Sellwood Bridge
AM Traffic Evaluation

SMILE Transportation Committee Meeting

Portland Bureau of Transportation

Jamie Jeffrey, Rich Newlands, Jake Milligan
Goals and Objectives

• Understand and reduce the impacts of cut-through traffic.
• Preserve pedestrian and bicycle safety across Tacoma and within the neighborhood.
Information Collected

- **Data Collection**
  - Daily Traffic Volumes on major streets and local streets
  - Turning Movement Counts at Tacoma/13\textsuperscript{th} and Tacoma/17\textsuperscript{th}
  - Video Data - Tacoma @ 6\textsuperscript{th}, 13\textsuperscript{th} @ Umatilla, and 13\textsuperscript{th} @ Nehalem
  - Field observations – travel patterns, travel time
- **New cameras installed in October at both ends of the bridge allow:**
  - Monitoring of traffic conditions
  - Ability to observe affect of signal timing changes
Possible Contributing Factors

- AM Queue Spillback due to:
  - Hwy 43/Macadam signal
  - 6th & Tacoma signal
  - Stop and go conditions
  - Side-street traffic allowed to enter Tacoma
- Neighborhood cut-through due to:
  - Reduced total travel time
  - Waze/Google Maps
### Possible Options

<table>
<thead>
<tr>
<th>Treatment Location:</th>
<th><strong>Bulpewd Bridge West Side</strong></th>
<th><strong>On Both Bridge</strong></th>
<th><strong>Oh and Tacoma Interaction</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mitigation Analysis</strong></td>
<td><strong>Relocate TriMet stop</strong></td>
<td><strong>Reduce 38 traffic signal green time</strong></td>
<td><strong>Leading Ped signal reduce green time</strong></td>
</tr>
<tr>
<td><strong>Issue</strong></td>
<td><strong>Lane merging volumes saturated from North</strong></td>
<td><strong>BB traffic from Macadam</strong></td>
<td><strong>Pedestrian Hybrid Queen</strong></td>
</tr>
<tr>
<td><strong>Option</strong></td>
<td><strong>320</strong></td>
<td><strong>No TURN ON RED</strong></td>
<td><strong>No TURN ON RED</strong></td>
</tr>
<tr>
<td><strong>Possible Options</strong></td>
<td><strong>Reduce QM roadway vandal</strong></td>
<td><strong>Load existing L signal</strong></td>
<td><strong>Promote left turn from Oh and AVE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tyler St</strong></td>
<td><strong>Qm and Tacoma refining</strong></td>
<td><strong>Design signal timing at 5th and</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Oh and Oh and</strong></td>
<td><strong>Qm and Tacoma refining</strong></td>
<td><strong>To increase traffic Oh and</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Treatment Location:</strong></th>
<th><strong>L of 5th and Tacoma</strong></th>
<th><strong>1st and 5th &amp; Tacoma</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mitigation Analysis</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
</tr>
<tr>
<td><strong>Issue</strong></td>
<td><strong>Restrict access on NE 17th (5th Ave)</strong></td>
<td><strong>Restrict access on NE 17th (5th Ave)</strong></td>
</tr>
<tr>
<td><strong>Option</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Many vehicles are entering from median islands, thereby reducing the flow of traffic on Oh and Oh and</strong></td>
<td><strong>Many vehicles are entering from median islands, thereby reducing the flow of traffic on Oh and Oh and</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Many vehicles are entering from median islands, thereby reducing the flow of traffic on Oh and Oh and</strong></td>
<td><strong>Many vehicles are entering from median islands, thereby reducing the flow of traffic on Oh and Oh and</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Unisia Bridgeway may benefit from additional signage and safety improvements</strong></td>
<td><strong>Many vehicles are entering from median islands, thereby reducing the flow of traffic on Oh and Oh and</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Enhance bike facilities</strong></td>
<td><strong>Unisia Bridgeway, to oneway with NW bike lane</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Neighborhood Streets Around Tacoma</strong></th>
<th><strong>L</strong></th>
<th><strong>M</strong></th>
<th><strong>N</strong></th>
<th><strong>O</strong></th>
<th><strong>P</strong></th>
<th><strong>Q</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Issue</strong></td>
<td><strong>Restrict access on NE 17th (5th Ave)</strong></td>
<td><strong>Restrict access on NE 17th (5th Ave)</strong></td>
<td><strong>Restrict access on NE 17th (5th Ave)</strong></td>
<td><strong>Enhance Unisia Bridgeway</strong></td>
<td><strong>Change 6th, S, S of Tacoma, to one-way with NW bike lane</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Option</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
<td><strong>Taco median islands</strong></td>
</tr>
</tbody>
</table>
Options A thru D
Signal Timing Adjustments
West End of Bridge

West End Interchange
Signal Timing adjustments – balance movements for most efficient traffic flow.
Option E
Convert Bridge to Reversible Travel Lanes

Reconfiguring lanes on the bridge to provide more storage space across the bridge, and allow capacity to be adjusted with directional demand.

This will involve multiple agency consensus. Significant amount of evaluation required.
Options F thru K
SE 6th & Tacoma Signal Operations

Modifications to signal include:
• Signal timing adjustments to favor pedestrian/bicycle safety
• Restriction of certain movements during the AM Peak
• Replacement of traffic signal with Pedestrian Hybrid Beacon
Options G
Replace SE 6th & Tacoma Signal

Pedestrian Hybrid Beacon Example
(SE Tacoma & 19th Ave)
Options L, N, O
Access Restrictions (Diversion)

Treatments that eliminate or redirect traffic
• Medians on Tacoma reduce turning movement use of left turn lane

• Diverters and Turn Restriction signing restrict traffic movements with the goal of reducing traffic volumes

Time Limited Turn Restrictions
Diverter Examples
Permanent
Diverter Examples
Temporary or Test
Option M
Meter Traffic Flow on 17th Ave

SE 17th/Ochoco Treatment
Potential to reduce amount of outside commute traffic entering neighborhood from south on 17th.

Bonus opportunity to improve Springwater Trail crossing safety.

Significant evaluation required. Potential for unacceptable unintended consequences.
SE 17th Ave South of Ochoco

- A primary bridge feeder
- Approximately 1/3 of the AM westbound bridge traffic
Option P
Improve Umatilla as a Greenway

Umatilla Bikeway
Improve bikeway conditions on Umatilla to greenway standards:
• Speed bumps
• 20 mph speed limit
• ‘Sharrow’ pavement markings
• Diversion?

Variation
• Install speed bumps throughout the neighborhood
Option Q
6th Ave Diverter, South of Tacoma

SE 6th between SE Tenino & Tacoma
Treatment to restrict NB to bike only
• Eliminates illegal left turns at 6th/Tacoma signal.
• Reduces cut-through traffic attraction to the 6th/Tacoma signal
<table>
<thead>
<tr>
<th>Tier One</th>
<th>Tier Two</th>
<th>Tier Three</th>
<th>Tier Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>Feasibility Issues</td>
<td>Feasibility Issues</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>Low Cost</td>
<td>Additional Process</td>
<td>Additional Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium Cost</td>
<td>High Cost</td>
<td></td>
</tr>
<tr>
<td><strong>Options:</strong></td>
<td><strong>Options:</strong></td>
<td><strong>Options:</strong></td>
<td><strong>Options:</strong></td>
</tr>
<tr>
<td>B: West signal timing</td>
<td>G: HAWK signal</td>
<td>E: Reversible lanes</td>
<td>A: Bus stop relocate</td>
</tr>
<tr>
<td>C: West signal timing</td>
<td>J: 6th signal timing</td>
<td>N: 17th Ave diverter</td>
<td>O: 17th turn restrict</td>
</tr>
<tr>
<td>D: West signal timing</td>
<td>M: Diversion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 6th signal timing</td>
<td>P: Umatilla Greenway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H: 6th signal timing</td>
<td>Q: 6th Ave diverter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I: 6th signal timing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K: 6th signal timing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Next Steps

- Adopt ‘Implementation Strategy’
- Finish implementation of Tier One
- Plan Development for Tier Two
  - Address feasibility issues
  - Address desirability issues
- Design engineering construction of Tier Two
- Evaluation of results- assess need for Tier Three options and/or additional Tier Two options
Questions?