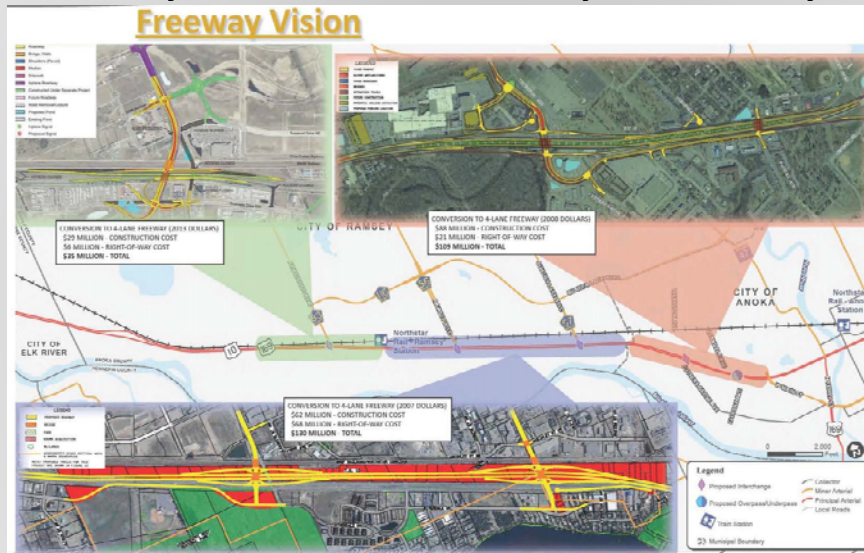


TH 10 Access Planning Study

City of Ramsey
 City Council Workshop
 October 29, 2013



Why Another Study on Hwy 10?



Why Another Study on Hwy 10?

Study Problem Statement:

Highway 10 is a principal arterial roadway providing a significant transportation connection from Minneapolis - St. Paul to the northwest suburbs and beyond. The 4-lane roadway (Anoka/Sherburne County line to the Rum River) carries average daily traffic volumes ranging from 33,500 to 61,000 vehicles per day.



Why Another Study on Hwy 10?

Study Problem Statement (continued):

Highway 10 has been studied numerous times over the past decade, each time furthering the planning for conversion to a full freeway. Based upon traffic volumes and safety concerns, a freeway is the proper vision for this corridor. The corridor is commonly congested and has much higher than average crash and severity rates than comparable corridors.



Why Another Study on Hwy 10?

Study Problem Statement (continued):

In addition, the corridor has five signalized intersections and numerous other access points (14.5 per mile) contributing to the degradation of the facility. Over the past 10 years, 13 people have died in crashes on the 7-mile corridor. Four of these fatalities were pedestrians, including three in the past 18 months.



Why Another Study on Hwy 10?

Study Problem Statement (continued):

Considering current overall state and federal funding levels, it will be difficult to achieve the vision of a freeway facility on this portion of Highway 10 within the next 20 years. To reduce crashes and improve mobility issues, it is reasonable and responsible to implement lower cost, interim measures that incrementally improve safety and operations for all users of the Highway 10 corridor.



Why Another Study on Hwy 10?

Study Problem Statement (continued):

The intent of this study is to identify high-benefit improvements that are fiscally responsible so that improvements can be funded, programmed, and implemented incrementally. The price paid for waiting for funding to construct expensive, comprehensive improvements will be continued congestion, numerous conflict points, and continued severe and fatal crashes.



Improvement Concept Approach

Access Management Approach

- Reduce Conflict Points at Public Street Intersections
 - Medians, Channelization, Acceleration/Deceleration Lanes
 - Grade Separation
 - Street Closure
- Remove or Consolidate Conflict Points at Driveways
 - Strategically Locate Driveways along the Roadway
 - Modify Site Layout with Existing or Changed Land Use
 - Purchase and Relocate Land Use
- Driver Information using Technology



Reduced Conflict Intersections

Right In / Right Out Intersection

- Enables access to and from one direction of travel on main route
- Continuous flow on mainline traffic in both directions



TH 65 south of 105th Avenue in Blaine, MN

Source: Google Maps



Reduced Conflict Intersections

Three Quarter Intersection

- Enables access from both directions and to one direction of travel on main route
- Continuous flow on mainline traffic



CSA11-2 at Southcross Drive in Burnsville, MN

Source: Google Maps



Reduced Conflict Intersections

Acceleration/Deceleration Lanes

- Enables more consistent speed in mainline traffic



TH 52 in Zumbrota, MN



Source: Google Maps

Reduced Conflict Intersections

Restricted Crossing U-Turn (RCUT)

- Enables access to and from both direction of travel on main route
- Crossing movement made with right turn onto main route, u-turn, and right turn off main route.



TH 212 at TH 284 in Cologne, MN



Reduced Conflict Intersections

Continuous Green T Intersection

- Continuous flow for one direction on main route
- Signalized flow for other direction on mainline and cross street left turns



SR-1 at SR-5 in Ormond Beach, FL



Charlotte, NC



John Nolen Drive, Madison, WI



Source: Google Maps

Reduced Conflict Intersections

Median U-Turn

- Signalized flow for mainline and cross street thru movements
- Left turns enabled thru combination of right-turn and U-turn
- Increase in green time for mainline



Big Beaver Road at Rochester Road, Troy, MI



Source: Google Maps

Reduced Conflict Intersections

Jughandle

- Mainline left turns by combination of right-turn and thru movement
- Increase in green time for mainline



US-1 at Franklin Corner Road, Lawrenceville, NJ

Source: Google Maps



Reduced Conflict Intersections

Continuous Flow Intersection

- Increase in green time for mainline
- Left turns are accomplished by crossing conflicting traffic before reaching the main intersection



West Valley City, UT

Source: Google Maps/YouTube/UtahDOT



Grade Separation

Pedestrian and bicycle routing to more desired grade separated crossings

- Encourage crossings at underpass or overpass locations
- Median restrictions to discourage crossings at undesired locations
- Parallel sidewalk and/or trail to reach desired locations



TH 10 west of TH 65 in Blaine, MN



TH 21 at TH 3 in Faribault, MN



Source: Bing Maps



Grade Separation

High T Intersection

- Continuous flow for both main route directions
- Left turns to and from cross street are signalized



TH 13 at CSAH 101 in Savage, MN



Grade Separation

Mini-Cloverleaf

- Continuous flow for both main route directions
- Left turns to and from cross street are grade separated and not signalized



Quaker Bridge Mall, Lawrenceville, NJ



Source: Google Maps

Grade Separation

Flyover Bridge

- Removes a high volume movement from a signalized intersection
- Provides more green time for the major road



I-94 West to North TH 101 in Rogers, MN



Source: Bing Maps

Grade Separation

Local Street Overpass / Underpass

- Continuous flow for both main route directions
- Can maintain access to businesses on local streets



TH 23 at 10th Avenue in St. Cloud, MN



TH 212 at Pioneer Trail and Bluff Creek Drive in Chaska, MN



Source: Google Maps/Bing Maps

Street Closure

Frontage /Backage Road Connectivity

- Consolidates business and property access points to one location off the minor road
- Less interruption to major road traffic



Backage road along TH 65 in Blaine, MN



Frontage road along TH 65 in Blaine, MN



Source: Google Maps

Driveway Removal

Driveway Relocation/Consolidation

- Consolidates business and property access points
- Reduce conflict points on major road



2004 Image of TH 169 in Belle Plaine, MN before driveway closure



TH 169 in Belle Plaine, MN after driveway relocation



Source: Google Maps

Driver Information using Technology

Overhead lane use signs

- Provides advanced incident warning
- Provide queue warnings by slowing down approaching traffic
- May help emergency vehicles access incident location quicker
- Could operate a dynamic shoulder lane for additional roadway capacity



Overhead Lane Use Signs

Advanced queue warning system

- Provide advanced queue warning to drivers



Advanced Queue Warning



Source: Google Maps

Driver Information using Technology

Overhead Dynamic Message Sign (DMS)

- Provide advanced warning of incidents or construction
- Provide road condition warnings
- May help emergency vehicles access incident location quicker
- Provide travel times to inform drivers of relative levels of congestion ahead



Overhead Dynamic Message Sign

Signal Timing

- Railroad preemption

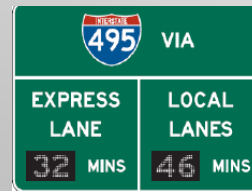


Source: Google Maps

Driver Information using Technology

Hybrid travel time sign

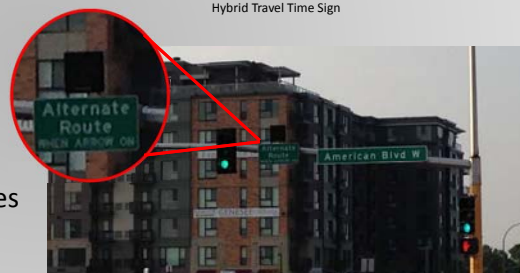
- Shows travel times to fixed locations
- Combines static guide sign and variable message signs
- Enables driver trip selection based on real time information



Hybrid Travel Time Sign

Alternate Route Guidance

- Shows travel times using alternate routes
- Enables drivers to select routes to avoid accident or train events



I-494 Alternate Route Sign, Bloomington, MN



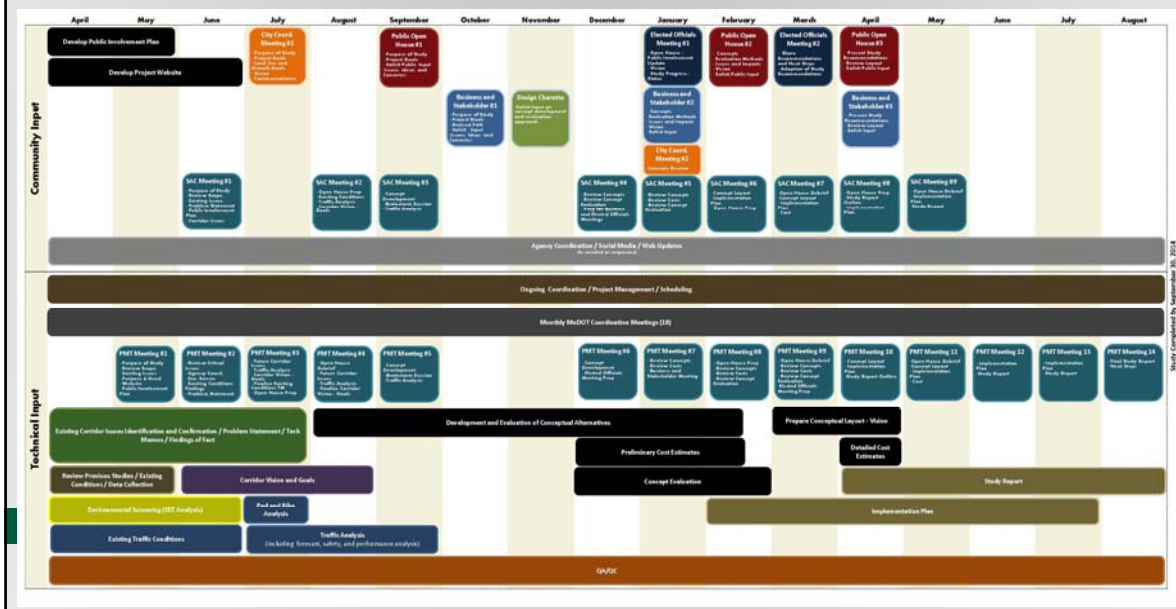
Source: USDOT/MUTCD/Google Maps

TH 10 Access Planning Study will...

- Identify lower-cost, high benefit safety, mobility, and access solutions that can be built in the near future
- Consider improvements that can be utilized in future transition to freeway
- Support construction of TH 10/Armstrong Boulevard



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