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# UPA – An innovative partnership building a safe, reliable and modern transportation system

#### INTRODUCTION

The UPA is a series of projects funded by the U.S. Department of Transportation and the State of Minnesota aimed at improving traffic conditions by reducing congestion on Interstate 35W, Highway 77/Cedar Avenue and in downtown Minneapolis using transit, road pricing, technology and telecommuting. When completed in 2010, commuters will experience more transportation choices, less traffic congestion and reduced commute times on some of the busiest roadways in Minnesota.

Funded by \$133.3 million in federal funds and \$50.2 million in matching state funds, this innovative partnership allows Minnesota to leverage federal dollars and keep project costs low while pioneering new ways to move people and goods more efficiently. Building the UPA creates jobs, increases safety on the road, moves goods more efficiently and improves the quality of life for motorists. Under the leadership of the program partners, UPA is improving safety and mobility through innovation. The results of this groundbreaking collaboration will deliver 21<sup>st</sup> century transportation solutions to 21<sup>st</sup> century transportation challenges in Minnesota and cities across the country.

**Background** 

In 2007, Mn/DOT and the Metropolitan Council applied for and were awarded \$133.3 million of federal funds contingent upon appropriation of \$50.2 million in matching state funds and enabling legislation that were provided in the 2008 Minnesota legislative session. The Minneapolis-St. Paul metropolitan area was one of five regions of the country collectively awarded a total of \$853 million in federal discretionary funds. The other regions were Miami, New York (since withdrawn due to lack of legislative authority), San Francisco and Seattle. In addition, Los Angeles, Chicago (since withdrawn due to lack of legislative authority) and Atlanta have since been awarded funds for congestion reduction. The intent of the program has been to try new concepts, or packages of innovative concepts, that together will create more congestion reduction benefits than traditional concepts implemented on a stand-alone basis.

In Minnesota, the UPA implementation plan is a regional collaboration involving many entities with responsibilities for various components of the program. These include:

- Minnesota Department of Transportation
- Metropolitan Council / Metro Transit
- City of Minneapolis
- Minnesota Valley Transit Authority (MVTA)

Urban
Partnership
Agreement
Implementation
Report
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- University of Minnesota (U of M)
- Transportation Management Organizations (TMO)

Although the UPA focuses on the I-35W and Highway 77/Cedar Avenue corridors, several congestion reduction elements have region-wide significance, including the dedicated bus lanes in downtown Minneapolis along Second Avenue South and Marquette Avenue South and the telecommuting component. The Second and Marquette improvements will have broad regional implications for transit service that begins or ends in downtown Minneapolis and that use those parallel streets. Likewise, telecommuting efforts, if successful, will transcend specific routes or city boundaries and offer the potential for significant personal and collective time and cost savings in the Twin Cities.

#### Implementation Timeline

The UPA termsheet with the U.S. DOT required that the highway projects be operational by Sept. 30, 2009, and most of the transit projects, including the downtown Minneapolis transit lanes, be completed by Dec. 31, 2009. Those timelines were met. The exceptions are the High Occupancy Toll lane within the Highway 62/Crosstown project area, Cedar Grove Transit Station in Eagan, and the Driver Assist System along Cedar Ave, all of which will be completed on or before October 31, 2010. (See Table 1 for a map and timeline of all projects).

To date, Mn/DOT, Metro Transit, City of Minneapolis, MVTA and the U of M have opened their respective UPA program elements to the public on or ahead of schedule. The overall UPA program is anticipated to be completed under budget after the final three program elements are operational by the fall of 2010.

#### **UPA Project Elements Summary**

During 2009, UPA partners identified project elements, created detailed plans, developed and constructed projects. Lead agencies attained environmental clearances where needed. Public outreach and communications efforts by UPA partners throughout the 2009 construction season kept various audiences apprised of the short term impacts of building the project, while reminding motorists, transit riders, business owners and policymakers of the long term benefits of the UPA.

During 2009, UPA partners constructed many projects to support the goals of the UPA. What follows is a brief summary of those transit, road pricing, technology and telecommuting project elements. The report also includes early results from a couple of the transit projects, the southern portion of the I-35W high occupancy toll lane and the priced dynamic shoulder lane. A more extensive performance report on all of the program elements will be available in the third Annual UPA Legislative Report due January 15, 2011.

#### Summary – UPA project elements

Priced dynamic shoulder lanes opened on Sept. 30, 2009 from 46th Street to downtown
Minneapolis on northbound I-35W. This new lane use allows buses to now travel at free-flow
freeway speeds instead of the current 35 mph limit on bus-only shoulders. The priced dynamic
shoulder lanes are also used during peak periods as shared rapid transit lanes for buses,
carpoolers and MnPASS express lanes for single occupancy vehicles. Between Sept. 30 and
Dec. 31, 2009, I-35W has averaged about 7,000 total trips per week or about 1,400 toll

















paying trips per day in the north and south bound MnPASS Express Lanes from Highway 13 in Burnsville to I-494, and from 42nd Street into downtown Minneapolis. Weekly toll revenue on I-35W amounted to more than \$5,000. During the same timeframe, there were 82,474 total trips with tolls charged amounting to \$67,739.

 As of Dec. 31, 2009, the new I-35W MnPASS Express Lanes now have 3,881 active accounts and 4,371 transponders. There are a total of 14,549 active accounts and 17,918 transponders currently being used on the two express lanes.

#### **Transit**

- A 24-block, street and sidewalk reconstruction of Marquette and Second Avenues South in downtown Minneapolis provides an expansion from one reverse flow bus lane to two, wider sidewalks, custom transit shelters, and enhanced pedestrian streetscape. This improvement allows up to three times as many express buses to serve downtown on these two streets and reduce bus travel times through downtown by up to 10 minutes.
- The addition of over 2,800 parking spaces at six new or expanded park-and-rides serving I-35W or Cedar Avenue.
- The purchase of 27 new buses serves new and existing park-and-ride spaces along I-35W and Cedar Avenue.
- The construction of a bus-only left turn lane and signal from northbound Highway 77 to westbound Highway 62 provides a reliable and quick trip for bus loads of express customers every weekday morning.

#### **Road Pricing**

- Existing high occupancy vehicle lanes on I-35W from Burnsville Parkway to I-494 were converted to MnPASS Express lanes on Sept 30, 2009.
- Upon completion of the Crosstown project in the fall of 2010, a new I-35W MnPASS Express lane from I-494 to 46th Street will be opened.
- Priced dynamic shoulder lanes opened on Sept. 30, 2009 from 46th Street to downtown Minneapolis on northbound I-35W. This new lane use allows buses to now travel at free-flow freeway speeds instead of the current 35 mph limit on bus-only shoulders. The priced dynamic shoulder lanes are also used during peak periods as shared rapid transit lanes for buses, carpoolers and MnPASS express lanes for single occupancy vehicles. Between Sept. 30 and Dec. 31, 2009, I-35W has averaged about 7,000 total trips per week or about 1400 toll paying trips per day in the north and south bound MnPASS Express Lanes from Highway 13 in Burnsville to I-494, and from 42nd Street into downtown Minneapolis. Weekly toll revenue on I-35W amounted to more than \$5,000. During the same timeframe, there were 82,474 total trips with tolls charged amounting to \$67,739.

#### **Technology**

 Global positioning satellites and in-vehicle technology will be used on 10 buses serving Cedar Avenue and will assist bus operators keep buses centered in narrow bus only shoulders, to

















ensure safe, reliable and consistent daily bus operations.

- Real-time information signs at every bus stop along Marquette and Second Avenues in downtown Minneapolis and at five park-and-rides and transit stations along I-35W and Cedar Avenue provide travelers information on when the next bus will arrive.
- In-vehicle and intersection controller technology along Central Avenue in Minneapolis and Columbia Heights provide consistent and reliable bus operations along the corridor.
- Real-time signs displaying auto-to-bus travel time comparison and park-and-ride space availability on I-35W and intersecting roadways from four park-and-rides shows travel time saving of using transit.
- Cameras on local roadways connecting to the I-35W and Cedar Avenue/Highway 77 corridors will provide traveler information for motorists and improve traffic flow.

#### **Telecommuting**

- Partnerships with major employers along the I-35W corridor and in downtown Minneapolis
  have been established to promote flex-time and telecommuting programs with a goal to
  increase the number of telecommuting workers who would normally commute on I-35W by 500
  individuals by 2011. While the UPA has currently exceeded the goal, having generated
  commitment from three major employers for 960 employees to telecommute at least once per
  week, recruitment and monitoring continue.
- The eWorkPlace telecommuting initiative was launched in June, 2009 to reach employers and employees interested in traditional telecommuting to improve efficiency and performance.
   Policy, training and technical assistance are offered through eWorkPlace to assist companies and their employees with telecommuting efforts. At this time almost 1,100 employees are enrolled in eWorkPlace.







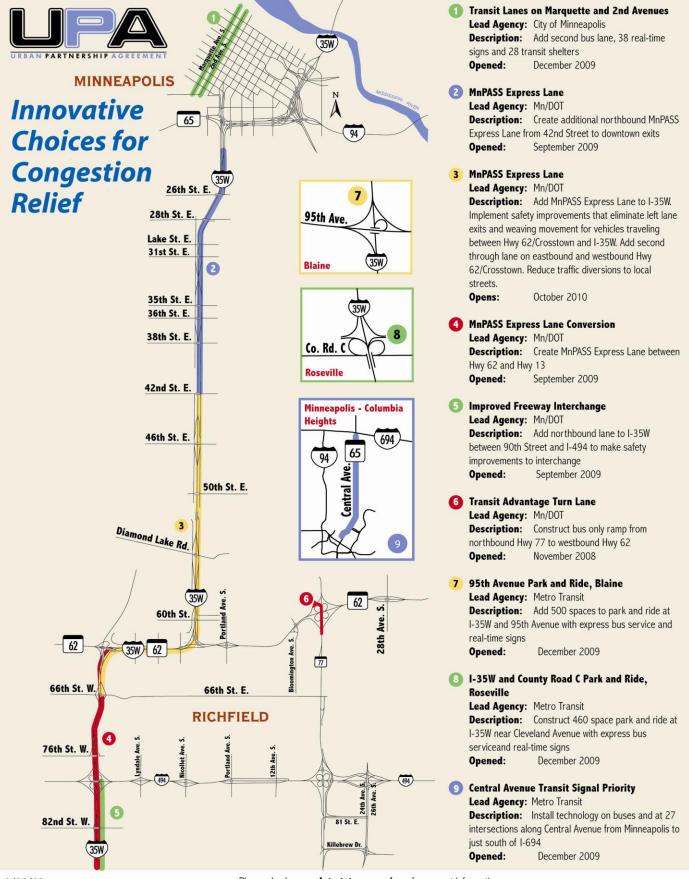














Please check www.dot.state.mn.us/upa for current information.







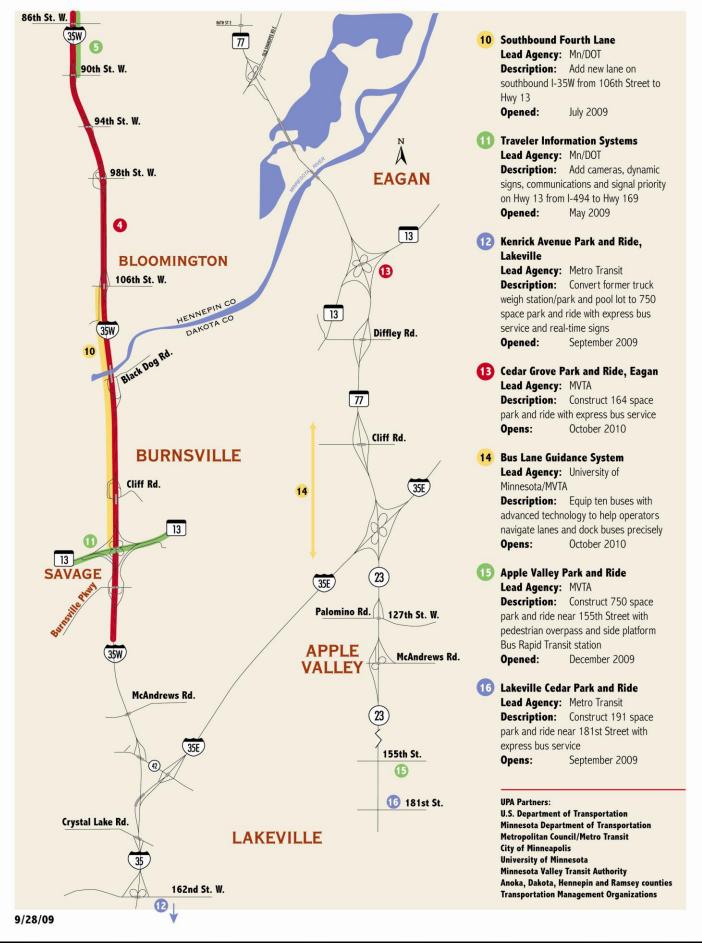




























### UPA PROGRAM FUNDING SUMMARY

#### Table 1. SOURCES OF STATE AND FEDERAL FUNDS

Federal Funds Source	Funding Amount	Total
Federal Transit Administration (FTA) 5309 Bus Capital	\$85,900,000	
Research and Innovative Technology Administration (RITA) Intelligent Transportation System Op Test Mitigate Congestion	\$19,400,000	
Transportation Community/System Preservation	\$16,400,000	
Interstate Maintenance Discretionary	\$6,600,000	
Value Pricing Pilot Program	\$5,000,000	
Total Federal Funds		\$133,300,000
State Funds Source		
Trunk Highway Bonds	\$25,178,000	
State General Obligation (G.O) Bonds	\$16,672,000	
Regional Transit Capital Bonds	\$4,003,000	
General Fund	\$3,500,000 <sup>1</sup>	
Trunk Highway Cash	\$800,000	
Total State Funds		\$50,153,000

#### Table 2. TRANSIT LEVERAGED FUNDS\*

Funding Source	Funding Amount	Total
Cedar Ave BRT State G.O. Bonds	\$8,135,500	
County Transit Improvement Board	\$6,950,000	
City of Minneapolis Assessments, General	\$3,301,668	
Fund, Bonds		
FTA 5309 Bus Capital	\$1,804,634	
Dakota County Regional Rail Authority	\$1,390,000	
Levy		
Regional Transit Capital Bonds	\$1,064,434	
FTA 5307	\$480,560	
Total		\$23,126,796

\*Leveraged funds refers to project dollars allocated to pre-existing Minnesota Valley Transit Authority and Metro Transit projects that were combined with other projects under the UPA.

Total Federal, State and Local Funds	\$206,579,796

<sup>&</sup>lt;sup>1</sup> The 3.5 million represents the original general fund allocation for UPA. This allocation was reduced by \$300,000 in early 2009.

















#### **CONGESTION REDUCTION STRATEGIES**

#### **Strategies to Enhance Transit Service**

A number of strategies are being used to enhance transit services and facilities on I-35W and Highway 77/Cedar Avenue and in downtown Minneapolis. Improvements include the construction of additional downtown bus lanes, transit advantages and park-and-ride facilities, acquisition of additional transit vehicles and deployment of advanced vehicle technology and real-time customer information systems.

Establishing MnPASS lanes on I-35W as described in the next section will promote an increase in transit ridership. The priced lanes will operate as a transit facility and will significantly improve bus travel time and travel time reliability. Because commuters respond more readily to travel time savings and travel time reliability when choosing travel modes than they do to other factors, it is anticipated that the guarantee of a faster and more reliable trip will result in additional riders in the targeted corridors during peak periods.

One goal of the Twin Cities UPA is to increase transit ridership by combining roadway infrastructure improvements, increased facility and vehicle capacity, and technological innovations to provide a higher quality of bus service than traditional systems. Suburban parkand-ride facilities are an essential component of the region's express bus system. In the Twin Cities, suburban commuters have shown a clear preference for driving to a common location with high frequency bus service to start the express portion of the transit trip, rather than having less frequent buses circulate through neighborhoods. Increasing the number of spaces available for parking will support the expansion of express service serving both downtowns, the University of Minnesota and the Mall of America.

The Metropolitan Council, with Metro Transit, the Minnesota Valley Transit Authority, and other suburban transit providers has identified six locations where new or expanded park-and-ride facilities can be provided (see Map and Project Status, next page) Funds made available through the UPA program are being used to expedite construction of these spaces.

Because of the high transit traffic share to downtown Minneapolis, more than 665 express buses enter downtown Minneapolis during the morning peak period and use the city streets to collect and distribute passengers. Funds made available through the UPA program were used to expand the single transit lanes to two lanes on both Marquette and Second Avenues. This tripled the number of buses per hour and reduced bus travel time through the 16-block downtown area by up to 10 minutes, a substantial time savings.

The addition of transit passenger-carrying capacity is an essential component of the comprehensive approach to pricing and congestion reduction. Most suburban express routes are now at capacity. An increase in passenger seats is required to accommodate the additional demand generated for transit on the priced facilities. UPA transit funding will provide for 27 additional buses to meet the anticipated demand on I-35W.

More details of the UPA's transit component and associated costs are identified in the attached Table 3.

#### Transit Service And Average Daily Traffic In Affected Corridors.

See attached Figure. Transit Service and Average Daily Traffic by Highway Corridor







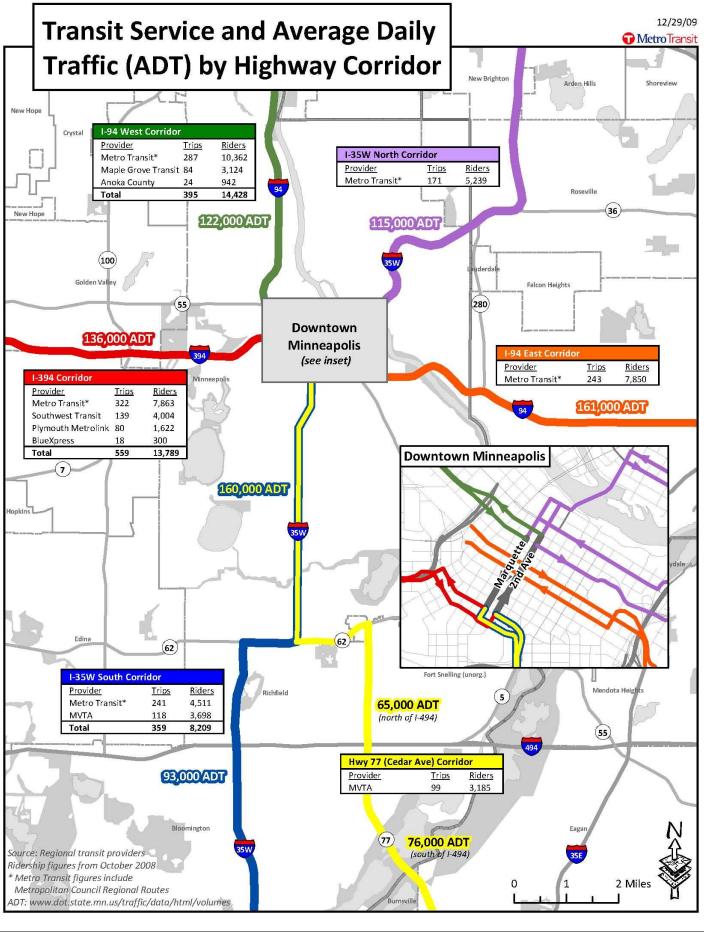




























#### **Strategies to Enhance Congestion Pricing**

Mn/DOT is expanding the successful MnPASS program currently operated on I-394 by converting high occupancy vehicle lanes to high occupancy toll lanes with pricing based on traffic demand. The new I-35W MnPASS expansion will accommodate bus rapid transit in the corridor, allowing buses to achieve speeds of 50 mph or higher. Single occupant vehicles will be allowed to use the lanes during peak periods by paying a toll. Buses and carpoolers will be exempt from paying the toll.

Free-flow speeds for transit, carpoolers, and MnPASS users will be maintained by using the dynamic pricing approach currently used on the I-394 MnPASS high occupancy toll lanes. The pricing and lane restrictions will occur at pre-defined peak periods. To manage this time-of-day restriction, Mn/DOT will use dynamic lane control technology to provide advanced, real-time information about priced lane availability, toll rate, applicable speed and other traffic and safety management features. Lane control technology will allow traffic managers to close lanes during incidents or planned maintenance/construction work, thereby enhancing safety and improving response time for emergency vehicles.

In 2005, the Twin Cities opened its first priced lane, the I-394 MnPASS high occupancy toll lanes, using dynamic pricing and innovative enforcement technology. The high occupancy toll lanes now carry a third more trips during peak periods, while maintaining 50 to 60 mph speed limits for transit, carpoolers and MnPASS users. The rate of violations has been cut by a factor of three. Mn/DOT intends to replicate the success of the I-394 MnPASS project on the region's only remaining HOV lanes located on I-35W.

The hours of operation on the I-35W MnPASS lanes will match peak traffic times. South of I-494 the MnPASS lane will be tolled northbound in the morning peak period and southbound in the afternoon peak period. North of I-494 the MnPASS lanes will be tolled in both directions during the peak periods. Toll pricing on I-35W will match the I-394 MnPASS pricing system. Minimum price will be 25 cents per segment with the maximum price being \$8 for using the entire corridor. Prices are adjusted to traffic conditions and demand in the MnPASS lanes.

An effective enforcement program is essential to the success of the MnPASS lanes on I-35W. Through the presence of additional law enforcement officials in the corridor and read/write transponder technology, violations have been reduced significantly on the I-394 MnPASS lanes. Agreements are being established with the Minnesota State Patrol to provide added enforcement on both the high occupancy toll lane sections and the priced shoulder lanes section on I-35W. As provided by law, revenue collected from the toll operations will go first to operating and administering the fee collection system within the corridor. Excess revenue will be used for transit and highway operations and investments within the corridor.

#### **Technology**

Incorporation of technology is integral to each of the UPA congestion reduction components. The type and application of technology deployed is, to some degree, unique for each strategy and is described in detail within the previous sections on road pricing, transit and telecommuting. However, some of the more notable innovative technology components are summarized below.

Congestion Pricing/Tolling technologies: Dynamic tolling; read/write transponders; mobile enforcement readers; lane control technology; dynamic message signs.

Transit technologies: Metro Transit's NexTrip, a tool that provides real-time bus arrival and departure information at transit stations and kiosks; auto-to-transit real-time travel time

















comparisons sigs; real-time park-and-ride space availability signs; traffic management and bus priority systems, which include cameras, dynamic signs, signal priority and communications. In addition, technology using global positioning systems will be used for lane guidance on buses.

Telecommuting technologies: Telecommuting, or telework, relies strongly on communications and computing technology. As employers and employees enter into a variety of telecommuting initiatives sponsored by the state, each will be responsible for the acquisition, training and use of technology.

#### **Strategies to Enhance Telecommuting**

The telecommuting component of UPA is designed to promote increased use of telecommuting and flexible work scheduling, with the ultimate goal of reducing peak period commuting and shifting some commuting travel to off-peak hours. Telecommuting can eliminate some peak period commuting travel by allowing commuters to work from home via a computer and electronic link to the office on predetermined (often regularly scheduled) workdays, or in some cases, on a full-time basis. Flexible work schedules allow employees to shift their commute trips from the peak period to less congested hours. The most promising means to achieve these objectives is to secure agreements from major employers in the Twin Cities to establish or expand telecommuting programs, and to offer flexible work schedules to the maximum number of their employees.

The goal of the Twin Cities UPA telecommuting strategy is to recruit partners from the local employer pool to help increase the number of teleworkers. The Twin Cities metropolitan area is home to 20 Fortune 500 companies and 33 Fortune 1,000 companies. This creates an opportunity to partner with a variety of major employers and public agencies. The UPA Telecommuting component includes efforts by CultureRx, a consulting firm specializing in increasing employee engagement and productivity in the workplace,

Transportation Management Organizations, Mn/DOT and various other consultants. While Mn/DOT will be funding a number of these efforts directly, the University of Minnesota, through staff at the Hubert H. Humphrey Institute State and Local Policy Program, is leading the telecommuting initiative. The University is responsible for providing necessary technical information to Mn/DOT and other parties. The University is also coordinating and managing efforts to ensure contracts are properly executed and take place on time, data is shared and the project is fully evaluated and documented. The University will study the qualitative and quantitative data on telework experiences for intensive study on travel behavior, congestion and other telework impacts on transportation. Mn/DOT and the University have entered into an agreement to provide these services.

#### **Outreach and Communication**

UPA partners coordinated the development and implementation of outreach and communication strategies to ensure accurate, up to date information to the various publics affected by the construction of project elements.

As projects were constructed in 2009, partners implemented extensive outreach efforts for public policymakers, transportation leaders and business partners. Public open houses, workshops and presentations provided these audiences with face-to-face contact with project partners. UPA partners conducted media relations efforts and launch events as various project elements opened that resulted in newspaper articles and radio and television reports. These communication efforts

















will continue in 2010 and include construction updates as needed to alert motorists of the short term impact of construction and the new transportation benefits available upon completion of the project.

More information about the UPA is available at www.dot.state.mn.us/upa/.

#### **Early Results**

The northbound Highway 77/Cedar Avenue to westbound Highway 62 transit advantage, opened in November 2008, has provided a 90 second per bus trip travel time savings during normal weather and traffic conditions.

The Kenrick Avenue park-and-ride in Lakeville opened on September 28, 2009, with 150 customers. By mid-December, average daily usage had grown to 225 customers requiring the addition of one more morning and one more afternoon bus trip to be added in mid-January.

More than 3,881 MnPASS accounts have been opened on I-35W since the MnPASS Express Lanes opened September 30, 2009.

There are a total of 14,549 active accounts and 17,918 transponders currently being used on the two express lanes on I-394 and I-35W. There were 82,474 total trips recorded with tolls charged amounting to \$67,739 on I-35W MnPASS between Sept. 30 and Dec. 31, 2009.

## Recommended Legislative Action Necessary for the Successful Implementation and Operation of the UPA

Below is a list of requested legislative actions that would aid the lead implementing agencies in ensuring long-term success with the Urban Partnership Agreement program elements.

- 1. Allow ownership by the City of Minneapolis of the Marquette and Second Avenues custom bus shelters.
- 2. Allow transit facilities, such as park-and-ride parking ramps, to be exempt from the pre-design requirement under Minnesota Statute 16B.335.

Below is a list of requested legislative actions from the 2009 Annual UPA Legislative Report, and their status.

- Allow ownership by Minnesota Valley Transit Authority of the new Apple Valley Transit Station.
   Status: Resolved with the passage of new legislation.
- 2. Allow up to \$1,300,000 in traffic mitigation measures and public infrastructure assessment for the new County Road C park-and-ride, jointly provided by the Metropolitan Council and the city of Roseville, to be owned by the City of Roseville.

Status: Resolved without legislative action by shifting federal and state funds within the project to cover these expenses with 100 percent federal funds.

 Allow up to \$225,000 in traffic mitigation measures for the new Kenrick Avenue park-and-ride, jointly provided by the Metropolitan Council, city of Lakeville and Dakota County, to be owned by the city of Lakeville or Dakota County.

















Status: Resolved without legislative action by shifting federal and state funds within the project to cover these expenses with 100 percent federal funds.

The Minnesota Legislature passed a law (Minnesota Session Law 2008, Chapter 306, Sec. 6) requiring the commissioner of transportation, in conjunction with the Metropolitan Council, to report on the status of the state's participation in the urban partnership agreement (UPA). This law requires that the report:

- (1) present the elements of congestion reduction strategies to be implemented under the urban partnership agreement;
- (2) summarize average daily traffic and congestion levels on affected roadways;
- (3) summarize transit usage in affected corridors;
- (4) identify the costs of participation and the sources of funding secured or to be secured;
- (5) include information on revenues and expenditures under the urban partnership agreement;
- (6) summarize any user fees collected on I-35W high-occupancy vehicle and dynamic shoulder lanes; and
- (7) recommend any further legislative action necessary for the successful implementation and operation of the urban partnership agreement.

This report is in response to that law and cost less than \$5,000 to produce.















