Design Policy at WSDOT

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Washington State Transportation Commission
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• Practical solutions
• Design policy highlights
• Design process example
• Training support
• Operations/Demand Management first
• Results that benefit our Transportation System
• Does not compromise safety
• Performance-Based decisions
• Focus on Need and Least Cost Solution
• Emphasizes Community Engagement
• Multidisciplinary/Collaborative decision making
Practical Solutions

PRACTICAL SOLUTIONS

Law/Legislature
Establish Policy Framework

Maintenance & Operations
Manage System Assets

Planning
Identify Needs

Planning
Assess Alternative Strategies

Scoping
Refine Solutions

Programming
Assign Resources

Design
Develop Funded Solutions

Construction
Implement Solutions

Practical Design
Past practice

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Main Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3-1) Preventative Maintenance</td>
<td></td>
</tr>
<tr>
<td>Preservation</td>
<td></td>
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<tr>
<td>Roadway</td>
<td></td>
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<tr>
<td>(3-2) BST</td>
<td></td>
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<tr>
<td>(3-3) Milling With HMA Inlays</td>
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<tr>
<td>(3-4) HMA Overlays</td>
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<tr>
<td>(3-5) Replace HMA w/PCCP at VS</td>
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<tr>
<td>Structure</td>
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<tr>
<td>(3-6) Bridge Replacement</td>
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<td>(3-7) Bridge Deck Rehab.</td>
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<tr>
<td>Improvements</td>
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<tr>
<td>Mobility</td>
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<tr>
<td>(3-8) Non-Interstate Freeway</td>
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</tbody>
</table>
Design Policy 2016
New Process Highlights

New process

Understand the Project Need
Including the contributing factors

Consider the Context

Evaluate Design Controls

Formulate & Evaluate Alternatives
That meet the need

Document selection of Design Elements

Document selection of Dimensions

SOLUTION
SITUATION
Understand the Project Need
Including the contributing factors

- Establish **baseline** and **contextual** needs
- Develop **performance** metrics and targets
- Examine contributing factors (root causes)
- Engage the **community** about needs

Consider the Context

- Understand the **land use** context
- Identify the **transportation** context
- Consider existing **and future** contexts
- Understand the community design **vision**
- Consider the needs of **all modes**
Evaluate Design Controls

- Design year, Design user(s)
- **Modal priorities, target speed**
- Consider phased solutions
- Verify access control

Formulate & Evaluate Alternatives That meet the need

- Use **performance metrics** to evaluate alternatives
- Document **tradeoffs** using Alternatives Comparison Table
Modal priority – motor vehicles

From “WSDOT Design Manual, 2014”
http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm
Example - Bicycle Oriented Cross Section

From “WSDOT Design Manual, 2015”
http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm
Example – Multimodal Cross Section

From “WSDOT Design Manual, 2015”
http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm
Project Team / Steering Committee Roles

1. Project team charters an advisory committee
2. Committee includes multiple disciplines and stakeholders
3. Decision process - consensus / collaborative / other

- Need Identification
- Context Identification
- Design Control Selection
- Alternative Formulation/Evaluation
- Performance Trade-off Decisions
Design Policy 2016
Advances in practice

Design Policy 2016
Advances in practice

Image credit: “AASHTO Highway Safety Manual”, 2010
Consider the Context

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Including the contributing factors

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Document selection of Dimensions

New process
### Section 1) Project Needs

**Note for I-2 Safety Projects:** If a Crash Analysis Report already exists, some of the information required in this section may already be covered in the report. See the Bases of Design Instructions for more details.

| List the project's **BASELINE NEED(S).** Include the performance metrics that will be used to evaluate alternatives and the performance targets for those metrics. | Plane and pave existing HMA to rehabilitate roadway and to reduce the severity of crashes at the beginning of the project where the roadway shoulder width drops below 4' and where existing unrecoverable slopes exist without a barrier.  

**Metric:** **Rehabilitate existing HMA** and **reduce the severity of crashes** at the beginning of the project.  

**Target:** Replace existing HMA along with making existing shoulders at the beginning of the project a minimum of 4' in width and install guardrail through the canal/cattle crossing area. |
Design Policy 2016
New Process Highlights

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Including the contributing factors

Consider the Context

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That meet the need

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NEW PROCESS

New process

SOLUTION
### Section 2) Context

<table>
<thead>
<tr>
<th>Community Engagement</th>
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</thead>
<tbody>
<tr>
<td>Benton–Franklin Council of Governments (BFCG) along with the City of Kennewick have had several open houses during their normal planning processes discussing alternative transportation needs including public, pedestrian, and cycling. BFCG along with the City of Kennewick are trying to design and plan for &quot;complete streets&quot; where possible to safely open up diverse transportation options for the community.</td>
</tr>
</tbody>
</table>
## Section 1) Project Needs

<table>
<thead>
<tr>
<th>List the project’s CONTEXTUAL NEED(S). Include the performance metrics that will be used to evaluate alternatives. List performance targets for the metrics, if applicable.</th>
<th>Congestion at busy intersections due to lack of turn storage and need of bike lanes identified by the City of Kennewick and SCR Traffic Office.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric: Level of Service (LOS) Target: Improve LOS by lengthening turn pockets at busy intersections and adding bike paths where they can fit within the current roadway prism so bicyclists can safely ride through this area.</td>
<td></td>
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</table>
Consider the Context
Understand the Project Need
Including the contributing factors
Consider the Context
Evaluate Design Controls
Formulate & Evaluate Alternatives
That meet the need
Document selection of Design Elements
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New process
## Section 4) Alternatives Analysis

<table>
<thead>
<tr>
<th>Alternatives Considered</th>
<th>No Build</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Build</strong></td>
<td>Leave lane widths as is and do not add bicycle lanes or remove median islands to extend left turn pockets and just plane and pave back distressed HMA leaving all configurations as is.</td>
<td></td>
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<tr>
<td><strong>A</strong></td>
<td>Remove median islands to extend left turn pockets but leave lane width as is and do not add bicycle lanes.</td>
<td></td>
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<tr>
<td><strong>B</strong></td>
<td>Remove median islands to extend left turn pockets and drop all lane widths to 11’ to accommodate a 5’ bike lane NB and SB from Gum St over the cable bridge (397/20) to Ainsworth. Existing roadway width will not accommodate a required minimum 5’ bike lane from Gum st to 1st or up onto and over the cable bridge due to lack of existing roadway width and there is not money in our current budget to purchase right of way and add new roadway width to make this addition at this time.</td>
<td></td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>Remove median islands to extend left turn pockets and drop all lane widths to 11’ to accommodate a 5’ bike lane NB and SB from 1st to the cable bridge (397/20). Also change lane widths over the cable bridge from 12’ to 11’ increasing the shoulder width on both sides from 1” to 2” left and from 4” to 5” right in travel direction. This would give more shy distances on both sides while still meeting the WSDOT’s requirement of 5’ bike lane.</td>
<td></td>
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</tbody>
</table>
Section 4 tradeoffs discussion

“WSDOT and the City of Kennewick have worked together through the design process . . .“

“this alternative is the least expensive alternative in accomplishing the City of Kennewick’s “complete street goals . . .“

“. . . making this corridor more accessible for all modes of transportation . . .”
Training highlights

Current delivery
• Design Manual Update Training
• Practical Solutions Approach to Project Development Overview
• Highway Safety Manual (various levels)
• FHWA CSS Technical Assistance

In development
• e-learning for Design Manual Update Training
• Design Documentation
• Multimodal Project Development
Thank You

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