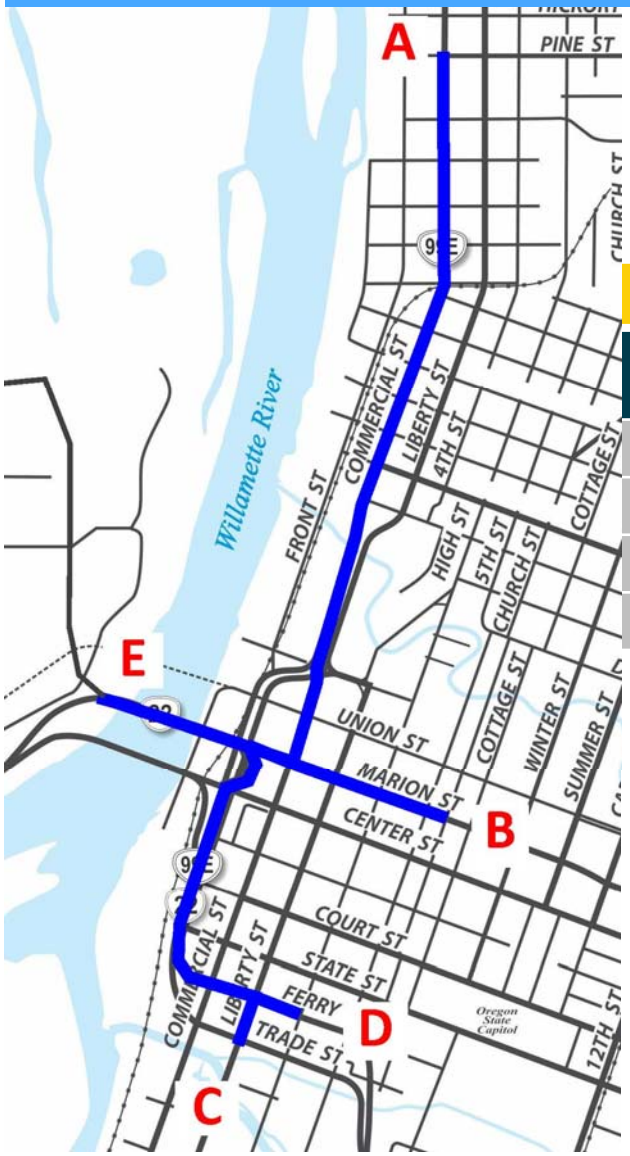
Summary:

Improves Front Street, Commercial St, and Wallace

No improvements for Marion St

Maximum capacity of package = 850 vph

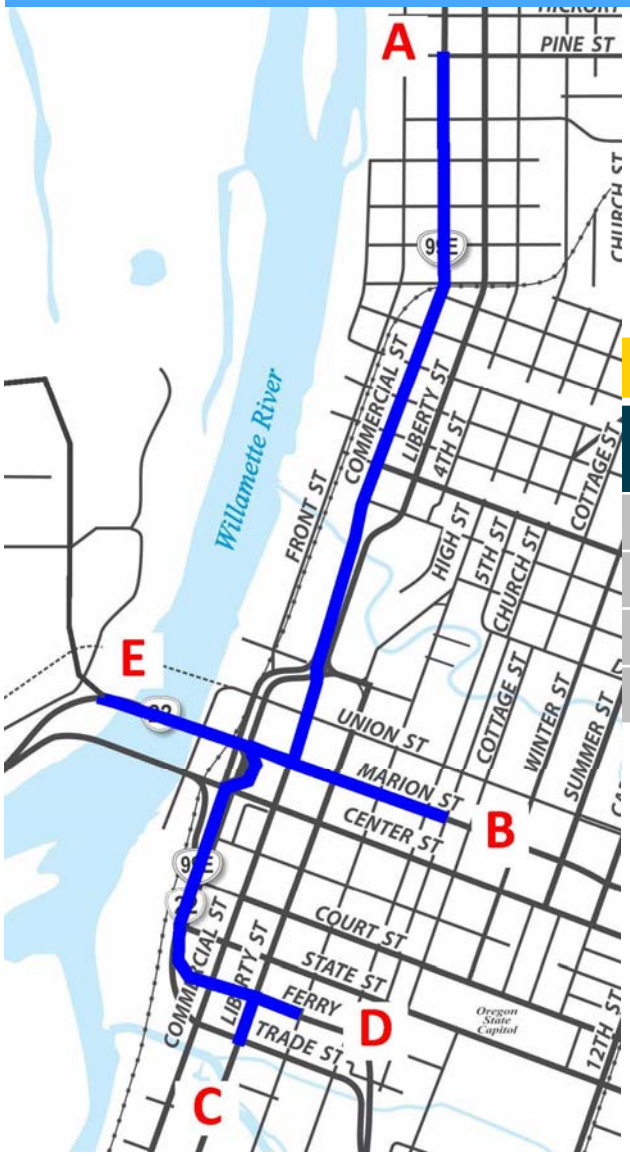
Solution Package – Marion Bridge #2a (Marine Dr)



Travel Times (mins)

Start	End	PM Peak (Existing)	**PM Peak (Build 2018)**	**PM Peak (Build 2028)**
A	E	12 mins	**20 mins**	**21 mins**
B	E	9 mins	**9 mins**	**13 mins**
C	E	8 mins	**13 mins**	**14 mins**
D	E	8 mins	**14 mins**	**15 mins**

Solution Package – Marion Bridge #2b (Wallace Rd)



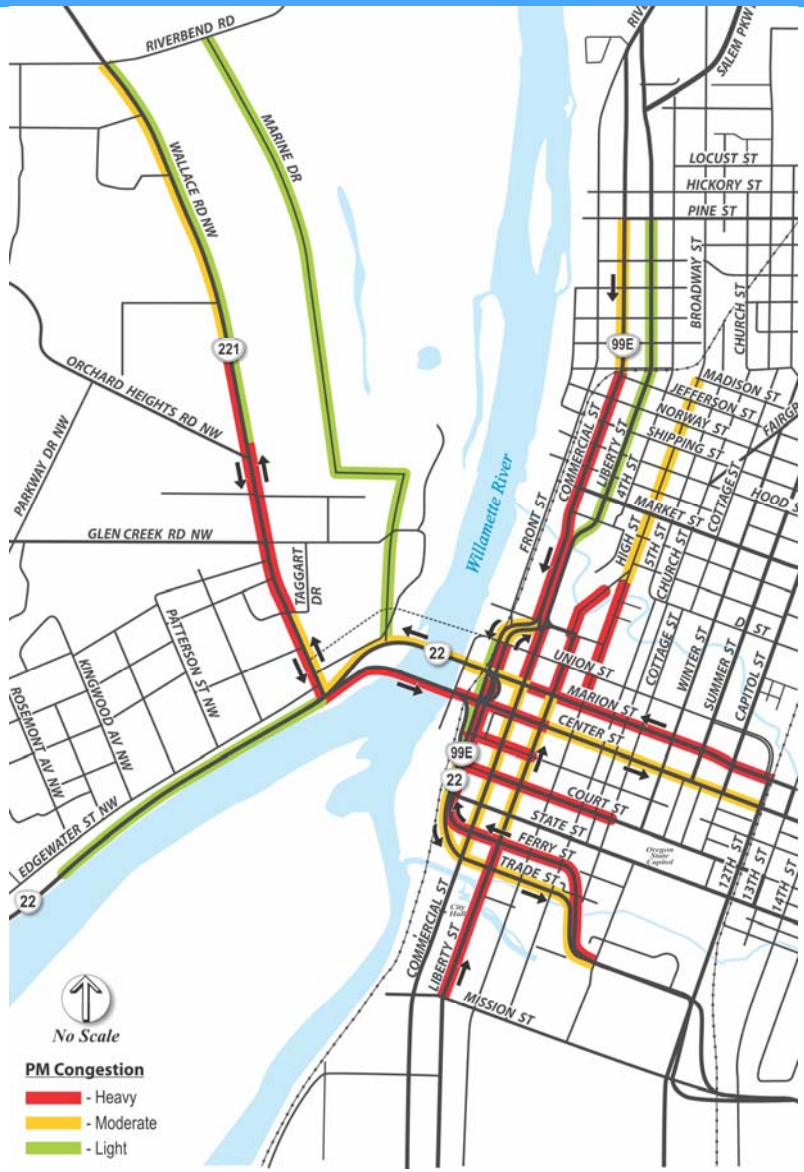
Travel Times (mins)

Start	End	PM Peak (Existing)	**PM Peak (Build 2018)**	**PM Peak (Build 2028)**
A	E	12 mins	**18 mins**	**19 mins**
B	E	9 mins	**9 mins**	**13 mins**
C	E	8 mins	**13 mins**	**14 mins**
D	E	8 mins	**14 mins**	**15 mins**

Solution Package – Marion Bridge #2

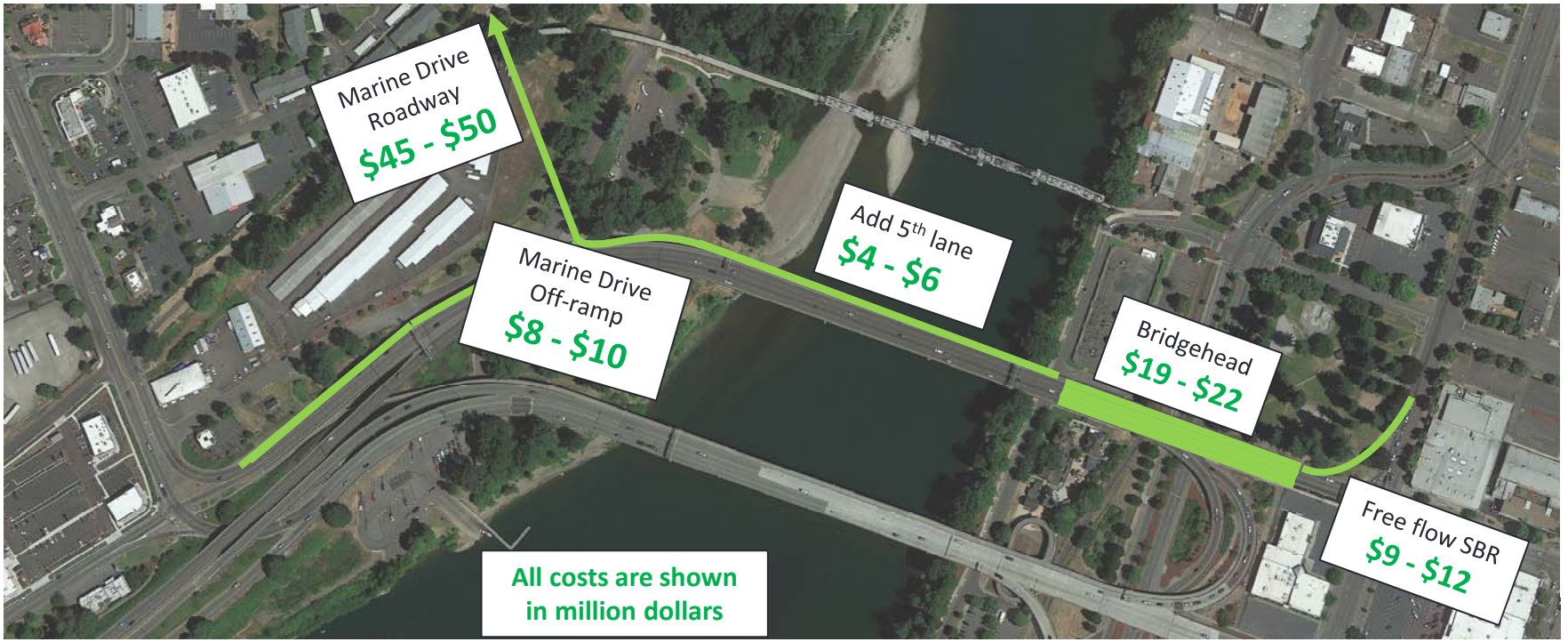
Queuing – 2028 PM Peak

- Rerouted Front St traffic causes additional delay on Center Street Bridge and backs up into west Salem
- Increases queuing and congestion on Front St NB, Ferry St, Liberty St, Marion St, and Commercial St SB



Solution Package – Marion Bridge #2a

Cost Estimate (with Marine Dr)



Summary:

Total #2a (with Marine Dr): $85 million - $100 million

Solution Package – Marion Bridge #2b

Cost Estimate (with Wallace Road)

Summary:

Total #2b (with Wallace Rd): $60 million - $70 million

Solution Packages – Marion St Bridge

Package #4a (Marine Drive) and #4b (Wallace Rd)

Summary:

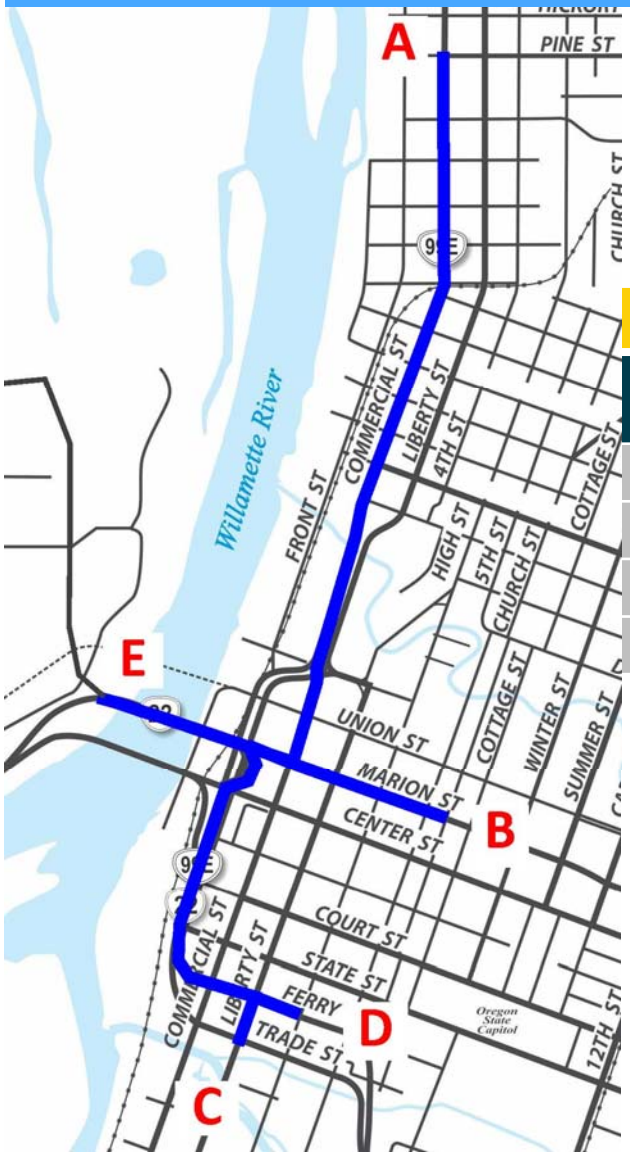
Improves Commercial St, Marion St, and Wallace

Weaving on bridge still occurs and with five lanes, **previously not endorsed by ODOT**

No improvements for Front St

Maximum capacity of package = 900 vph

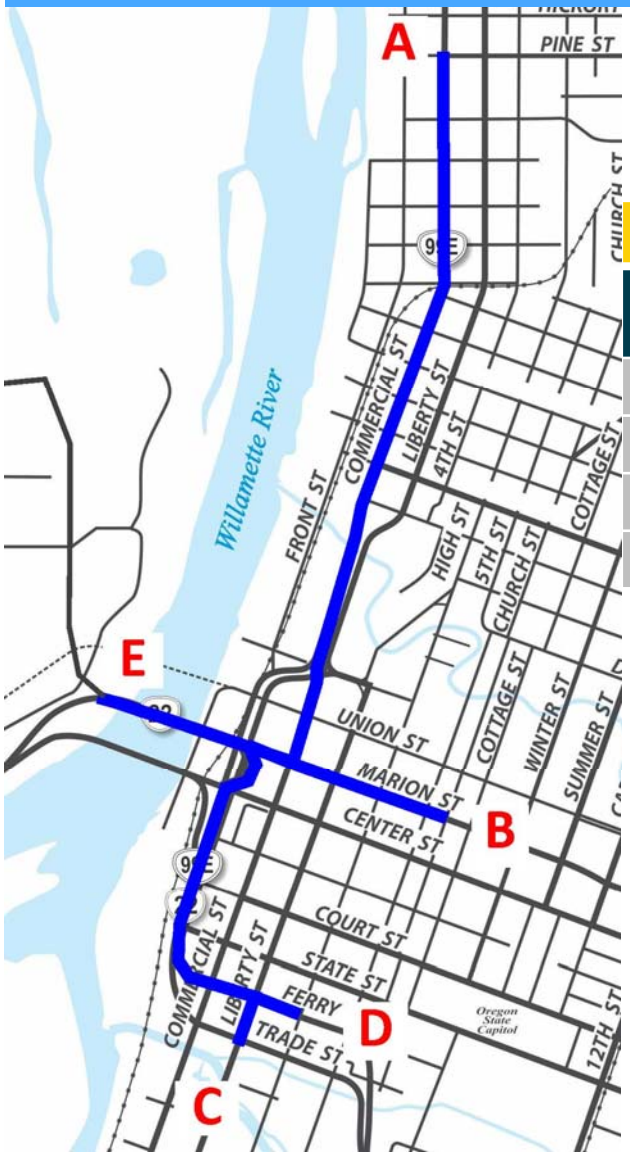
Solution Package – Marion Bridge #4a (Marine Dr)



Travel Times (mins)

Start	End	PM Peak (Existing)	**PM Peak (Build 2018)**	**PM Peak (Build 2028)**
A	E	12 mins	**9 mins**	**11 mins**
B	E	9 mins	**5 mins**	**13 mins**
C	E	8 mins	**8 mins**	**10 mins**
D	E	8 mins	**8 mins**	**10 mins**

Solution Package – Marion Bridge #4b (Wallace Rd)



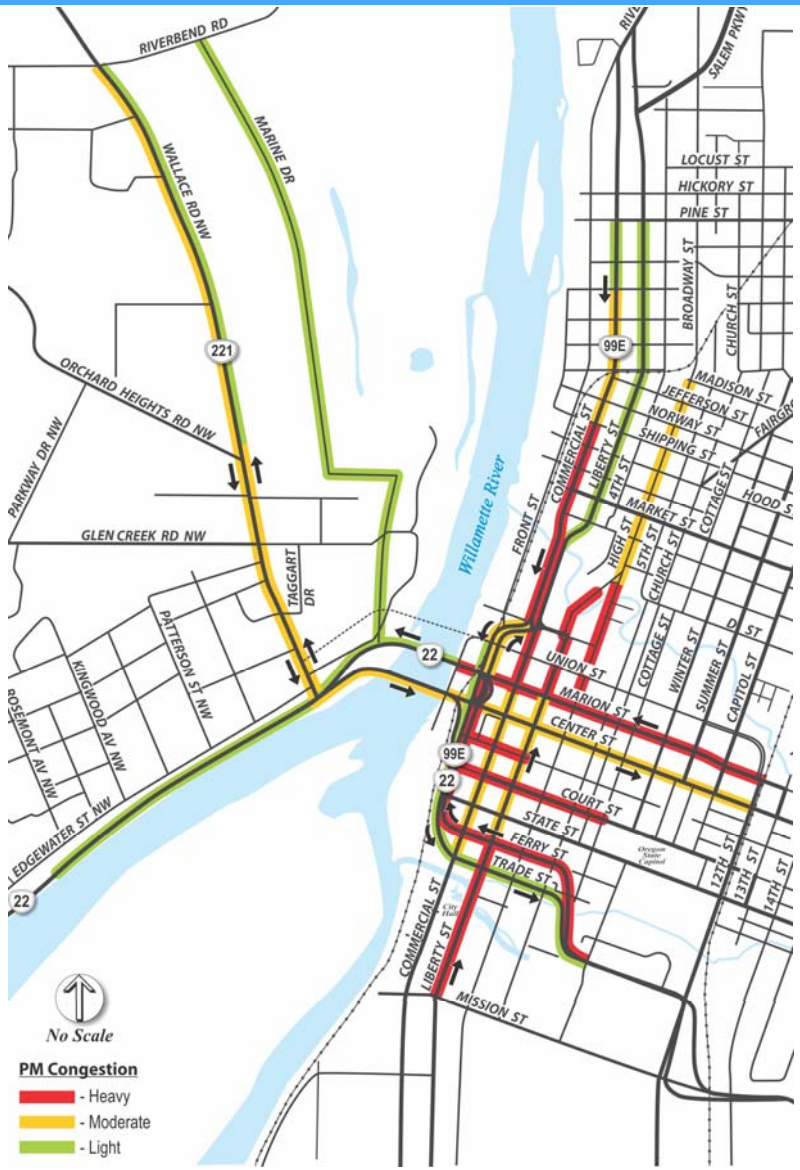
Travel Times (mins)

Start	End	PM Peak (Existing)	**PM Peak (Build 2018)**	**PM Peak (Build 2028)**
A	E	12 mins	**8 mins**	**10 mins**
B	E	9 mins	**4 mins**	**12 mins**
C	E	8 mins	**8 mins**	**10 mins**
D	E	8 mins	**8 mins**	**10 mins**

Solution Package – Marion Bridge #4

Queuing – 2028 PM Peak

- Commercial St – reduced queuing and congestion
- Marion St – short-term reduced queuing and congestion
- No improvement to Front St NB, Ferry St, or Liberty St



Solution Package – Marion Bridge #4a

Cost Estimate (with Marine Dr)

Summary:

Total #4a (with Marine Dr): $80 million - $95 million

Solution Package – Marion Bridge #4b

Cost Estimate (with Wallace Rd)

Summary:

Total #4b (with Wallace Rd): $55 million - $65 million

Solution Package Review Table

	Center Bridge #1	Marion Bridge #1a (Marine)	Marion Bridge #1b (Wallace)	Marion Bridge #2a (Marine)	Marion Bridge #2b (Wallace)	Marion Bridge #4a (Marine)	Marion Bridge #4b (Wallace)
Travel Times	**2018:** Improved from existing conditions **2028:** At or just better than existing conditions	**2018:** Worsened from existing conditions except Marion St **2028:** Worsened further	**2018:** Slight improvement to Marion Bridge #1a **2028:** Slight improvement to Marion Bridge #1a	**2018:** Worsened from existing conditions **2028:** Worsened further	**2018:** Slight improvement to Marion Bridge #2a **2028:** Slight improvement to Marion Bridge #2a	**2018:** At or better than existing conditions **2028:** At or just worse than existing conditions	**2018:** Slight improvement to Marion Bridge #4a **2028:** Slight improvement to Marion Bridge #4a
Queuing	**2028:** Reduced queuing on Wallace Rd SB and Front St	**2028:** Additional queuing on Liberty St NB, Trade St, Commercial St, Front St NB, and Wallace Rd NB	**2028:** Similar to Marion Bridge #1a	**2028:** Additional queuing on Liberty St NB, Trade St, Commercial St, Front St NB, and Wallace Rd NB	**2028:** Similar to Marion Bridge #2a	**2028:** Reduced queuing on Commercial St and Marion St	**2028:** Similar to Marion Bridge #4a
Cost Estimate	$100 - $115 million	$80 - $95 million	$55 - $65 million	$85 - $100 million	$60 - $70 million	$80 - $95 million	$55 - $65 million

Key Findings

- Center Bridge Solution Package
  - Center Bridge Package #1 was best option and had no fatal flaws.
- Marion Bridge Solution Package Selection
  - Marion Bridge Package #4 has similar or reduced travel times and queuing in short-term and mid-term.
  - Marion Bridge Packages #1 and #2 do not satisfy the project goal to relieve congestion in the study area.
- Wallace Road vs. Marine Drive
  - Building Marine Dr only provides increased capacity to Marion Bridge, widening Wallace Rd on both sides provides capacity for both bridges.
  - For all Marion Bridge Solution Packages, better travel times with Wallace Rd than Marine Dr because there is less weaving required.
  - Marine Dr requires environmental and park impacts.

Cost Estimate for Solution Package Combinations

Solution Package Combinations	Total Cost Estimate Range (million)
Marion Bridge #1a (Marine Dr) & Center Bridge #1	**$180 - $210**
Marion Bridge #1b (Wallace Rd) & Center Bridge #1	**$155 - $180**
Marion Bridge #2a (Marine Dr) & Center Bridge #1	**$185 - $215**
Marion Bridge #2b (Wallace Rd) & Center Bridge #1	**$160 - $185**
Marion Bridge #4a (Marine Dr) & Center Bridge #1	**$180 - $210**
Marion Bridge #4b (Wallace Rd) & Center Bridge #1	**$155 - $180**