A MnDOT Context Sensitive Solutions (CSS) Webinar

Maintaining Pedestrian Access Through Construction & Maintenance Work Zones
Webinar Presenters

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A MnDOT Context Sensitive Solutions (CSS) Webinar

Maintaining Pedestrian Access Through Construction & Maintenance Work Zones

For more information and to view the webcast visit:
http://www.cts.umn.edu/contextSensitive
Understanding CSS

CSS is a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources while improving or maintaining safety, mobility & infrastructure conditions.

TH 38 from Grand Rapids to Effie

CSAH 3 Excelsior Blvd through St. Louis Park
Understanding CSS
Philosophy and Principles applying to Programs, Services, Planning, Project Development, Construction, Operations, and Maintenance ...
Understanding CSS
Philosophy and Core Strategies

- Strive towards a shared stakeholder vision to provide a basis for decisions
- Demonstrate a comprehensive understanding of contexts
- Foster continuing communication and collaboration to achieve consensus
- Exercise flexibility and creativity to shape effective transportation solutions while preserving and enhancing community and natural environments
CSS Principles

Original 15 Principles “Paraphrased”

- Use interdisciplinary teams
- Involve your stakeholders
- Seek broad public involvement
- Use a full range of communication strategies
- Seek consensus in determining purpose and need
- Address alternatives and all modes of transportation
- Seek safe facilities for all users
- Seek environmental harmony

- Address community and social issues
- Address aesthetic concerns and integrations
- Utilize a full range of design choices and flexibility
- Document all project decisions
- Track and meet all commitments
- Use agency resources effectively
- Create lasting value for communities and the public
CSS & MnDOT’s Strategic Vision & Plan

CSS Designated as a Flagship Initiative in December 2009

- To integrate CSS as a business model
- To build customer relationships & trust
- To improve processes & decision-making
- To balance competing objectives
- To seek collaborative & right-sized solutions
- To improve return on investments
- To achieve more of the benefits of CSS
CSS Benefits – Agency Emphasis

Correlated To Applying CSS Principles (NCHRP Report 642)

01. Improved predictability of project delivery
02. Improved project scoping and budgeting
03. Improved long-term decisions and investments
04. Improved environmental stewardship
05. Optimized maintenance and operations
06. Increased risk management and liability protection
07. Improved stakeholder & public feedback
08. Increased stakeholder & public participation, ownership & trust
09. Decreased costs for overall project delivery
10. Decreased time for overall project delivery
11. Increased opportunities for partnering
CSS Benefits – User Emphasis

Correlated To Applying CSS Principles (NCHRP Report 642)

12. Minimized impact to human and natural environments
13. Improved mobility for users
14. Improved walk-ability and bike-ability
15. Improved safety (motorists, pedestrians, bicyclists)
16. Improved multi-modal options (including transit)
17. Improved community satisfaction
18. Improved quality of life for communities
19. Improved speed management
20. Design features appropriate to context
21. Minimized construction related disruption
22. Improved opportunities for economic development
Legal Overview

Kristie Billiar, ADA Implementation Coordinator
Legal Context: Key Laws

- Minnesota Human Rights Act
- Section 504 of the Rehabilitation Act of 1973
- Americans with Disabilities Act of 1990 (ADA) – 5 Titles
Section 504 governs all programs and operations of recipients and sub-recipients of federal funds.
Title II covers all state and local government entities

- regardless of federal funding received
- regardless of size

www.pedbikeimages.org / Dan Burden
Federal law preempts state or local laws; accessibility requirements can not be reduced by state or local laws or administrative decisions.
Torts vs. Civil Rights

• Tort (Harm)
  – Liability is based on proof of harm (injury, damage, loss)
  – Person or property
  – Civil court filing or handled internally
**Torts vs. Civil Rights**

- **Civil Rights (Equality)**
  - **Objective:** To ensure equity in access to public services, programs and activities
  - **Claims must show differential or disparate treatment,** i.e., less or no access
  - **Causal link to disability status**
Title II of the ADA

Title II, Subpart A

- Prohibits state and local government agencies from discriminating against individuals with disabilities in access to and use of their services, programs or activities.

Title II Subpart B

- Prohibits state and local government transportation agencies from discriminating against individuals with disabilities in access to and use of their transportation services, programs or activities.

Both impact Mn/DOT as a state transportation agency
State and Local Responsibilities

- Wherever public agencies provide pedestrian facilities, those facilities are to be accessible to persons with disabilities.
- The accessibility of pedestrian facilities is required by ADA and is independent of funding sources.
The Cost of Non-Compliance

Non-compliance can be significant fiscally and in terms of public trust.

- FHWA can withhold funding for persistent non-compliance
- Fines and court awards can be tens of thousands of dollars, or more
- Attorney’s fees (may be needed even if claim doesn’t go to court)
- Poor public image
- Reputations of staff and elected officials may suffer
Procedures

- Complaints can be filed with Mn/DOT, MDHR, FHWA, USDOT or DOJ.
- Lawsuits filed in state or Federal District Court
- FHWA can withhold federal money after unsuccessful efforts to achieve compliance.
- For state DOTs and local government entities, the FHWA will seek voluntary compliance; if unsuccessful, the matter is referred to DOJ.
Why should the public agencies look for the best and most consistent way to address and implement ADA?

• It is the law.
• It is the right thing to do.
• Everyone benefits!
Module 1: Legal Overview

Questions?
Temporary Pedestrian Access Route (TPAR)

Todd Grugel, PE
ADA Program Engineer

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Start Doing Something
• R205 Alternate Pedestrian Access Route

When an existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary conditions, an alternate pedestrian access route complying to the maximum extent feasible with R301, R302, and Section 6D.01 and 6D.02 of the MUTCD (incorporated by reference; see R104.2.1) shall be provided.
PROWAG

Highlights of R302 Pedestrian Access Routes

Provide the following:

- Firm, stable, slip resistant surface
- 4’ minimum width
- Maximum allowable grades
  - 8% running slope
  - 2% cross slope
- Maximum ½” vertical deflections and horizontal gaps
When Existing pedestrian facilities are disrupted, closed or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
Provide Detection

• Side detection when temporary route is channelized and changes direction

• Temporary truncated domes at street crossings

• Provide effective safety barriers – define construction zone and potential hazards
Ineffective Barriers

- Ineffective barriers (plastic tape) around the site
- Fails to provide detection around site
Ineffective Barriers
Advisory R205 Alternate Pedestrian Access Route. Same-side travel is preferred because it does not increase pedestrian exposure and risk of accident consequent upon added street crossings.
Detours

• Make sure detours are reasonable
  – Other side of street is reasonable
  – 1 block parallel is reasonable
  – Is 2-3 blocks parallel reasonable ???

• Reasonable can vary in different situations

• Long detours “feel good” but do they meet needs?
Taking a Lane
TPAR Implementation

Traffic engineer and Project Engineer should look at the pedestrian needs on the project and put a concept of how to accommodate the needs in the plan and in the time and traffic.
TPAR Implementation

Options to consider:

1.) Making use of roadway lane, shoulder, or parking lane

2.) Crossing pedestrians to the other side of the street and then crossing them back

3.) Providing a reasonable detour

4.) Maintaining use of existing sidewalk through project staging
TPAR Implementation

When TPAR is not practical alternate construction staging and or pinch construction timelines so that pedestrian facilities are interrupted for as little time as possible.
Meeting the Needs
Without meeting all the criteria
“I Want To Do It Myself”
Where's the accessible alternate route?
DETOUR
Accommodating Pedestrians with Disabilities in Work Zones

CSS Webinar – 12/8/11

Ted Ulven & Ken E. Johnson
Work Zone and Pavement Marking Unit
MnDOT OTST
What we’ll answer today...

• Why is this necessary?
• Is it really that bad?
• How will we accommodate pedestrians with disabilities?
• What guidance is available?
Caltrans Settlement

- In December 2009 two long-running ADA lawsuits were settled.
- $1.1 billion to be spent over 30 years to improve access.
- They will ensure that TPAR’s around and through Work Zones are accessible.
MnDOT TPAR Workshop

• In June 2010 MnDOT and ATSSA held a workshop for Industry and Public Works.
• A focus group of disabled participants evaluated and commented on devices.
• What we learned was incorporated into the TPAR drawings we currently use.
• A report is on the MnDOT TPAR website.
MnDOT TPAR Workshop
Caltrans ADA Demo

• In June 2011 Caltrans and ATSSA held an ADA work zone device demonstration.
• 15 states and DC participated in evaluating the TPAR devices with a disabled partner.
• Products were improved based on experience from the MnDOT event.
• A training video will result from this effort.
Caltrans ADA Demo
Chapter 6A.1 – General (Standard)

The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a temporary traffic control zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents.
• Chapter 6D – Pedestrian and Worker Safety

• If the Temporary Traffic Control (TTC) zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided. If the TTC zone affects an accessible and detectable pedestrian facility, the accessibility and detectability shall be maintained along the alternate pedestrian route.
Others can benefit, too
Is it really that bad?
Is it really that bad?
DO NOT WALK IN STREET PLEASE USE OTHER SIDEWALK
How will we accommodate in Work Zones?
Tech Memo 10-02-TR-01: Public Rights of Way Accessibility Guidance (see document)

• Draft PROWAG of 2005 is primary guidance for accessible facility design on Mn/DOT projects

Public Rights of Way Accessibility Guidelines

When an existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary conditions, an alternate pedestrian access route ... shall be provided.
How will we accommodate?

- **Follow:**
  - Tech Memo 10-02-TR-01, by reference PROWAG
  - Standards listed in MnMUTCD
    - Including the Field Manual
- **Expected to be in TCP of PS&E**
  - Long term accommodation
- **Boilerplate Special Provision – S-270**
  - Temporary Pedestrian Access Control
What guidance in available?

• Mn/DOT TPAR website
  – Google mndot tpar
  – Contains links to PROWAG
  – Contains information gleaned from feedback gathered at TPAR Workshop and Demo
    • Hosted by Mn/DOT, National ATSSA, and the Northland Chapter of ATSSA in June 2010

• Intend to add
  – TPAR Design Guidance (currently working on draft)
  – Approved Products List Devices
Major elements of TPAR

• Increased awareness of the issue
• At minimum, provide equivalent level of accessibility
• Consider impacts to pedestrian routes in early stages of project development, even in Scoping
• Include TPAR in Traffic Control Plan
• Consider staging to minimize impacts to PAR and to implement TPAR
• Attended versus unattended work zones
Possible tools

- **ADA Coordinator: Cedar BRT**
  - Responsible for and perform the accessible route management
    - Ensure the accessible devices are working as required
    - Provide sufficient surveillance of the accessible devices
    - On call and available within 45 minutes of notification
    - Preparing and revising the accessible route plan as required
    - Maintain a Project Accessible Route Diary
  - Dakota County feels that this is working well
  - Hard to estimate – the costs could be huge
2010 TEMPORARY PEDESTRIAN ACCESS ROUTE STUDY

People with physical disabilities as well as people who as professionals provide Orientation and Mobility Training for this community met in St. Paul, MN in June 2010. The purpose was to visit and discuss their reactions to an exhibit of devices which are being designed to provide safe transport in temporary pedestrian detour situations.

The findings (per Mn/DOT Market Research via Independent Consultant) from this qualitative research study support these KEY LEARNINGS about TPARs:

There are three “over-arching themes” in addition to specific reactions to 16 devices:
- Trainers and those people with physical disabilities agreed nearly unanimously that temporary pedestrian detours need:

1. Standards that are shared with them so that they can teach/navigate on their own, knowing what to expect and having one source to call for questions, reports/updates.

2. Communication with them as a community may go through several channels such as state/city/private agencies specific to all of the groups represented (and some not present such as people with cognitive disabilities). It should include dates or anticipated work on local sidewalks, signage “at the site” for both sighted and unsighted, hearing and non-hearing, with info that tells them what lies ahead so they can make an informed decision on whether or not to continue.

3. Last but not least, most participants totally dislike asking for help: they ask that Mn/DOT create a temporary sidewalk which they can travel on their own, the majority of the time. “Make it so I can do it myself!” — was often heard.

Detailed findings on device types: (see full consultant's report for more info)
Preferences from people with disabilities/Trainers for temporary pedestrian detours:
- A sufficiently wide walkway (minimum 48") to allow for safe passage of wheelchairs/motorized carts & service animals if walking alongside.
- Channelizing devices along the walkway are sturdy & stable: will not tip if one loses their balance and falls into them. Devices are straight up and down versus angled; ones that are free of anything protruding from the sides or from openings along the bottom edge — holes, etc. causing a can or a walker leg to catch and potentially disorient or "trip-up" a person. A continuous railing on the top to allow someone to place their hand on the railing and move their hand along the railing without encountering gaps, slivers or materials too hot or cold to the touch. Orange and white stripes are preferred on rails and barrier sides.
- Surfaces and temporary ramps free of movement/vibrations, made of materials that won’t become slippery when wet/frosty; and not cause glaring from the sun or other bright light. Again: temperature plays a role — potentially causing injury to the paws of a service animal.
- Transitions between 2 surfaces, perhaps logically so, must be smooth, sturdy & made of non-slippery materials, especially to accommodate elevation changes. If using ramps, must be as wide as the detour walkway surface with an ideal slope of 8 percent or flatter.

For More Information Contact:
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What guidance in available?

2011 Field Manual Layouts

- Typically thought of as for 3 days or less, but TPAR diagrams are useful for longer impacts (pictorial representation of PROWAG)

- Review each sheet
Detour

- When pedestrian features impacted, maintain same level of accessibility
- Sign message should include:
  - Duration of impact
  - Project contact number
  - If it meets minimums of TPAR
    - Symbol of Accessibility
- Audible or tactile message device should be provided. When used:
  - Same as sign
  - Physical description
- Document conditions that don’t meet recommended standards
- Cover Pedestrian Traffic Signal Displays if crosswalk closed
Bypass

• Same as Detour
• Temporary truncated domes are optional depending on cross-street
• TPAR width
  • 60” preferred
  • 48” minimum
  • 60” required every 200’
• Temporary curb ramps
  • 12:1 slope or flatter
  • Firm, stable and slip resistant
• High-speed and/or high volume
  • Barrier with taper and attenuation should be used
Devices

- Keep walkway free
  - Ballast behind channelizer
  - Any support into walkway
    - Maximum 1/2” with bevelling
    - Not extend into 48” min clear
- Detectable edges for long canes
  - 2” maximum above surface (drainage)
  - 6” minimum height
- Railings or other objects (phones)
  - May extend into clear a max of 4” when 27” minimum above surface
- Hand guidance (when included)
  - Continuous at 36”-38” above surface
  - Minimum interference to hands/fingers
- Should interlock to close gaps
- Free from sharp or rough edges
- Positive protection - crashworthy
Devices - Ramps

- 48” minimum width
- Firm, stable and non-slip
- >6” vertical drop or side slope >1:3
  - 2” min height protective edging
  - Consider when >3” vertical drop
- Ramp turns
  - 6” min height detectable edging
  - Contrasting color
- 2% maximum cross-slope
- 48”x48” clear space at top and bottom
- **Walkway edge marking 2”-4”**
- Lateral joints or gaps < ½”
- Surface height changes < ½”
  - Lateral edges can be vertical up to ¼”, then bevel between ¼” and ½”
- Allow drainage

### Typical ADA Pedestrian Devices

Refer to the Mn/DOT TPAR website for additional standards, guidance, and options for designing temporary pedestrian access routes.

[http://www.dot.state.mn.us/trafficeng/workzone/tpar.html](http://www.dot.state.mn.us/trafficeng/workzone/tpar.html)
Thoughts from Construction

• Make sure the inspectors have a passion for this
• Be clear in the plan, specs, and special provisions
  – PROWAG and Field Manual say “firm, stable, and slip resistant”
  – Special provision “hard surfaced using hot mix bituminous or PCC or other material approved by the engineer”
  – Include staging of pedestrian routes
  – Be specific on locations of crossings, bypasses and detours
It can be done

• Things to watch for
• Examples of good (relatively)
• Suggestions for improvement?
Pedestrian and ADA Access During Construction
Charleen Zimmer, AICP, Zan Associates
December 8, 2011
Two Case Studies

Hwy 169 – Saint Peter

Central LRT – University of MN
Construction Staging

Hwy 169 – Closed Through Downtown
Sidewalk Construction Staging
Sidewalk Construction Staging

Date of sidewalk work:
Work will occur from 10 PM to 10 AM

Oct 6-Grading
Oct 7-Pour

Oct 5-Grading
Oct 6-Pour

Oct 4-Grading
Oct 5-Pour

Oct 3-Grading
Oct 4-Pour

Washington Ave

US Bank

DQ

Paradigm
Copy
Ebert & Gerberts

Bruegger’s
Bagels

Jasmine
Orchid

Gold Country

Topper’s
Pizza

Software
Consulting

Steady
Tattoo

Sally’s

Jasmine
Orchid

First
Care

First
Care

Door Unavailable During Sidewalk Work

Door Available During Sidewalk Work
Work Zone Fencing
Pedestrian Detour Signing
Sidewalk Detour Signing/Striping
Access Across Work Zone
Temporary Curb Ramps
Access to Buildings
Access to Buildings
Back Door Access
Saint Peter Kids Learn Why “Road Safety Matters”

Considering the crowd (about 150 families) that showed up at the “Road Safety Matters” event on Tuesday, August 18th, it was pretty apparent that road safety matters to the families in and around Saint Peter. The City of Saint Peter and Mn/DOT coordinated the “Road Safety Matters” event in preparation for the upcoming school year, as well as to educate everyone about pedestrian safety and staying safe near construction work zones.

Above: Officer Melinda Meyer helps a boy into a safety vest before an interactive walk to the Highway 169 construction site. Children were allowed to keep the vests.

Left: Children lined up to sit behind the wheel and hone the horns of the different construction vehicles lined up in the parking lot of the Saint Peter Community Center.
All About the Details
Daily Vigilance
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Audience questions?

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