

SR 518 Corridor Planning Study

Highline Forum: Des Moines, WA.



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Today's Presentation



Study Background

Practical Solutions

Communications/Outreach

Traffic Analysis/Quick overview of corridor conditions

Alternatives Screening

Recommended Packages

Next Steps

SR 518 Study Background

- 2017 legislative proviso to conduct study of SR 518 corridor, updating previous corridor study (2002 - RDP)
 - Study funding (legislature): \$500,000
 - WSDOT to use a Practical Solutions approach in this study
 - Final report submitted by November 30, 2019.
- WSDOT hired WSP America Inc. in summer 2018 to help complete study
- The Port of Seattle provided addtl. funding of \$400,000 for supplemental traffic/modeling work (SR 518 corridor/subarea analysis)

SR 518 Study Background

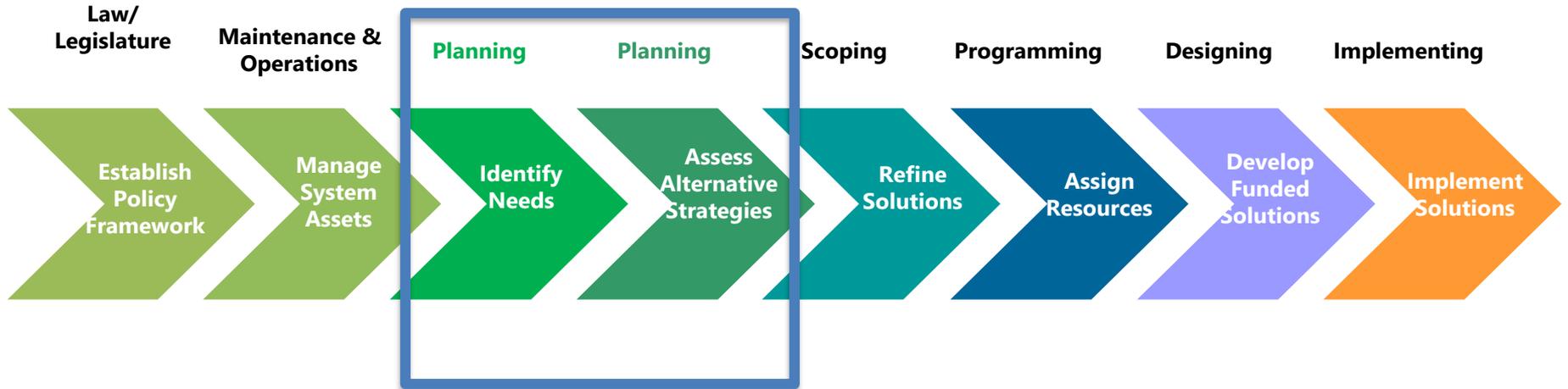
Cont.

- Rise in population and employment resulting in higher demands on SR 518 and connecting corridors
 - Capacity levels already limited
 - Sea-Tac International Airport passenger and air cargo growth
 - Growth in communities on the SR 518 corridor (Burien, Des Moines, Sea-Tac, Tukwila)
- No plans to modify I-5/I-405 interchange
- I-405 BRT project may compete for limited ROW on SR 518 near Tukwila International Boulevard Station (TIBS)

SR 518 Corridor



SR 518 Study: Practical Solutions Framework



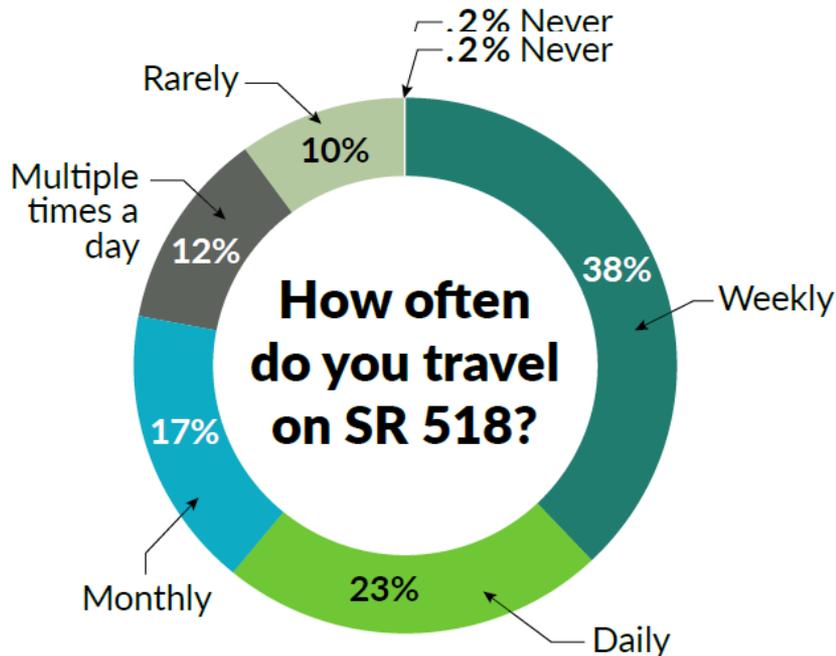
SR 518 Corridor Planning Study

Stakeholder Committee

- Burien, Des Moines, SeaTac, Tukwila
- King County Metro
- Port of Seattle
- Puget Sound Regional Council (PSRC)
- Sound Transit
- Tribes
- WSDOT HQ
- WSDOT NW Region

Communications and Outreach: Web Survey

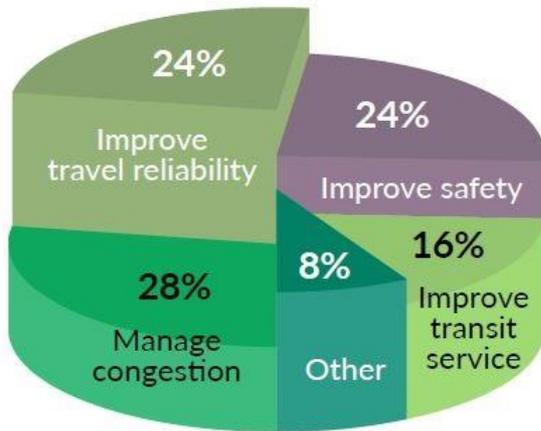
94% use private vehicles



For what purpose do you use SR 518?

Web Survey – Overview (Cont.)

What priorities are important to SR 518 users?



- Improve I-5/SR 518 interchange
- Widen SR 518 with general purpose lanes
- Improve ramps at S 154th or SR 99
- Operational Strategies (adjusted signal timing or improved signage)
- Widen shoulders
- More transit options
- Widen SR 518 with HOV lane
- Other

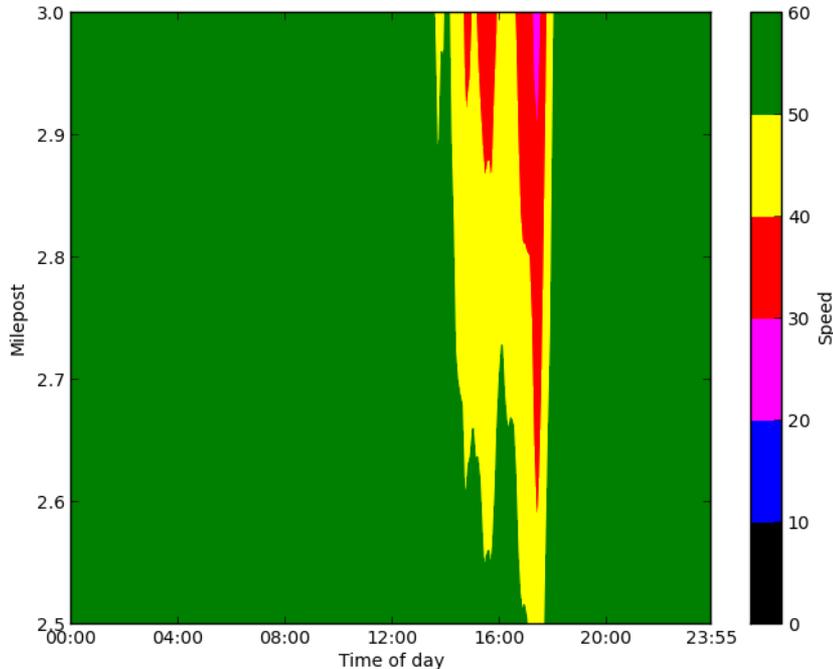
What do users want done on SR 518?

Regional Projects

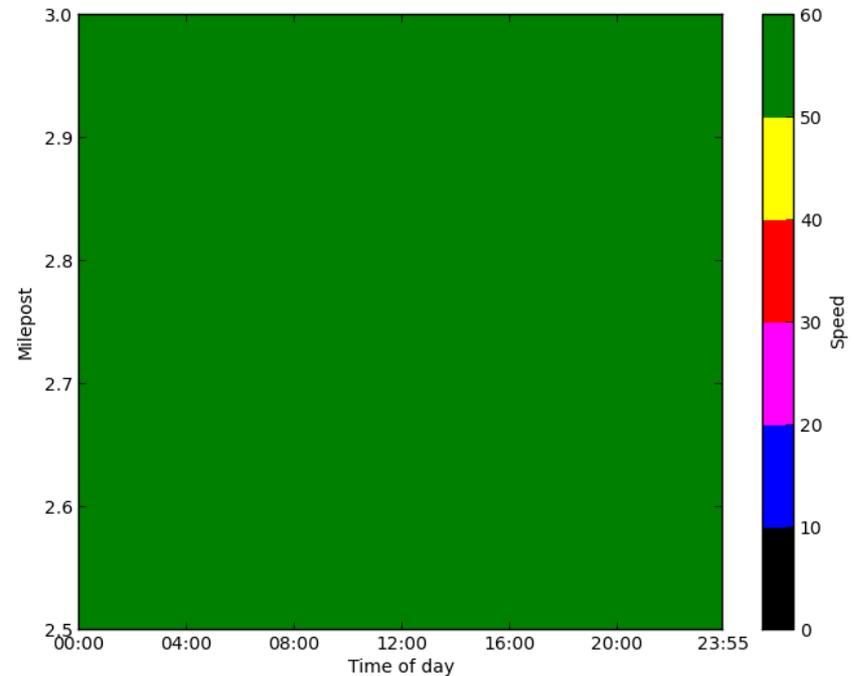
- WSDOT SR 509 Extension (Gateway Program)
 - Stage 2 completion by 2028
- WSDOT I-405 Corridor Program
 - ETL expansion Renton-Canyon Park by 2024-2025
- Sound Transit I-405 BRT Project
 - Expected opening of 2024 (To Burien TC via SR 518)
- Sound Transit Link Extensions (Lynnwood, Redmond, Federal Way, Tacoma, West Seattle)
 - Expected openings 2024-2030
- Port of Seattle SAMP
 - Near-Term Projects by 2027

Traffic Analysis: Corridor Speeds (SR 518)

EB 518 (SR 99 to W of I-5)



WB 518 (W of I-5 to SR 99)

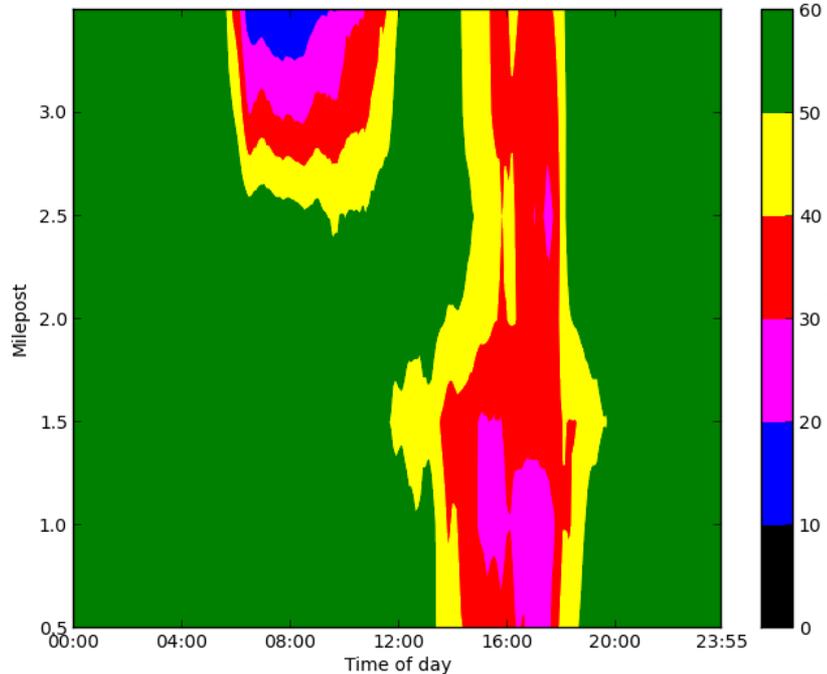


- PM congestion on EB 518 near the I-5 interchange
- Acceptable conditions for WB SR 518

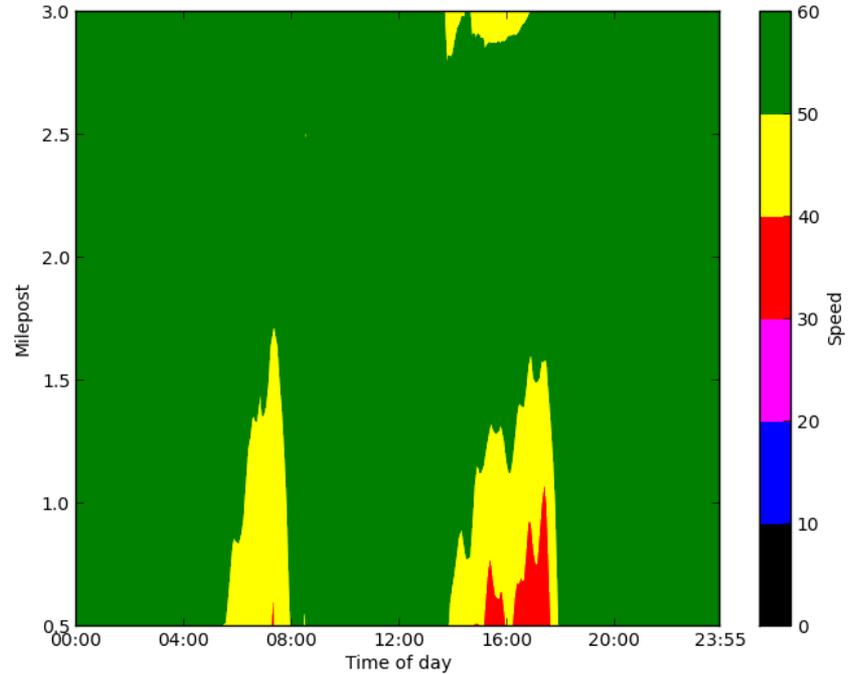


Traffic Analysis: Corridor Speeds (I-405) (Cont.)

I-405 EB/NB (I-5 to SR 167)



I-405 WB/SB (SR 167 to I-5)



- PM congestion on I-405 NB all along the segment
- AM congestion NB near SR 167
- Some AM and PM congestion near I-5 interchange



DTA Modeling

- As with PSRC model, DTA model reflects high airport growth in traffic
- SR 509 extension draws traffic away from SR 518 (*note drop between NAE ramps*)
- Congestion on I-5 would limit growth in demand on SR 518 between NAE and I-5
- Trips redistribute to pathways where reserve capacity is available (ex. NB SR 509 to EB SR 518)
- I-405 is constrained thereby limiting growth
- AM peak period shows similar growth



Alternatives Screening

Preliminary Screening (Level I)

- Screened five primary categories
- Simplified 1-3 rating system
- Some very low scoring strategies eliminated
- Most strategies carried forward for further evaluation

Final Screening (Level II)

- Screened subcategories under the five primary categories
- Rated strategies using expanded 1-5 scale
- Some screened qualitatively and some screen quantitatively with modeling/analysis
- Weighting applied to individual subcategory scores
- Some strategies eliminated throughout the process

Screening Criteria

- Safety (consistency with Target Zero, Crash-reduction, etc.)
- Mobility (travel times, trip reliability, etc.)
- Local Access (to local communities from SR 518 corridor)
- Airport Access (to/from Airport for passengers and freight)
- Environmental (displacements, steep slopes, sensitive areas, etc.)
- Constructability (cost, technical feasibility, etc.)
- Community Support

Recommended Packages

Transportation System Management and Operations

Near-Term Strategy Packages

Estimated Cost

TSMO: Signage Improvements

- Signage: Wayfinding to Airport
- Improved signing from rental car facility/S 160th to WB 518
- Review local street signing to and from the airport

\$2-4 million

TSMO: Crash Reduction on EB SR 518

- ATMS: Speed and corridor management on EB SR 518
- Expand Incident Response Team presence on SR 518
- High Friction Surface Treatment (HFST) on EB SR 518 to NB I-5
- Lane Markings: Around I-5 interchange
- 2nd EB lane on SR 518 to I-405, merging to one lane just west of I-5

\$10-20 million

Transportation System Management and Operations II

| Near-Term Strategy Packages | Estimated Cost |
|---|-------------------------|
| <p>TSMO: Crash Reduction on WB SR 518</p> <ul style="list-style-type: none"> Lane Markings: Delineation WB towards Airport exit (two lanes solid marking) Marking/Signage: Signal Ahead - WB approaching SR 518/509 Signal Marking/Signage: Lane Ends - WB approaching Des Moines Memorial Drive S Off-Ramp | <p>\$100k-1 million</p> |
| <p>TSMO: Active Transportation Improvements</p> <ul style="list-style-type: none"> Non-motorized safety improvements at SR 99 ramps Non-motorized safety improvements at Des Moines Memorial Drive S | <p>\$250k-1 million</p> |
| <p>TSMO: ITS/ATMS</p> <ul style="list-style-type: none"> Ramp Metering: SR 99 to EB 518 All Lanes Ramp Metering: 51st Ave S to WB 518 ATMS: Travel Time Signs on NAE - Seattle via SR 509 or I-5 Complete ITS throughout corridor and add ATMS Bidirectional on SR 518 near SR 509 Transit Signal Priority on SR 99 | <p>\$6-12 million</p> |

Transportation Demand Management and Capital Improvements

Near-Term Strategy Packages

Cost

Transportation Demand Management (TDM)

- Parking Management Strategies
- Airport Transportation Management Association & Tukwila TMA
- Prioritize/incentivize vanpools for employees
- Employee commuter trip reduction strategies
- 1st/last mile services
- Vanpool/Carpool Incentives Program for airport travelers

\$4-8 million

Capital Improvement: Ramp Improvements near SR 99

- 152nd On-ramp to WB SR 518 (CD roadway)
- 154th On-Ramp Roundabout to allow EB to WB left movement
- Relocation of WB SR 518 Off-Ramp from SR 99 to 32nd Ave S

\$34-49 million

Mid-Term Strategy Packages

| Mid-Term Strategy Packages | Estimated Cost |
|---|--------------------------------------|
| <p>Capital Improvement: Eastbound SR 518</p> <ul style="list-style-type: none"> • 2nd EB lane on SR 518 to I-405, including improvements to I-405 to accommodate demand • Auxiliary Lane Widening of EB SR 518 from SR 99 to Klickitat Curve/51st Ave S exit | \$190-244 million |
| <p>Capital Improvement: Airport South Link Access</p> | TBD |
| <p>Capital Improvement: SR 518/SR 509 Interchange</p> | \$50-70 million |
| <p>Capital Improvement: Widening of Westbound SR 518</p> | \$33-45 million |
| <p>Operations: Improvements at SR 518 Ramp Termini</p> <ul style="list-style-type: none"> • Ramp Terminal Treatments - Roundabouts • Ramp Terminal Treatments - Signal • Ramp Terminal Treatments - Revised Channelization | \$200k- \$5 million/ per location |
| <p>Capital Improvement: Active Transportation Bridge Connections</p> | \$5-\$10M per location |

Long-Term Strategy Packages

| Long-Term Strategy Packages | Estimated Cost |
|---|-------------------|
| Capital Improvement: Managed Lanes on SR 518 | \$150-200 million |
| Capital Improvement: Full Rebuild of the I-5/I-405/SR 518 Interchange | TBD |

Next Steps

- WSDOT – final report preparation (NOW)
- Delivery to Legislature - November 30th
- Briefings to Study Partners (Highline Forum – Today!
SeaTac City Council 12/5, SCATBd, PSRC, other
TBD)
- Implementation?

QUESTIONS?

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