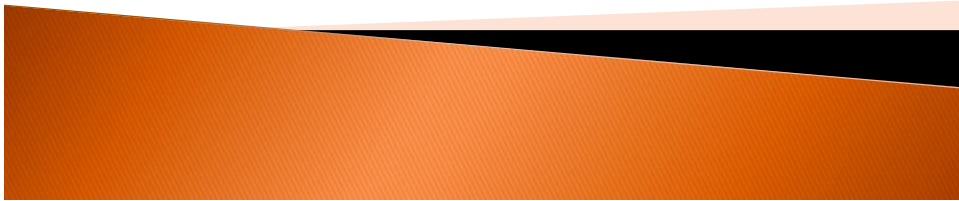


Pedestrian Crossing Safety

2017 Toward Zero Deaths Conference
Oct. 26–29, 2017

Kristi M. Sebastian, P.E., PTOE
Dakota County



Pedestrian Safety

“Pedestrian deaths increased by 9% in 2016 (the highest number since 1990).”

USDOT 2016 Fatal Traffic Crash Data release
source – National Highway Traffic Safety
Administration



Pedestrian Crossing Safety

- ▶ Pedestrian signs and markings, without enhancements, have been found to be **ineffective**.
- ▶ Roadways with speeds ≥ 45 mph – Do NOT install Marked Crosswalk (*additional crossing enhancements should be considered*).
- ▶ *Lower speed roadway– consider enhanced signs, geometric improvements ...*

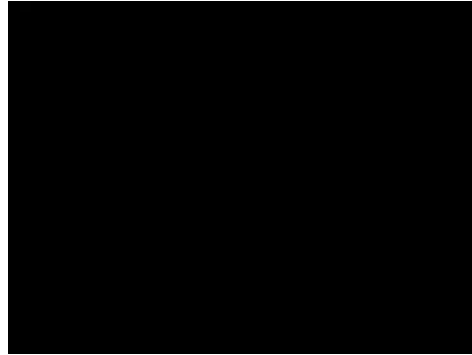
Reference – Mn/DOT Pedestrian crossing facilitation tech memo (Jan. 7, 2015)

Pedestrian Crossing – Challenge

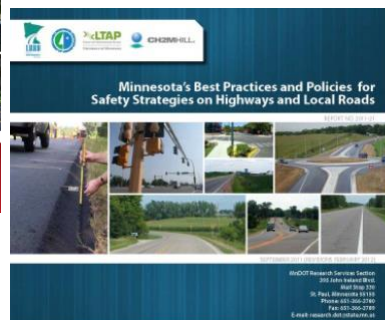
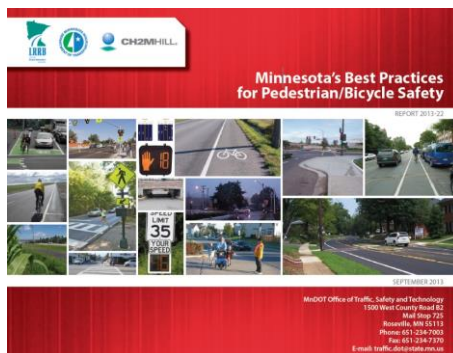


“Best” Approach

- ▶ Signal with NO Vehicle Traffic during Crossing
- ▶ Exclusive Pedestrian Phase – “Barn’s Dance”
- ▶ May also present issues – particularly near college campus during finals week.



Pedestrian Crossing Safety – Resources



Strategies

	Strategies	Pages	Crash Reduction/ Crash Features	Proven/Tried/ Experimental	Operational Effects (Mobility)	Candidate Locations
Pedestrian Safety Strategies	Sidewalks	1-2	50 to 90% reduction in "walking in roadway" pedestrian crashes	Proven	N/A	Urban arterials & collectors
	Crosswalks and Crosswalk Enhancements	3-8	Varies	Proven/Tried	N/A	Intersections
	Medians and Crossing Islands	9-10	39 to 46%	Proven	May provide operational benefits	Wide 2-lane roads and multi-lane roadways
	Curb Extensions	11-12	39 to 46%	Proven	Potential reduction in speeds	Urban arterials and collectors with curb parking
	Pedestrian Hybrid Beacon System	13-15	60%	Tried	Additional delay for vehicles stopping for pedestrians	Mid-Block Crosswalk locations — Not at intersections
	Rectangular Rapid Flashing Beacon	16-17	78 to 100% yield to pedestrian rate	Tried	Additional delay for vehicles stopping for pedestrians	Mid-Block Crosswalk
	Crosswalk Lighting	18-19	33 to 44%	Proven	N/A	Isolated crosswalks not along a continuously lit roadway
	Traffic Signals	20-22	Leading Pedestrian Interval — 60%	Tried	Increases delay and reduces mobility of major roadway	Intersections that meet signal warrants

Key – Review Specifics of Location

- ▶ Assess Issues
- ▶ Involve Stakeholders
- ▶ Develop Plan for the specific location
- ▶ Action may often involve several elements – Engineering Changes, Education & Enforcement

Heritage Middle School Project

County Rd. 6, Butler Avenue in WSP

- ▶ Issue – Problematic parent pick-up process, Parked cars creating safety issue, multiple access points.



Heritage Middle School Project

Action:

- ▶ New Mid-Block Crossing with Pedestrian Bump Out
- ▶ Removal of access and lot reconfiguration to accommodate parent's drop-off / pick-up of student's in safer more effective manner
- ▶ Turn lane for the main school access
- ▶ School Crossing Guards
- ▶ Parent information sent to describe crossing and student pick-up process

Heritage Middle School Project



County Highway 33 and 145th *Apple Valley and Rosemount*

- ▶ Issue: Unmarked intersection along high Speed Roadway near school with desired pedestrian crossing activity between residential area and school/park facilities.



County Hwy 33 and 145th

- ▶ Action: Modify Roadway configuration to *creating a pedestrian refuge and fewer traffic conflict points.*



County Highway 11 and Evergreen *By Echo Park Elementary School in Burnsville*

- ▶ Ineffective existing school zone and flashing beacon system (*speed studies / comments from law enforcement*).
- ▶ Concern for crossing by general traffic and some school children although school district buses across intersection.
- ▶ Several meetings with school, city staff and policy to determine needs and best approach.

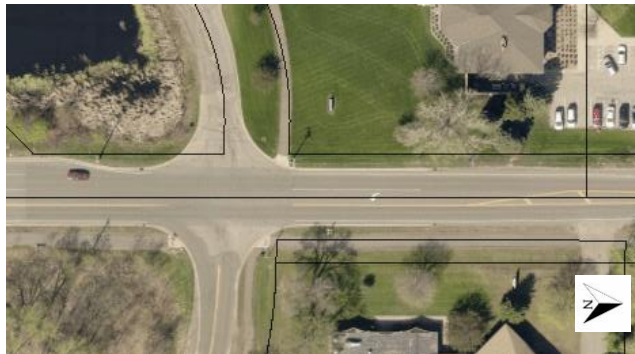
County Highway 11 and Evergreen

- ▶ Action: *Installation of the “HAWK” and curb bump-out to lessen crossing distance. Plus, educational information and collaboration with school.*



County Road 43 and Victoria Road in Mendota Heights

- ▶ Issue: *Busy pedestrian area with request for crosswalk markings.*



County Road 43 and Victoria Road

- ▶ Removed turn lane to create median area for separating movements and enhancing the crossing.



Concord (Hwy 56) & 75th street in Inver Grove Heights

- ▶ Issue: High level of pedestrian activity. Three Lanes – no median. High Speed Roadway.
- ▶ Action: Ped ramps and lighting – No Markings



Pedestrian Safety – Key Steps

- ▶ Understand specifics of the location.
- ▶ Develop solution based on the problem and proven strategies / tools.
- ▶ Engage local stakeholders
- ▶ Implement educational and enforcement solutions with engineering changes when applicable.
- ▶ Each location had different issues and characteristics which garners different solutions.

