

CONGESTION RELIEF TASK FORCE

A Technical Review of Transportation Infrastructure Options



Task Force Meeting #3, May 18, 2018



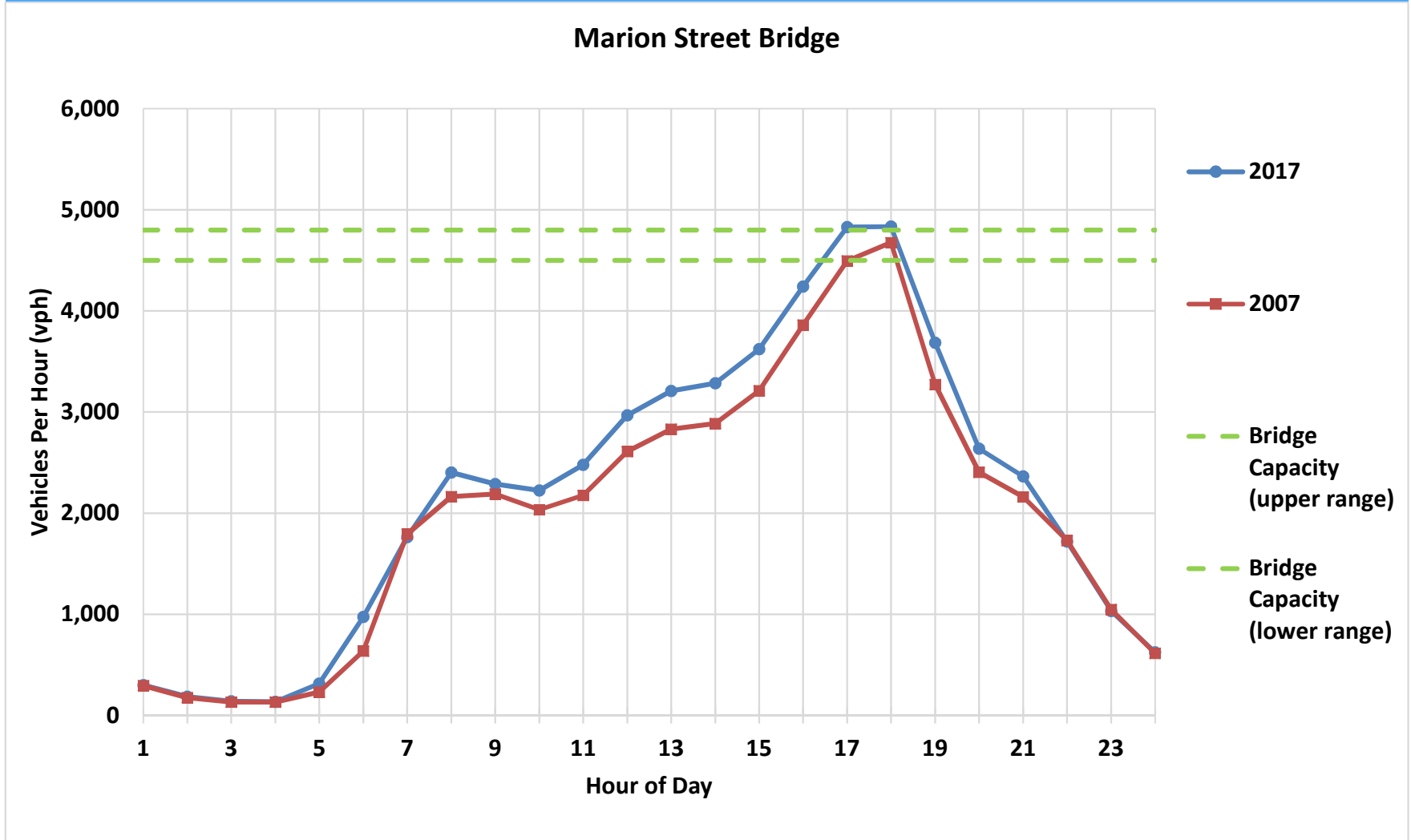
Prepared by DKS Associates



Agenda

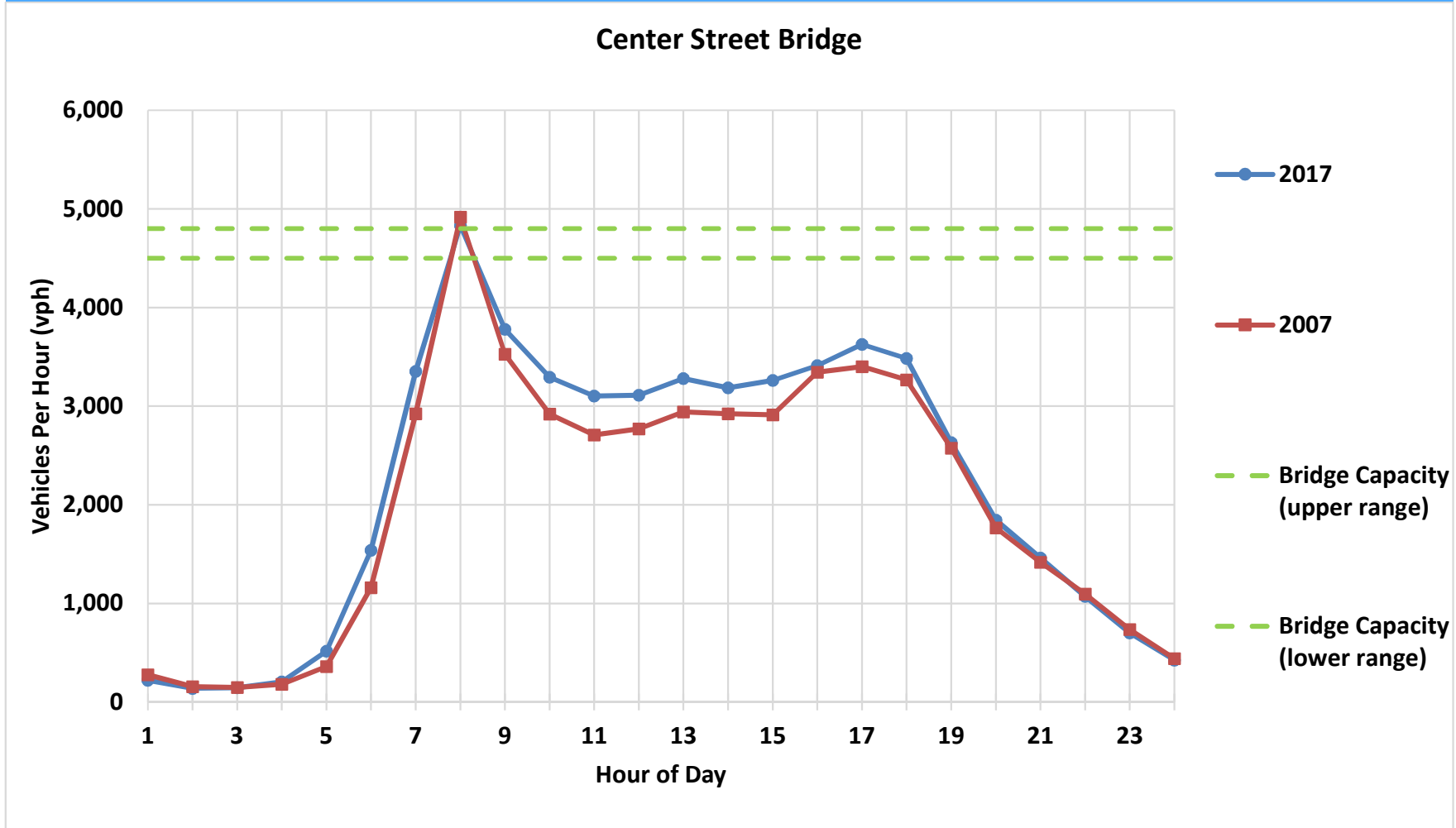
- Agenda Review and Meeting #2 Recap
- Capacity Relationship Concept
- Transportation Solutions
- Evaluation of Solution Packages
- Wrap-up and Next Steps

Average Hourly Weekday Volumes



Average typical weekday data from April to June of 2007 and 2017

Average Hourly Weekday Volumes



Average typical weekday data from April to June of 2007 and 2017

Capacity Relationship Concept



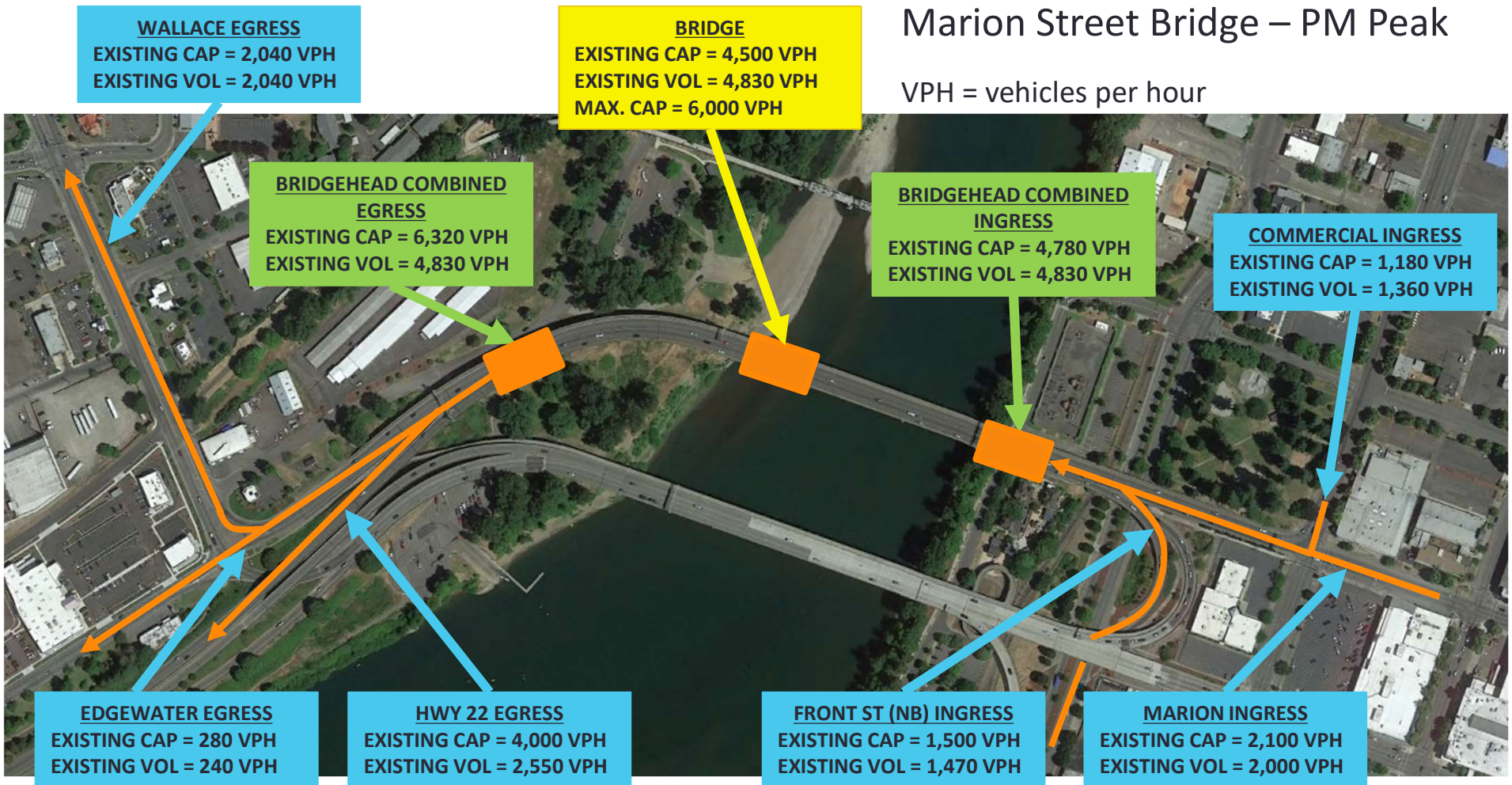
Capacity Relationship Concept



Bridge and Bridgehead Capacity Summary

Marion Street Bridge – PM Peak

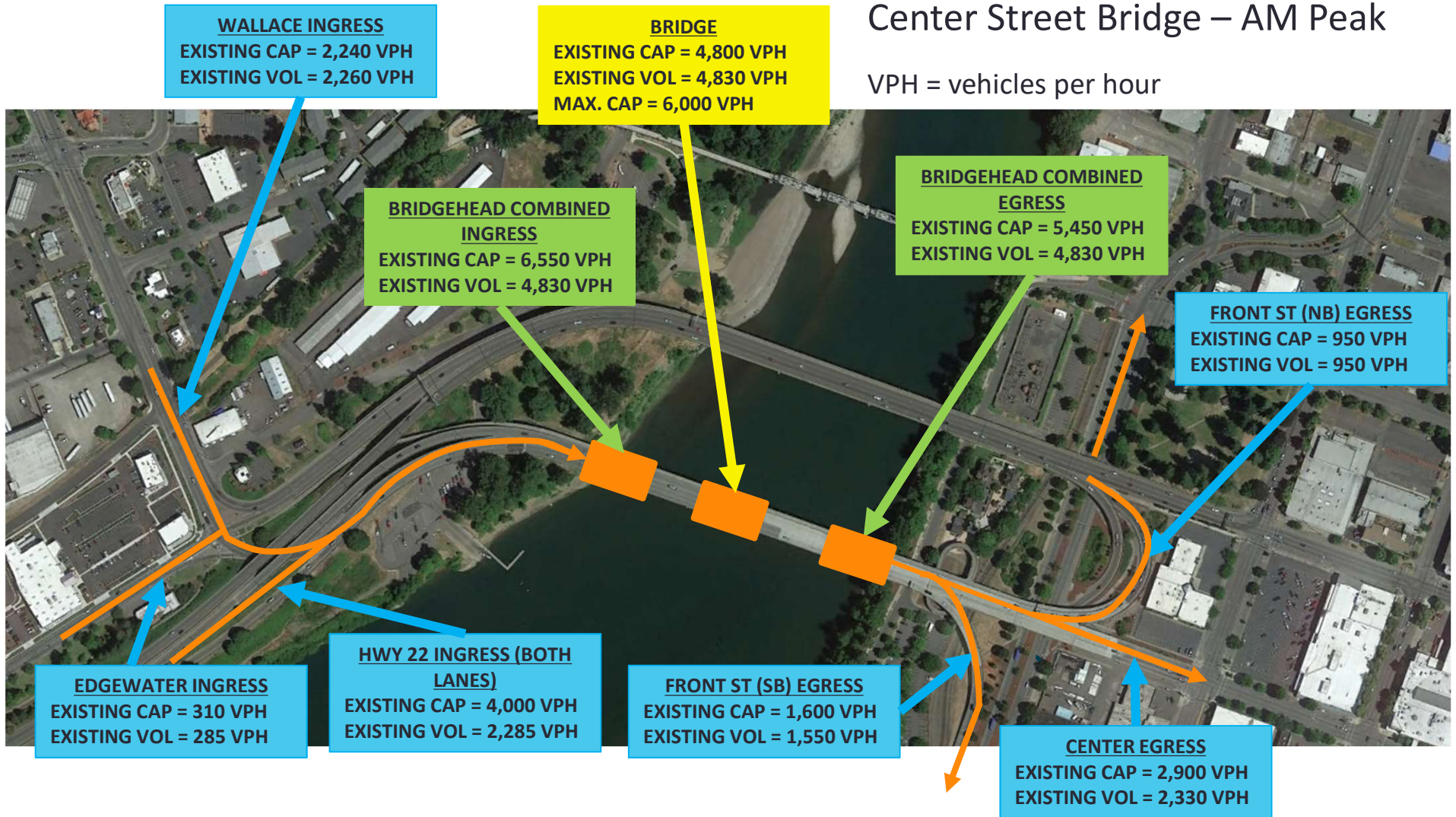
VPH = vehicles per hour



Bridge and Bridgehead Capacity Summary

Center Street Bridge – AM Peak

VPH = vehicles per hour



Solutions

Based on previous bridgehead/bridge capacity summary figures, we need solution “packages” rather than just one or two individual solutions. Only addressing one specific capacity issue will not solve overall congestion.

Marion Street Bridge

- Slides 12 – 16 are individual solutions identified at Marion St bridgeheads/bridges
- Slides 17 – 20 are Marion St Solution Packages (x4)
- Slides 21 is Marion St Bridge Solution Package Matrix

Center Street Bridge

- Slides 22 – 28 are individual solutions identified at Center St bridgeheads/bridges
- Slides 29 – 31 are Center St Solution Packages (x3)
- Slides 32 is Center St Bridge Solution Package Matrix

All solutions shown are high-level analysis.

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Solution Package Evaluation – Marion Bridge

	Package #1	Package #2	Package #3	Package #4
Maximum Capacity of Package	Ingress: 900 vph Bridge: 2,000 vph <u>Egress: 900 vph</u> Package: 900 vph	Ingress: 850 vph Bridge: 2,000 vph <u>Egress: 900 vph</u> Package: 850 vph	Ingress: 1,400 vph Bridge: 2,000 vph <u>Egress: 1,650 vph</u> Package: 1,400 vph	Ingress: 900 vph Bridge: 1,000 vph <u>Egress: 900 vph</u> Package: 900 vph
Years of Capacity	Commercial St: 0 yrs Marion St: 9 yrs Front St: 20 yrs Bridge: 8 yrs ----- Marine Dr: 20 yrs OR Wallace Rd: 20 yrs	Commercial St: 0 yrs Marion St: 0 yrs Front St: 20 yrs Bridge: 7 yrs ----- Marine Dr: 20 yrs OR Wallace Rd: 20 yrs	Commercial St: 7 yrs Marion St: 0 yrs Front St: 20 yrs Bridge: 15 yrs Marine Dr: 20 yrs Wallace Rd: 20 yrs	Commercial St: 7 yrs Marion St: 9 yrs Front St: 0 yrs Bridge: 8 yrs ----- Marine Dr: 20 yrs OR Wallace Rd: 20 yrs
Cost (\$ - \$\$\$\$)	\$	\$	\$	\$
Park Impacts	Wallace Marine Park Marion Square Park	Wallace Marine Park Marion Square Park	Wallace Marine Park Marion Square Park	Wallace Marine Park
On-street Parking Impacts	Marion St	-	-	Marion St
Safety	(+) Removes weaving (-) Union-Commercial Bike/Ped conflicts	(+) Removes weaving (-) Union-Commercial Bike/Ped conflicts	(+) Removes weaving	(-) Weaving worsens with five lanes
Property Impacts	Wallace Rd	Wallace Rd	Wallace Rd	Wallace Rd
Key Issues	Worsens Commercial St	No improvements to Marion St	No improvements to Marion St	No improvements for Front St, (not endorsed by ODOT)

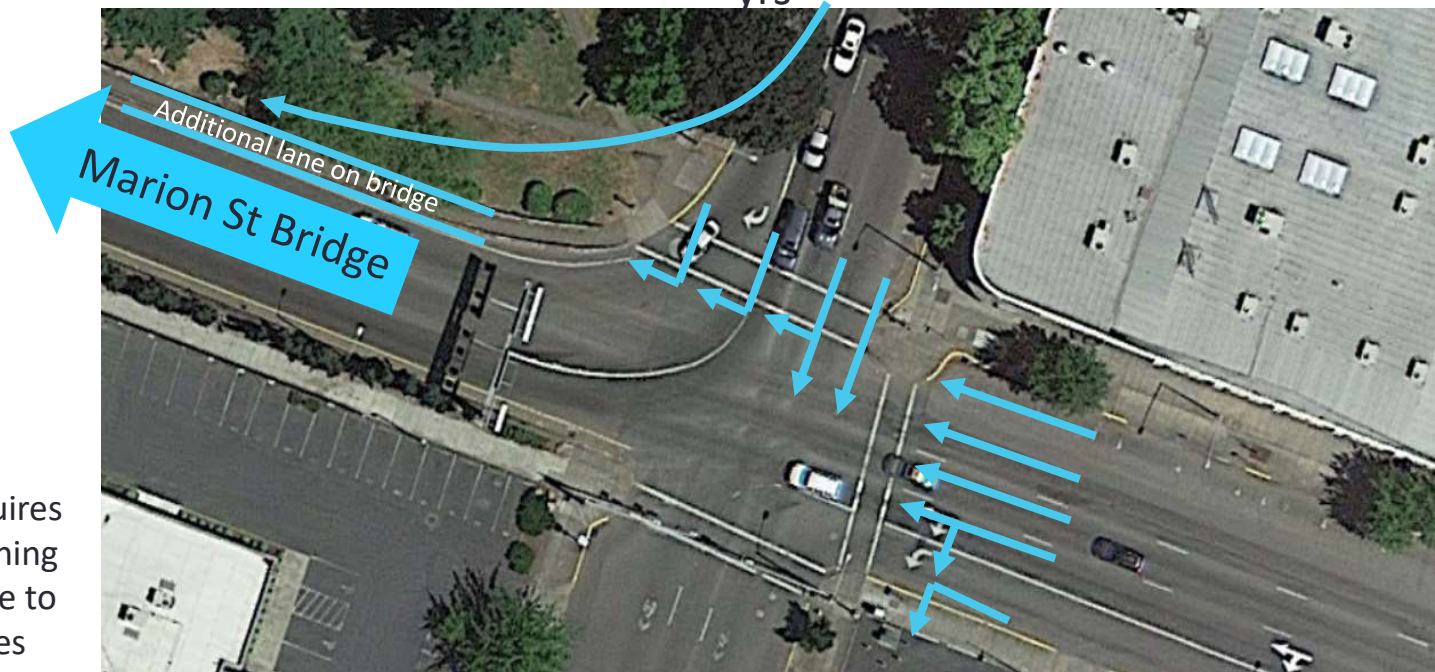
Solutions – Marion St Bridgehead

Commercial Street Ingress Solutions

1. Triple southbound right turn lanes onto Bridge (+400 vph or 34% increase)
2. Single free right turn ramp onto Bridge to Marine Drive only* (+850 vph)

Marion Street Ingress Solutions

1. Remove parking, add additional WB travel lane* (+500 vph or 24%)

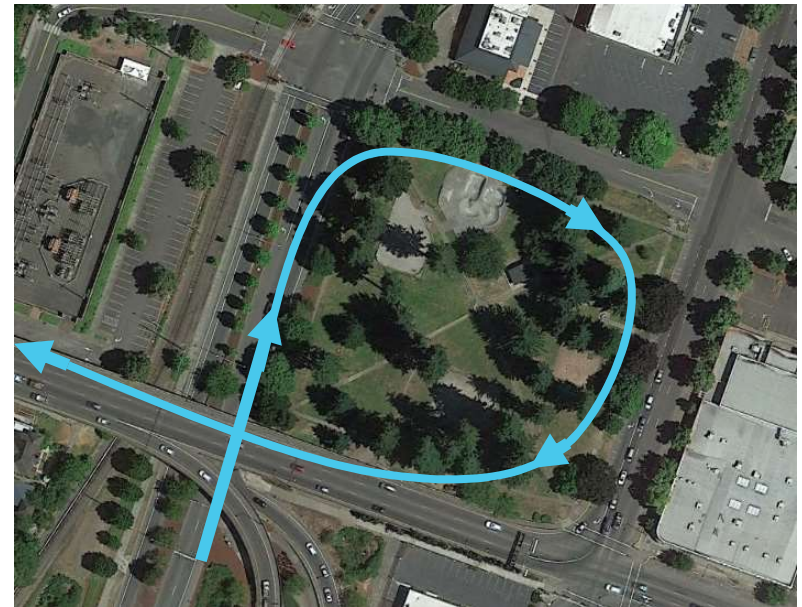


*requires widening bridge to 5 lanes

Solutions – Marion St Bridgehead

Front Street Ingress Solutions

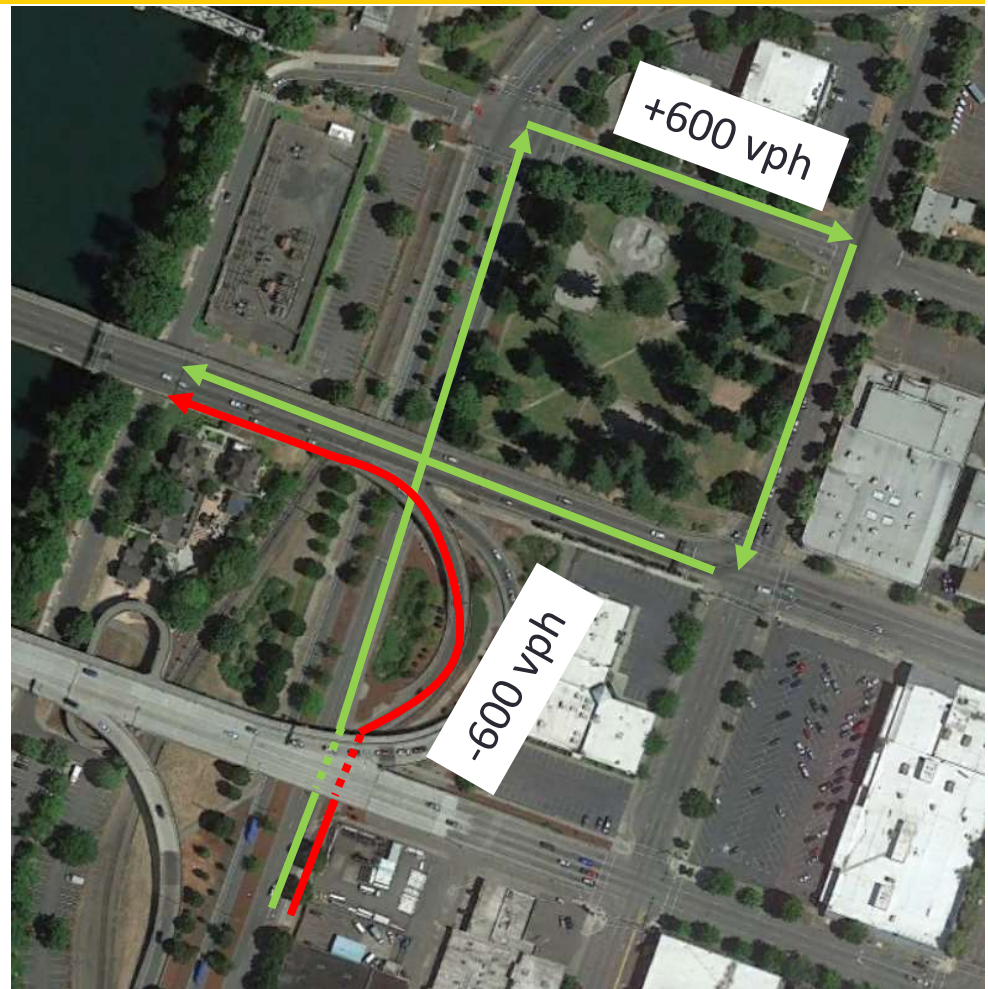
1. Add a loop ramp from Front St (NB) over Marion Square Park on Marion St Bridge (+1,000 vph)
 - Requires 5th lane on bridge
 - Eliminates potential capacity improvements on Marion Street and Commercial Street as previously noted



Solutions – Marion St Bridgehead

Front Street Ingress Solutions

2. Remove weaving on bridge
 - No improvements, requires restricting Front Street on-ramp (red) to Hwy22 volumes only. Removed 600 vehicles headed to West Salem rerouted to Union St and Commercial St (green)



Solutions – Marion St Bridge

Marion Bridge Solutions

1. Remove weaving – requires restricting vehicles on Front St on-ramp to Hwy 22 Egress only as shown in previous slide (+800 vph or 18% increase on bridge)
2. Add 5th lane - combine with remove weaving (+2,000 vph or 44% increase) – figure below

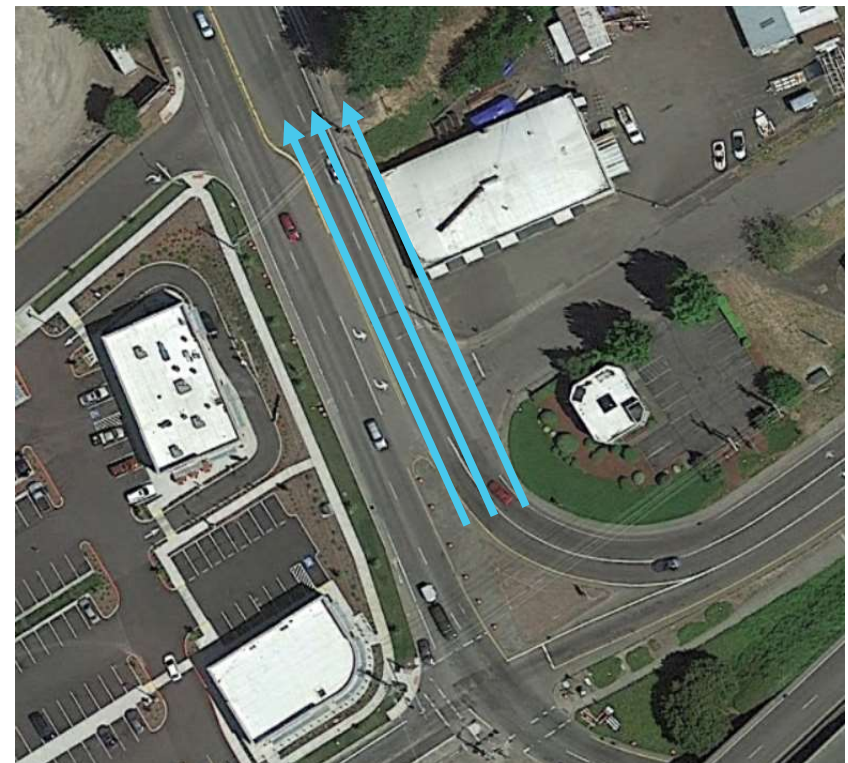


To add 5th lane on bridge, remove jersey barrier and sidewalk on north side of bridge

Solutions – Marion St Bridge

Wallace Road Egress Solutions

1. Marine Drive off-ramp (+900 vph) – figure left
2. Widen Wallace Road to 3 three receiving lanes up to Glen Creek Road (+750 vph or 37% increase) – figure right



Solution Packages – Marion St Bridge

Package #1

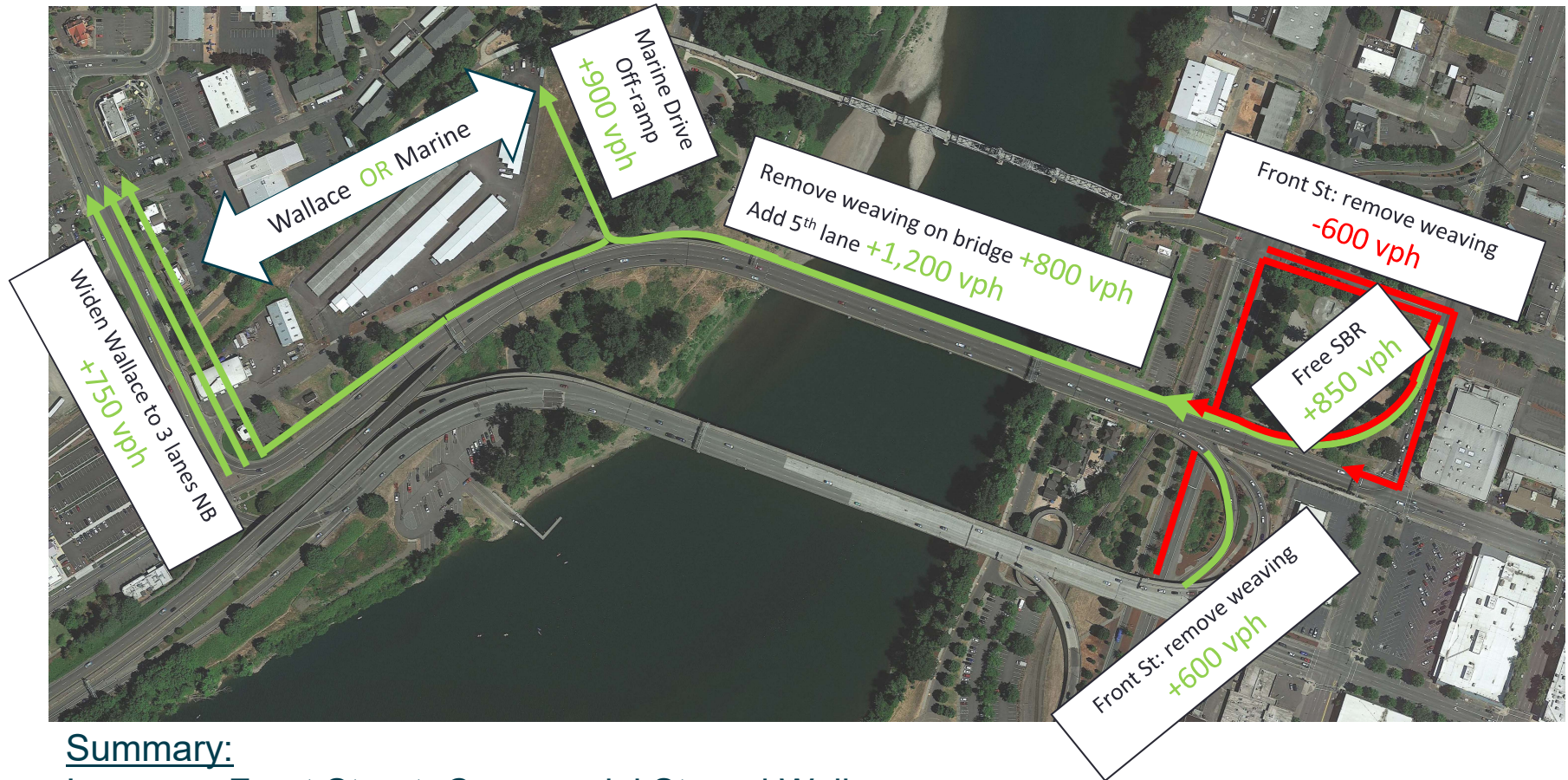


Summary:

Improves Front Street, Marion St, and Wallace
Worsens Commercial St
Maximum capacity of package = 900 vph

Solution Packages – Marion St Bridge

Package #2

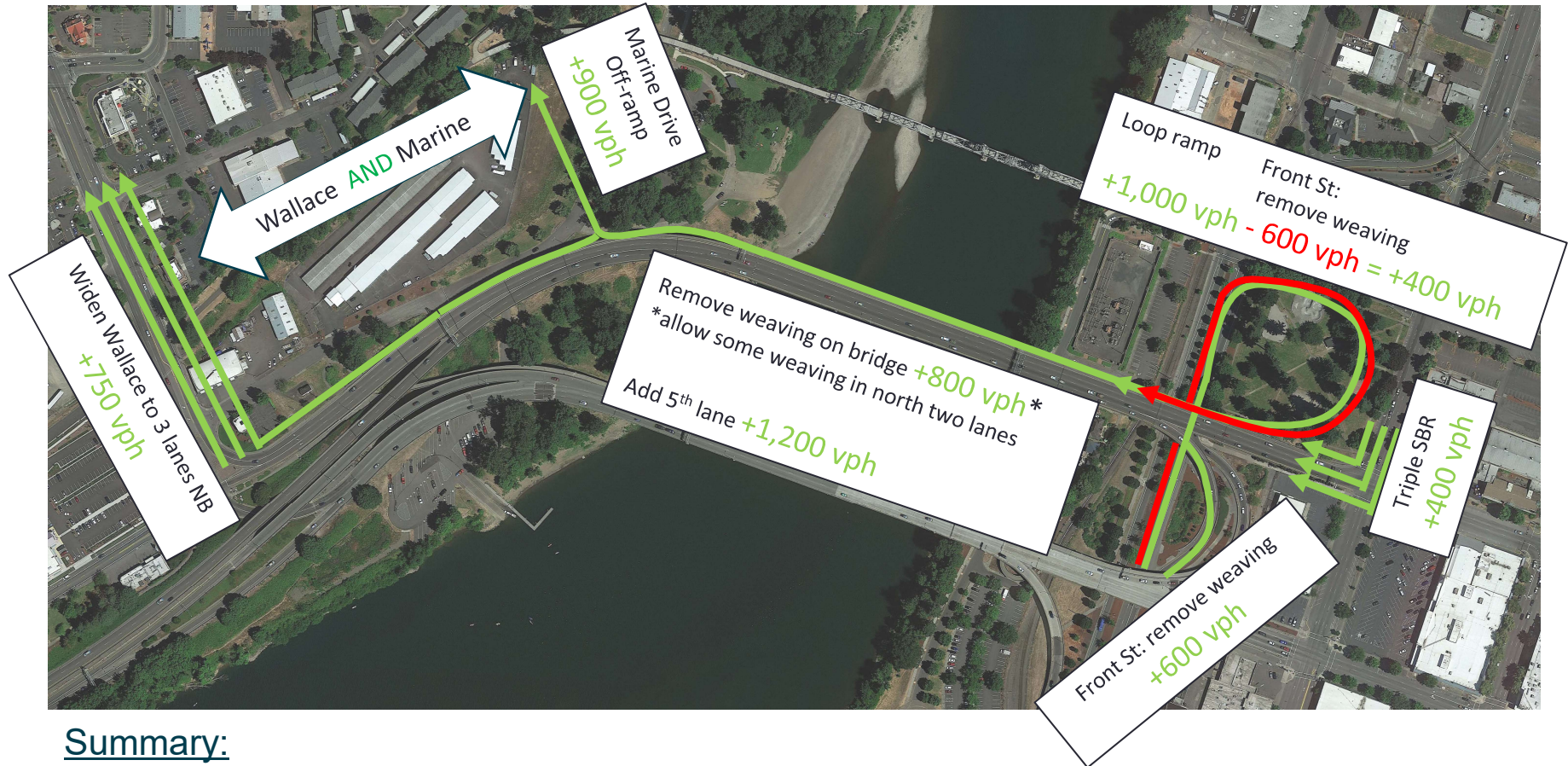


Summary:

Improves Front Street, Commercial St, and Wallace
No improvements for Marion St
Maximum capacity of package = 850 vph

Solution Packages – Marion St Bridge

Package #3



Summary:

Improves Front Street, Commercial St, and Wallace
No improvements for Marion St
Maximum capacity of package = 1,400 vph

Solution Packages – Marion St Bridge

Package #4



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

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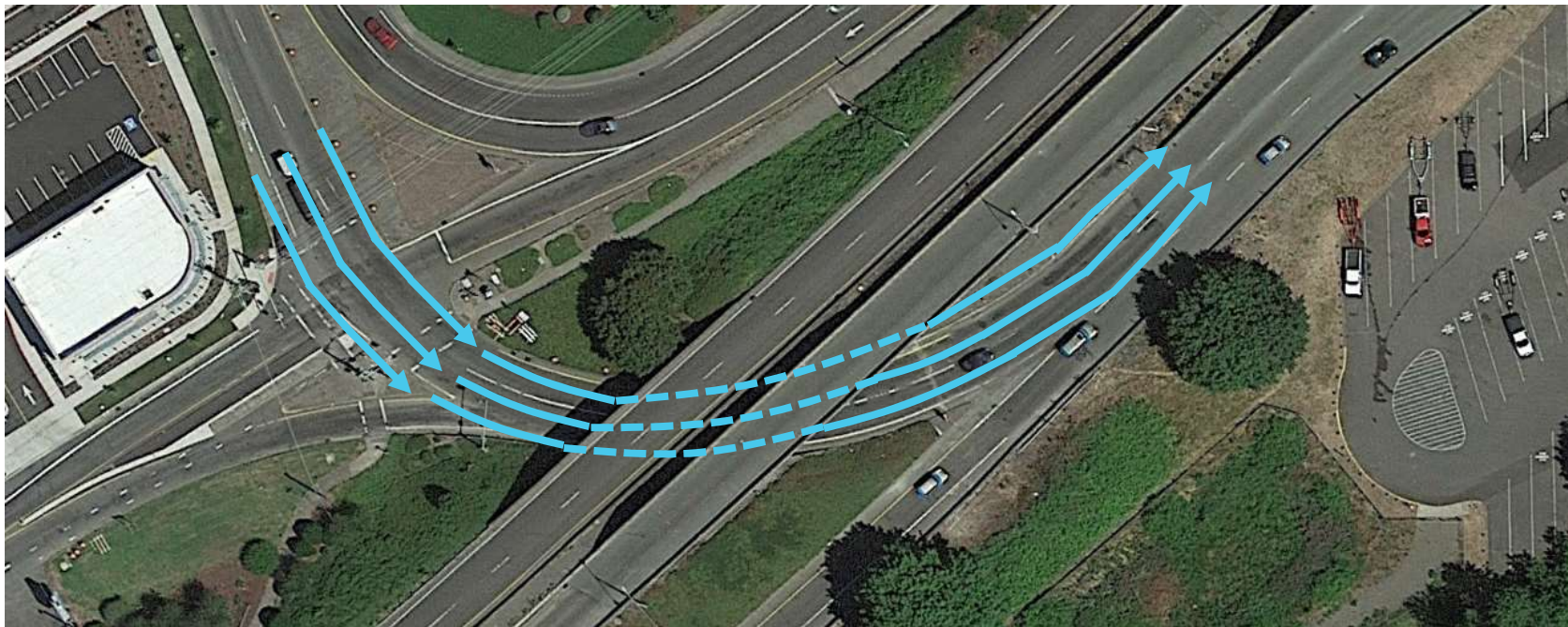
Solution Package Evaluation – Marion Bridge

	Package #1	Package #2	Package #3	Package #4
Maximum Capacity of Package	Ingress: 900 vph Bridge: 2,000 vph <u>Egress: 900 vph</u> Package: 900 vph	Ingress: 850 vph Bridge: 2,000 vph <u>Egress: 900 vph</u> Package: 850 vph	Ingress: 1,400 vph Bridge: 2,000 vph <u>Egress: 1,650 vph</u> Package: 1,400 vph	Ingress: 900 vph Bridge: 1,000 vph <u>Egress: 900 vph</u> Package: 900 vph
Years of Capacity	Commercial St: 0 yrs Marion St: 9 yrs Front St: 20 yrs Bridge: 8 yrs ----- Marine Dr: 20 yrs OR Wallace Rd: 20 yrs	Commercial St: 0 yrs Marion St: 0 yrs Front St: 20 yrs Bridge: 7 yrs ----- Marine Dr: 20 yrs OR Wallace Rd: 20 yrs	Commercial St: 7 yrs Marion St: 0 yrs Front St: 20 yrs Bridge: 15 yrs Marine Dr: 20 yrs Wallace Rd: 20 yrs	Commercial St: 7 yrs Marion St: 9 yrs Front St: 0 yrs Bridge: 8 yrs ----- Marine Dr: 20 yrs OR Wallace Rd: 20 yrs
Cost (\$ - \$\$\$\$)	\$	\$	\$	\$
Park Impacts	Wallace Marine Park Marion Square Park	Wallace Marine Park Marion Square Park	Wallace Marine Park Marion Square Park	Wallace Marine Park
On-street Parking Impacts	Marion St	-	-	Marion St
Safety	(+) Removes weaving (-) Union-Commercial Bike/Ped conflicts	(+) Removes weaving (-) Union-Commercial Bike/Ped conflicts	(+) Removes weaving	(-) Weaving worsens with five lanes
Property Impacts	Wallace Rd	Wallace Rd	Wallace Rd	Wallace Rd
Key Issues	Worsens Commercial St	No improvements to Marion St	No improvements to Marion St	No improvements for Front St, (not endorsed by ODOT)

Solutions – Center St Bridgehead

Wallace Road Ingress Solutions

1. Widen Wallace Road to 3 SB lanes and widen on-ramp to bridge to three lanes (+850 vph or 38% increase)
 - Requires widening bridge to 5 lanes



Solutions – Center St Bridge

Center Bridge Solutions

1. Remove weaving (+800 vph or 17% increase on bridge)
2. Add 5th lane - combine with remove weaving (+2,000 vph or 42% increase) – figure below



To add 5th lane on bridge, remove jersey barrier and sidewalk on north side of bridge

Solutions – Center St Bridgehead

Front Street (SB) Egress Solutions

1. Widen to dual exit ramps

- Improves weaving on bridge and adds ramp capacity
- No net increase in capacity due to “bottleneck” at Front/Commercial/Trade intersection

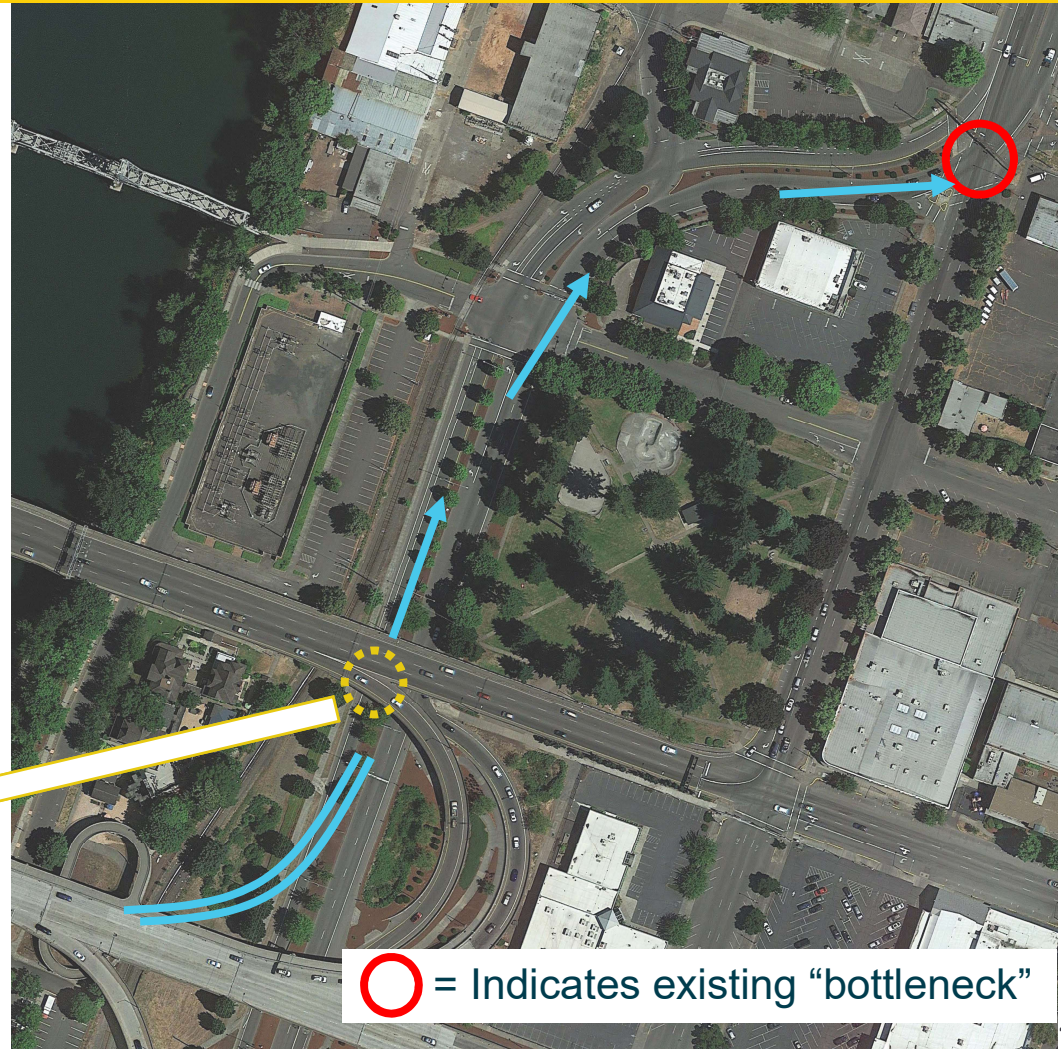
○ = Indicates existing “bottleneck”



Solutions – Center St Bridgehead

Front Street (NB) Egress Solutions

1. Free right turn (remove signal)
2. Build new ramp that merges onto Front St NB
 - Improves off-ramp capacity
 - Limited increase in net capacity (100 vph) due to “bottleneck” at Commercial/Division/ Front intersection



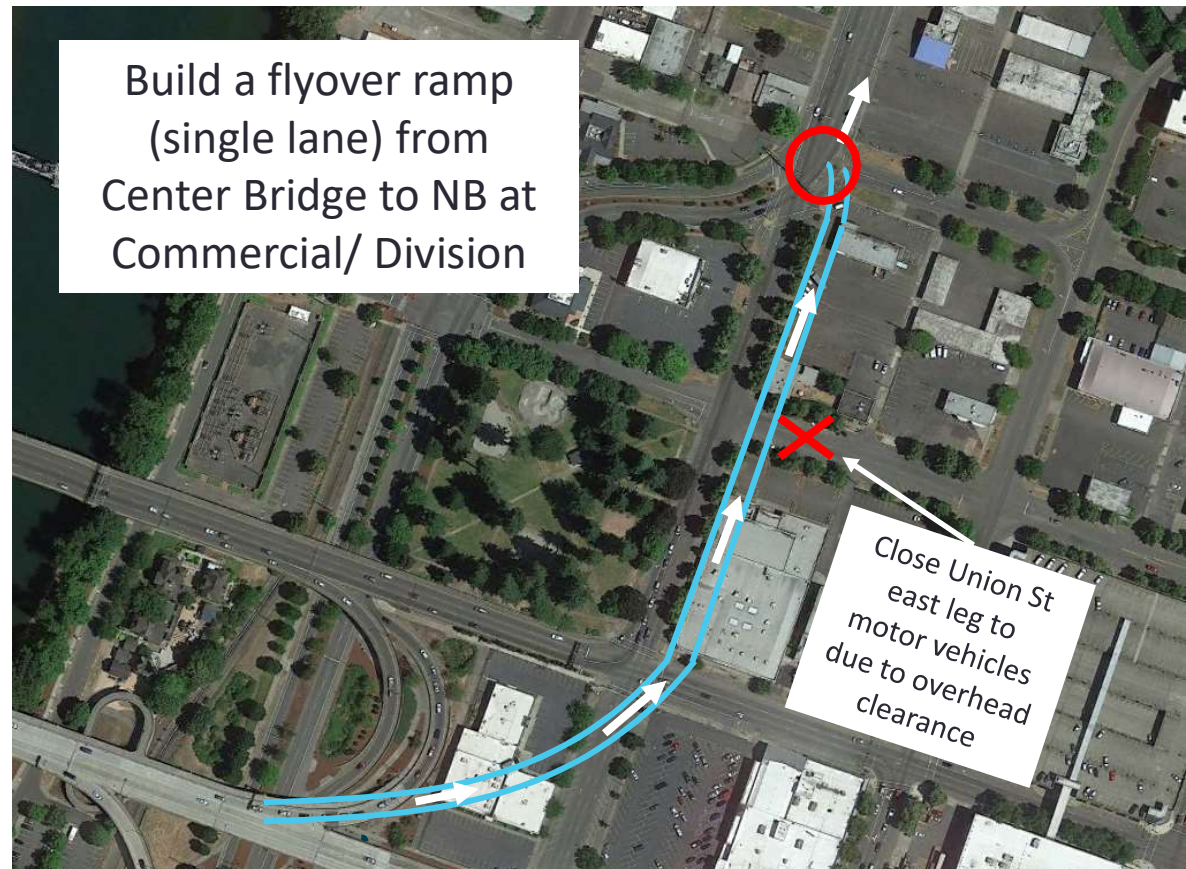
○ = Indicates existing “bottleneck”

Solutions – Center St Bridge

Front Street (NB) Egress Solutions

2. Flyover ramp to Commercial (+1,000 vph)

- Would require improvements to Commercial/ Division intersection
- Would create business, roadway, and visual impacts



○ = Indicates existing “bottleneck”

Center St Bridgehead

Center Street Egress

AM peak hour volumes and capacities on Center Street

- Existing, available capacity on Center St at Commercial St and Liberty St



Solutions – Marion Bridge Reversible Lane

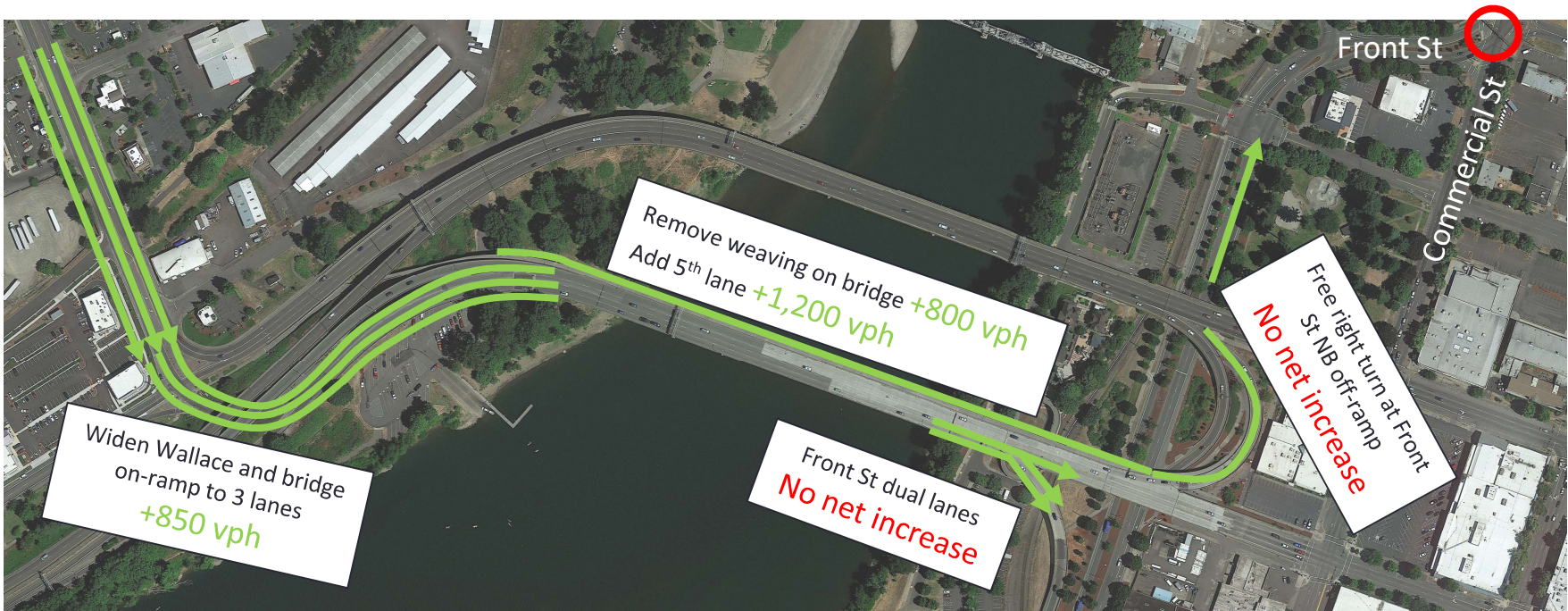
Marine Dr Reversible Lane to Marion St

Added eastbound lane (between +900 vph and +1,200 vph)



Solution Packages – Center St Bridge

Package #1



Summary:

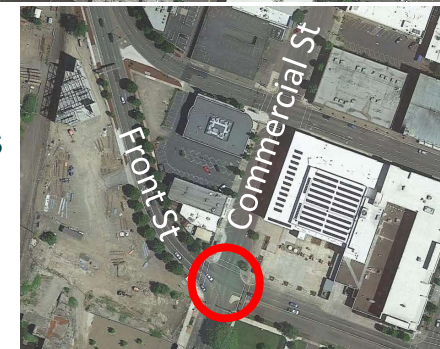
Improves Wallace Rd and Front St

Bottlenecks still exist at both Commercial St/Front St intersections

Maximum capacity of package = 850 vph*

*assuming intersection “bottlenecks” are addressed

 = Indicates existing “bottleneck”



Solution Packages – Center St Bridge

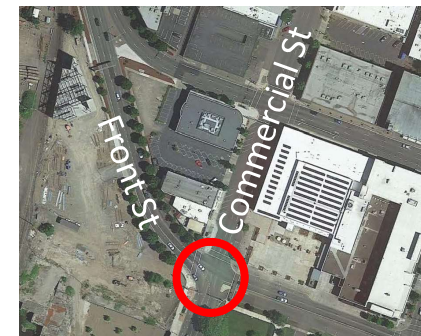
Package #2



Summary:

Improves Wallace Rd and Front St
Bottleneck still exists at Commercial St/Front St intersection
Flyover ramp creates visual, roadway, and building impacts
Maximum capacity of package = 850 vph

 = Indicates existing “bottleneck”



Solution Packages – Center St Bridge

Package #3



Summary:
Improves Wallace Rd
Can be added to Center Solution Packages #1 or #2
Maximum capacity of package = 800 vph

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Solution Package Evaluation – Center Bridge

	Package #1	Package #2	Package #3
Maximum Capacity of Package	Ingress: 850 vph Bridge: 2,000 vph Egress: 850* vph Package: 850 vph *assuming bottlenecks can be addressed	Ingress: 850 vph Bridge: 2,000 vph Egress: 1,850* vph Package: 850 vph *assuming “bottlenecks” can be addressed	Ingress: 900 vph Bridge: 1,000 vph Egress: 800 vph Package: 800 vph
Estimated Years of Capacity	Wallace Rd: 12 yrs Bridge: 10 yrs Front St (SB): 20 yrs* Front St (NB): 20 yrs* Center St: 14 yrs	Wallace Rd: 12 yrs Bridge: 10 yrs Front St (SB): 20 yrs* Flyover ramp: 20 yrs* Center St: 14 yrs	Marine Dr: 20 yrs Bridge: 10 years
Cost (\$ - \$\$\$\$)	\$	\$\$\$	\$
Park Impacts	-	-	Wallace Marine Park
Safety	(+) Improves weaving	(+) Improves weaving	(-) Reversible lane
Property Impacts	Wallace Rd	Commercial offices, First Baptist Church, residential building, other businesses	-
Key Issues	“Bottlenecks” need to be addressed	“Bottlenecks” need to be addressed, Flyover ramp has property, visual and roadway impacts	Parking removal on Marion St, impacts PM peak hour capacity potential on Marion St

Solutions – To be considered later

The following list of solution ideas only provide congestion relief when built in conjunction with the bridgehead and bridge solutions identified.

- Add through lanes and right turn lanes on Wallace Road from Hwy 22 to Brush College Road
- Add lane(s) to Commercial St SB from Pine St down to Marion St Bridge
- Extend the two SB lanes on High St north from Union St up to Liberty St
- Improve signage on and leading up to both bridges
- Improve signal timing

Solutions – Removed

The following list of solution ideas were considered but will not be evaluated further. Evaluation determined these do not directly address the study area capacity deficiencies or was deemed infeasible.

- Widen Front Street to arterial standards (north of Division)
- Add an additional lane on Front Street (SB) from Commercial St to Ferry St
- Grade-separated pedestrian crossing of Front St between Riverfront Park and downtown
- Open Musgrave through Wallace Marine Park
- Roundabout at Edgewater Rd/Wallace Rd
- Install a signal at Edgewater/Patterson
- Murlark Ave connector road to Glen Creek Road
- Off-ramp from Marion St Bridge to 2nd St under existing bridges
- Remove signals at Commercial St/Union St and Edgewater Rd/Wallace Rd