On The Road To Complete Streets in Minnesota

23rd Annual CTS Transportation Research Conference - Session 4
Scott Bradley & Bruce Holdhusen – MnDOT Offices of Environmental Stewardship & Research Services

Your Destination...Our Priority
Expected Benefits of Complete Streets

- Improved pedestrian, bicyclist, transit user and motorist safety
- Improved mobility and access for a third of our population that cannot or does not drive a motor vehicle
- Improved public and environmental health
- Increased modal choices that can combat congestion while improving transportation capacity and mobility
- Increased consumer savings
- Increased economic activity, competitiveness and property values
- Improved quality of life through more livable and sustainable transportation, environments, communities, commerce, and growth
Some Findings From Agency Interviews

- Complete Streets policy is feasible in MN (some local agencies are already doing it)
- In urban areas, allocation of space is of more concern than capital costs
- Use of flexibility in design and CSS is critical to achieving Complete Streets
- Comprehensive planning is the most cost effective approach (multi-jurisdictional)
- Operations and maintenance costs are of much more concern than capital costs
Complete Streets legislation was part of a transportation omnibus policy bill that was signed into MN state law on May 15, 2010.

The legislation heightened MnDOT support to lead a statewide partnership approach for implementing Complete Streets Policy.

The commissioner shall implement a complete streets policy after consultation with stakeholders, state and regional agencies, local governments, and road authorities. The commissioner shall address relevant protocols, guidance, standards, training and requirements and shall integrate related principles of context sensitive solutions.
Complete streets is the planning, scoping, design, implementation, operation, and maintenance of roads in order to reasonably address the safety and accessibility needs of users of all ages and abilities.
Minnesota Complete Streets Status
MnDOT Working with the External Complete Streets Advisory Group

Informing Vision, Policy, Implementation Approaches and Performance Measurement
Minnesota Complete Streets Status
Partnering with MnDOT - External Advisory Group Invited & Formed in 2010

- ADA of Minnesota
- Association of MN Counties (2)
- Builders Association of Minnesota
- MN Association of Townships
- MN Complete Streets Coalition (6)
- MN Dept of Employment and Economic Development
- MN Federal Highway Administration
- MN Dept of Health
- MN Housing Finance Agency
- MN Dept of Natural Resources
- MN Legislature
- MN Pollution Control Agency
- MN Dept of Public Safety
- MN Public Transit Association
- MN Transportation Alliance
- League of MN Cities (2)
- Metro Transit
- Metropolitan Council (MPO)
- West Central Initiative (RDC)
- Hennepin County
- City of Rochester
<table>
<thead>
<tr>
<th>Minnesota Complete Streets Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local Level Complete Streets Policies or Resolutions</strong></td>
</tr>
</tbody>
</table>

- Bloomington
- Rochester
- Hennepin County
- St. Paul
- Albert Lea
- Duluth
- Independence
- Byron
- Stewartville
- Big Lake
- Fargo-Moorhead Metro COG
- St. Louis Park
- New Hope
- Red Wing
- North St. Paul
- Pipestone
- Breckenridge
- St. Cloud Area MPO
- Rochester-Olmsted COG
- Battle Lake
- Dilworth
- Wilkin County
- Eagan
- Falcon Heights
- St. Cloud
- Clay County
- Ottertail County
- Northfield
Addressing Guidance & Research Challenges

- 26.3 Crashes/Mile
- 17.2 Crashes/Mile
- 8.6 Crashes/Mile
- 4.2 Crashes/Mile
Washington State DOT “Highways as Main Streets” Research
Perspectives on Costs Shared at National Complete Streets Peer Exchange

Analysis of completed projects over 10 years determined that:

- Use of a CSS / community design process could have saved over 30% of the costs ($9 million avg. per project) on 40 main street highway reconstruction projects.
- $380 million could have been saved over the 10 year period.

Only $250,000 (1.6%) of $15.7 million needed to construct typical city street infrastructure may need to be allocated for pedestrian / ADA and bicyclist accommodation needs (ongoing operations & maintenance is another concern).
Grand Rapids Pilot Planning Project
TRB Strategic Highway Research Program 2 Grant Recipient

Using & Evaluating a SHRP 2 Collaborative Decision Making Tool & Framework for Multi-Jurisdictional Complete Streets Network Planning in Grand Rapids, MN

TCAPP – Transportation for Communities Advancing Projects Thru Partnerships
Grand Rapids Pilot Planning Project
Integrating a Complete Streets Plan with the City’s Comprehensive Plan

Excerpt from the “Vision” … a community where residents and visitors can move around the city with equal ease by car, bicycle, walking or other mode of transportation

Multi-Jurisdictional Partners Group:
City of Grand Rapids, Itasca County, MN DOT, MN DNR, Arrowhead Transit and Regional Development Commission and the Federal Highway Administration

Objectives of the Grand Rapids Complete Streets Plan:
• Ensure economic vitality through a quality multi-modal transportation system
• Improve the health of community residents
• Ensure connectivity for non-auto modes including river crossings
• Decrease crashes involving bicyclists and pedestrians
• Increase opportunities for biking and walking
• Provide connections to trails and active recreation opportunities
• Provide multi-modal access to major destinations
• Balance the needs of all users (pedestrians, bicyclists, transit, autos, freight & emergency services)
• Meet ADA requirements
Looking At Emergent Best Practices
Identifying and Evaluating the Context Zones that Hwy 58 passes through and appropriate ranges of design flexibility for each segment functions to better guide future TH 58 related rehabilitation work and improvements …

a Context Sensitive Solutions (CSS) approach to support Complete Streets and to integrate transportation & land use in more balanced and mutually supportive ways (planning, design and functions alike)
Transportation & Land Use Integration Opportunities
Re-examining Multi-functional Arterials and Land Use Context

- Rural Corridor Context
- Suburban Corridor Context
- Suburban Center Context
- Suburban Neighborhood Context
- Town Center Context
- Town - Village - Urban Neighborhood Context
- Urban Core Context

Seeking More Mutually Supportive Transportation & Land Use Planning - Design - Development
Transportation & Land Use Integration Opportunities

Re-examining Multi-functional Arterials & Context Zones

Regional Arterial
Community Arterial
Community Collector
Neighborhood Collector
Local Road - Street
Transportation & Land Use Integration Opportunities

Flexible Design Standard Ranges Appropriate to Each Roadway Type & Setting

- Lane Width
- Paved Shoulder Width
- Parking Lane Width
- Bike Lane Width
- Median Width
- Curb Return
- Number of Travel Lanes
- Clear Sidewalk Width
- Roadside Buffer Width
- Shy Distance
- Total Sidewalk Width
- Desired Operating Speed

Matrix Approach with Flexible Ranges of Design Values for Each Combination of (5) Roadway Types & (7) Roadway Context Zones
CSAH 3 Excelsior Blvd Case Study - St. Louis Park

Case Study (1 of 5) in ITE’s 2006 Proposed Recommended Practice Publication

Context Sensitive Solutions
In Designing Major Urban Thoroughfares
for Walkable Communities

ITE
Institute of Transportation Engineers

Before

After
CSAH 3 Excelsior Blvd Case Study

• Flexibility in design to reallocate space to balance the stakeholder needs and objectives while improving safety and mobility for all modes and users (transit, freight, motorists, bicyclists & pedestrians)

• Annual crash rates dropped over 60% in the first few years after completion of reconstruction segment one
TH 169 in St. Peter Case Study
Highway as the Main Street (and Interregional Corridor) thru a Historic District
TH 169 in St. Peter Case Study

- Reduce Pedestrian / Vehicle Conflicts 40%
- Reduce Pedestrian Crossing Distances / Time 68%
- Maintain Good Trip Circuity with 86% of Trip Movements Left Largely Unaffected
TH 169 in St. Peter Case Study
Complete Streets Related Costs ($1 million) were 6% of Total Project Costs ($15 million+)
Complete Streets – Minnesota-style

- **Users named in Minnesota 2010 Complete Streets Law**
  - Users of all ages and abilities
  - Motorists
  - Pedestrians
  - Transit users and vehicles
  - Bicyclists
  - Commercial and emergency vehicles
Complete Streets – Minnesota-style
Special Concerns Considered in the MN Research

- Winter maintenance
- Stormwater runoff (water quality)
Current Multi-Modal Research Areas

MnDOT and LRRB

- Bicycle and Pedestrians
- Roundabouts
- Transit
- Freight
- Complete Streets
Bikes and Pedestrians
Current Research Projects

• Best Practices and Synthesis for At-Grade Trail Crossing Treatments
• Methodologies for Counting Bicyclists and Pedestrians in Minnesota
• Implementing Bicycle and Pedestrian Traffic Counts and Data
Roundabouts

Current Research Projects

- Investigation of Pedestrian/Bicyclist Risk in MN Roundabout Crossings
- Develop Multi-lane Roundabout Design Criteria to Accommodate Large, Legal Trucks
- Two-lane Roundabout Field Research Regarding Signing and Striping
Current Research Projects

• Transit
  § Multi-Modalism for Small Communities
  § Evaluating Twin Cities Transitways Performance and their Interaction with Traffic and Neighboring Major Roadways

• Freight
  § Using Truck GPS Data for Freight Performance Analysis
  § Real-Time Truck Parking Availability Information Pilot
Complete Streets
Current Research Projects

• Planning and Implementation of Complete Streets at Multiple Scales
• Implications of Modifying State Aid Standards to Accommodate Various Roadway Users
• Complete Streets Template for Minnesota Local Agencies
• Complete Streets Planning and Design Guidance Document
Planning and Implementation of Complete Streets at Multiple Scales

- Humphrey School (Carissa Schively-Slotterback and Cindy Zerger)
- **Funded by LRRB and MnDOT ($100,000)**
- Case Studies of Planning and Implementation at Regional, Community and Project Scales
Case Study Locations
Planning and Implementation of Complete Streets at Multiple Scales

- Hennepin County
- Rochester, Mn
- Albert Lea
- Fargo-Moorhead
- Arlington County, VA
- Boulder, CO

- Charlotte, NC
- Columbus, OH
- Dubuque, IA
- New Haven, CT
- Wisconsin (state) and Madison, WI
Advisory Panel
Planning and Implementation of Complete Streets at Multiple Scales

- Scott Bradley (MnDOT CSS)
- Greg Pates (MnDOT D6 Planning)
- Tim Quinn (MnDOT Metro District)
- Kristie Billiar (MnDOT ADA coord.)
- Steve Koehler (City of New Ulm)
- Brad Estochen (MnDOT Traffic)
- Jim Rosenow (MnDOT Design)
- Lynne Bly (MnDOT Planning)

- Deb Bloom (City of Roseville)
- Tim Mitchell (MnDOT Bikes & Peds)
- Tahsina Alam (MnDOT State Aid)
- Bruce Holdhusen (MnDOT Research)
- Ethan Fawley (Fresh Energy)
- Paul Stine (MnDOT State Aid)

Research Team:
Carissa Schively-Slotterback
Cindy Zerger
Andrew Harrison
Implications of Modifying State Aid Standards (Mn Rules 8820.9936) to Accommodate Various Roadway Users

- UW- Madison (David Noyce, Howard Preston, Jeremy Chapman)
- Funded by LRRB ($118,000)
- August, 2011 – October, 2012
- Workshop held August 2011
- Case studies to evaluate non-standard design solutions in terms of operational and safety considerations
Case Study Locations
Implications of Modifying State Aid Standards

- 76th Street / CSAH 52 (Richfield)
- Excelsior Blvd. (St. Louis Park)
- Hennepin Ave. and Lyndale Ave. (Minneapolis)
- Lake Street (Minneapolis)
- TH 14 / Highland Ave. (New Ulm)
- TH 169 (St. Peter)
- TH 23 (Spicer)
- West 110th Street (Bloomington)
- Williamson Street (Madison, WI)
Advisory Panel

Implications of Modifying State Aid Standards

- Paul Stine (MnDOT State Aid)
- Scott Bradley (MnDOT CSS)
- Gary Danielson (Kandiyohi County)
- Tim Quinn (MnDOT Metro District)
- Kristie Billiar (MnDOT ADA coord.)
- Steve Koehler (City of New Ulm)
- Brad Estochen (MnDOT Traffic)
- Jim Rosenow (MnDOT Design)
- Lynne Bly (MnDOT Planning)
- Shelly Pederson (Bloomington)
- Jim McCarthy (Met Council)

- James Andrew (Met Council)
- Deb Bloom (City of Roseville)
- Tim Mitchell (MnDOT Bikes & Peds)
- Tahsina Alam (MnDOT State Aid)
- Bruce Holdhusen (MnDOT Research)
- Ethan Fawley (Fresh Energy)
- Matthew Pahs (MnDOT Freight)

Research Team:
- David Noyce (UW – Madison)
- Howard Preston (CH2M Hill)
- Jeremy Chapman (UW – Madison)
Complete Streets Template for Minnesota Local Agencies

- SRF Consulting Group (Mike Marti and Renae Kuehl)
- **Funded by LRRB’s Research Implementation Committee ($46,000)**
- **Synthesis of City & County Complete Streets Policies and Ordinances**
<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeff Hulsether</td>
<td>(Brainerd)</td>
</tr>
<tr>
<td>Julie Skallman</td>
<td>(MnDOT State Aid)</td>
</tr>
<tr>
<td>Brian Sorenson</td>
<td>(Dakota County)</td>
</tr>
<tr>
<td>Guy Kohlnhofer</td>
<td>(Dodge County)</td>
</tr>
<tr>
<td>Jack Broz</td>
<td>(HR Green)</td>
</tr>
<tr>
<td>Jim Grube</td>
<td>(Hennepin County)</td>
</tr>
<tr>
<td>Scott Bradley</td>
<td>(MnDOT OES)</td>
</tr>
<tr>
<td>Tom Kaldunski</td>
<td>(Inver Grove Hts)</td>
</tr>
<tr>
<td>Steve Koehler</td>
<td>(City of New Ulm)</td>
</tr>
<tr>
<td>John Powell</td>
<td>(City of Savage)</td>
</tr>
<tr>
<td>Kevin Larson</td>
<td>(Brooklyn Park)</td>
</tr>
<tr>
<td>Kristin Asher</td>
<td>(Richfield)</td>
</tr>
<tr>
<td>Layne Otteson</td>
<td>(Fridley)</td>
</tr>
<tr>
<td>John Rodeberg</td>
<td>(SEH, Inc.)</td>
</tr>
<tr>
<td>Deb Bloom</td>
<td>(City of Roseville)</td>
</tr>
<tr>
<td>Lee Amundson</td>
<td>(Lincoln County)</td>
</tr>
<tr>
<td>Tim Mitchell</td>
<td>(MnDOT Bikes &amp; Peds)</td>
</tr>
<tr>
<td>Merry Daher</td>
<td>(MnDOT State Aid)</td>
</tr>
<tr>
<td>Michael Eastling</td>
<td>(Richfield)</td>
</tr>
<tr>
<td>Bruce Holdhusen</td>
<td>(MnDOT Research)</td>
</tr>
<tr>
<td>Farideh Amiri</td>
<td>(MnDOT Research)</td>
</tr>
<tr>
<td>Paul Stine</td>
<td>(MnDOT State Aid)</td>
</tr>
<tr>
<td>Mitzi Baker</td>
<td>(Olmstead County)</td>
</tr>
<tr>
<td>Shelly Pederson</td>
<td>(Bloomington)</td>
</tr>
<tr>
<td>Tim Quinn</td>
<td>(MnDOT Metro District)</td>
</tr>
<tr>
<td>Carissa Schively-Slotterback</td>
<td></td>
</tr>
</tbody>
</table>
Complete Streets Planning and Design Guidance Document

- Funded by MnDOT Implementation Funding Program ($200,000)
- We will engage a wide range of the Minnesota Transportation Community in developing and vetting the content
- Stand-alone guidance document for a wide audience
Complete Streets Planning and Design Guidance Document

- Intended to be a technical resource, not a policy document
- Drawing from existing standards and processes
- *Incorporating principles of Context Sensitive Solutions*
- Incorporating new information informed by research (MnDOT, LRRB, AASHTO, NCHRP, etc.)
Complete Streets Questions?

Scott Bradley – MnDOT
Director of Context Sensitive Solutions
Office of Environmental Stewardship
scott.bradley@state.mn.us
(651) 366-3302

Bruce Holdhusen – MnDOT
Research & Implementation Program Engineer
Office of Policy Analysis, Research & Innovation
bruce.holdhusen@state.mn.us
(651) 366-3760

Mn/DOT CS Website - www.dot.state.mn.us/planning/completestreets/