WSDOT’s
Main Street Highways Initiative

Paula Reeves
Manager, Community Design
WSDOT’s Highways & Local Programs Division

Conference on Performance Measures for Transportation and Livable Communities
University Transportation Center for Mobility, TTI, Austin, TX
September 2011
State Highways as Main Streets
Typical “Complete Street” Costs
(Actual 2008 bid specs = $15.7 Million per mile)

Typical City Infrastructure Costs Today
City streets are more than pavement.

$300,000/landscape

Street - $6,000,000/mile

$1,000,000/mile

$700,000/mile + Phase II monitoring

$450,000 illumination/signalization

Utility Relocation - $1,500,000/mile

$250,000/mile + ADA compliance

$4,500,000/mile

Plus ongoing maintenance, preservation and operating costs.

Source: Association of Washington Cities
## Highway Maintenance Responsibilities in Cities
(Managed access highways*)

<table>
<thead>
<tr>
<th>City Responsibility - Operational (consistent with state laws)</th>
<th>State Responsibility – Structural Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Street Illumination</td>
<td>✓ Roadway surface and shoulders</td>
</tr>
<tr>
<td>✓ Cleaning-streets, catch basins, snow plowing, etc.</td>
<td>✓ Traffic Control Signals</td>
</tr>
<tr>
<td>✓ Existing Stormwater facilities</td>
<td>✓ Slope stability</td>
</tr>
<tr>
<td>✓ Traffic and parking enforcement</td>
<td>✓ State has snow plowing authority when necessary</td>
</tr>
<tr>
<td></td>
<td>✓ Route markers, directional signs</td>
</tr>
</tbody>
</table>

- Cities under 22,500

- Cities over 22,500

**Same responsibilities as above, plus**

- ✓ Slope stability
- ✓ Traffic Control Signals

**State Responsibility**

- ✓ Roadway surface and shoulders
- ✓ Traffic Control Signals
- ✓ State has snow plowing authority when necessary
- ✓ Route markers, directional signs

*WSDOT performs all of the above maintenance activities on Limited Access Highways (i.e. I-5, I-90, I-405, I-82, etc.)*

**State Highway Improvements are typically a partnership between cities and the state**

Source: Association of Washington Cities
State Highways as Main Streets: A Study of Community Design and Visioning

The Issues

- State Highways in Washington often serve as ‘main streets’ providing local access as well as regional mobility.
- Design affects community livability and safety: these roads among the highest rates of pedestrian and traffic collisions in the state.
- Late stage design changes in projects on these highways have increased costs and delayed projects.

Two visions of a street in Goldendale
The Need

- Help local agencies improve funding opportunities
- Explore new methods for collaboration and problem solving when state highways serve as local main streets
- Determine successful approaches to meet the federal requirements for visioning set forth in SAFETEA-LU
- Translate context sensitive design guidance into practice
- Support staff and organizational development by connecting the architecture profession and transportation engineering
Anticipated Outcomes

• Develop more cost effective transportation projects
  • Ensure fewer scope and schedule changes
  • Revitalize vs. mitigate transportation impacts to communities

• Identify partnerships opportunities and resources
  • Transportation, historic preservation, environmental, economic development, utilities, etc.

• Ensure a measurable link between goals and transportation investments
  • Outcomes vs. throughput or volume to capacity ratio
  • Safety
The Research

1. System Analysis
2. Case Studies

**Storefront Studio Program**
University of Washington
College of Built Environments
Department of Architecture
### What’s a Main Street Highway?

**Step 1: Screening**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Route within City Limits</td>
<td>Y, N</td>
</tr>
<tr>
<td>Highway of Statewide Significance</td>
<td>Y, N</td>
</tr>
<tr>
<td>National Highway System</td>
<td>Y, N</td>
</tr>
<tr>
<td>State Access Control Classification</td>
<td>Y, N</td>
</tr>
<tr>
<td>Federal Functional Classification</td>
<td>Principal arterials, Minor arterial streets, Collector streets, Local streets</td>
</tr>
<tr>
<td>Design Speed</td>
<td>MPH</td>
</tr>
<tr>
<td>Posted Speed</td>
<td>MPH</td>
</tr>
<tr>
<td>Year of Incorporation</td>
<td>Year</td>
</tr>
<tr>
<td>Freight Classification</td>
<td>T-1 more than 10 million tons per year; T-2 4 million to 10 million tons per year; T-3 300,000 to 4 million tons per year; T-4 100,000 to 300,000 tons per year; T-5 at least 20,000 tons in 60 days</td>
</tr>
<tr>
<td>Collision History</td>
<td>Number of collisions involving bicyclists and pedestrians</td>
</tr>
</tbody>
</table>
## Step 2 - Defining Main Street Highways

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of visible buildings that are commercial</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Proportion of street frontage with dead space</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Proportion of street frontage with parked cars</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Proportion of street frontage with tree canopy</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Number of travel lanes</td>
<td>Number both directions</td>
</tr>
<tr>
<td>Average travel lane width</td>
<td>Feet</td>
</tr>
<tr>
<td>Average shoulder width</td>
<td>Feet</td>
</tr>
<tr>
<td>Average median width</td>
<td>Feet</td>
</tr>
<tr>
<td>Average sidewalk width</td>
<td>Feet</td>
</tr>
<tr>
<td>Total curb to curb width</td>
<td>Feet</td>
</tr>
<tr>
<td>Total back of sidewalk to back of sidewalk width</td>
<td>Feet</td>
</tr>
<tr>
<td>Posted speed limit</td>
<td>MPH</td>
</tr>
<tr>
<td>Crosswalk spacing</td>
<td>Feet</td>
</tr>
<tr>
<td>Visible curb extensions (y, n)</td>
<td>Y, N</td>
</tr>
<tr>
<td>Average building setback</td>
<td>Feet</td>
</tr>
<tr>
<td>Average building height (stories)</td>
<td>Stories</td>
</tr>
<tr>
<td>Uniform building height (y, n))</td>
<td>Y, N</td>
</tr>
<tr>
<td>Number of pedestrians visible</td>
<td>Count</td>
</tr>
<tr>
<td>Average daily traffic</td>
<td>Volume</td>
</tr>
<tr>
<td>Visible bicycle lane</td>
<td>Y, N</td>
</tr>
<tr>
<td>Visible buildings that are historic</td>
<td>Y, N</td>
</tr>
</tbody>
</table>
Case Studies: State Highways as Main Streets

Community Design Case Studies:
- Rosyln
- Morton
- Goldendale

Other cities participated
Case Studies: “Storefront Studios”

Storefront Studios -
• public open houses,
• exhibits and
• information exchanges

Through archival research, photographic documentation and digital collages before-and-after streetscapes are developed.
Findings

• Scope changes:
  -- More common on Main Street Highways
  -- 48% of all projects vs. 38% on other parts of the state system

• Retrospective review:
  -- 40 projects or 20% of WSDOT’s scope, schedule and budget changes could have directly benefited from additional community design

• Average estimated saving per project:
  -- Over $9 million dollars or 30% of project cost
New Complete Streets/Main Street Highways Program
(2010 Washington Legislation - HB 1071)
Retrofitting roadways that provide both local access and regional mobility

Example: State Route 14 – Bingen
Other Notable Outcomes

In addition to serving as the foundation for Washington’s 2011 Complete Streets Law...

- Highlighted in *CityVision* magazine, produced by Association of Washington Cities, Jan/Feb 2010

- Highlighted in the FHWA *Livability in Transportation* Report

- WSDOT research project approved to develop *Washington Complete Streets Guidebook*
Community Implementation

Roslyn, WA
Immediately striped the bicycle lane through their community marking the famous Coal Mines Trail and connects the community to its past as well.

Morton, WA
Developed a proposal with full community support, secured funding for and moved to construct a large Safe Routes to Schools project.

Concrete, WA
Moved a stymied Transportation Enhancement grant to completion with full community support immediately after the community design work.

Clallam Bay, WA
Is in the process of constructing the combined transit and community center developed through the community design workshop.
State Highways as Main Streets: A Study of Community Design and Visioning

In Summary:
By actively building consensus and addressing a range of both agency and community concerns, community design:

• Helped ensure traffic flow, livability, safety, & tourism
• Supports efficient project delivery with fewer changes – keeping delays and costs down
• Estimated to save $9M per project
State Highways as Main Streets: A Study of Community Design and Visioning Publications  Full Report  Research Note

Paula Reeves
Manager, Community Design Assistance
Reevesp@wsdot.wa.gov, 360-705-7258
WSDOT’s Community Planning & Development Website
Main Street Highways & Complete Streets Website

UW Storefront Studio
http://www.storefrontstudio.org/

WSDOT Research
Leni Oman
Director, Office of Research & Library Services
Omanl@wsdot.wa.gov, 360-705-7975
Project Schedule

Schedule:   Start:10/01/07    End:10/31/09

• Fall Qtr ’07  Contracts, Project Start-up
• Winter Qtr. ’08  Community Selection, Web Launch
• Spring Qtr. ’08  Database research
• Summer Qtr. ’08  Corridor Fieldwork, Inventory
• Fall Qtr. ’08  Preliminary Report
• Winter Qtr. ’09  Research Analysis
• Spring Qtr. ’09  Research Illustration
• Summer Qtr. ’09  Fieldwork, Community Feedback
• Fall Qtr. ’09  Final Report