



Smart INVESTMENTSSM

IN TRANSPORTATION FOR MINNESOTA

Transit's Role in Alleviating Congestion: *Background, Policies and Approaches for the Twin Cities Area*

*By Matt Kane and Nick Flanders
February 2011*

Transit service during peak drive times on busy transportation corridors prevents worsening congestion for travelers and gives commuters an important alternative to being stuck behind the wheel in gridlocked traffic. **Transit, in effect, increases the capacity of major metropolitan thoroughfares, and in this way relieves congestion on the highway system.**¹ That's certainly the case for several Twin Cities expressways during the peak travel hour. By way of example, information from the Metropolitan Council shows that transit carried approximately 4,000 commuters down I-35W at Lake St. in Minneapolis during the morning peak travel hour in 2006.² With the typical highway lane able to carry about 2,000 vehicles an hour, **buses in 2006 were carrying what otherwise would have been two more full lanes of traffic down I-35W and into downtown Minneapolis**, assuming that those transit riders would otherwise have been driving alone to work.³ And since 2006, transit ridership has increased.⁴

The theoretical link between transit and congestion is a simple one: Transit carries more travelers per vehicle, so the total number of vehicles needed to carry a given number of travelers on a road at a given time goes down. This reduces the strain on the road's capacity, meaning less congestion.⁵

For transit to affect congestion, a number of other important factors must come into play:

- **Transit routes meant to reduce congestion must run along transportation corridors that are already heavily traveled**, especially during rush hour.
- **In order to reduce congestion, transit must attract sufficient ridership from individuals who have the option of traveling by car**, rather than transit-dependent travelers who, lacking transit service, would likely not be driving on the roadway. Travelers who use cars are more likely to choose transit if the transit trip is faster than a car trip on the congested route, if the transit ride saves them money by eliminating the need to pay for parking, if transit is easy to use, and if transit offers the traveler a valuable amenity that car travel does not, such as the opportunity to read or do work while commuting.⁶

1 Federal Highway Administration, "4.1 The Toolbox for Congestion Relief: What Can We Do About Traffic Congestion?" in *Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation*, viewed Dec. 17, 2010, available at http://ops.fhwa.dot.gov/congestion_report/chapter4.htm.

2 Metropolitan Council, *2030 Transportation Policy Plan*, p. 96.

3 The Victoria Transportation Policy Institute estimates that "a typical highway lane can carry up to 1,800-2,300 vehicles per hour." For more, see the Institute's webpage on "Transit Evaluation: Determining the Value of Public Transit Service" at http://www.vtpi.org/tdm/tdm62.htm#_Toc135020082.

4 Metropolitan Council, *Twin Cities Transit System 2009 Performance Evaluation*, March 2010, p. 44.

5 Metropolitan Council, *Twin Cities Transit System 2007 Performance Evaluation*, February 2008, p. 81

6 Todd Litman, *Smart Transportation Investments II: Reevaluating the Role of Public Transit for Improving Urban Transportation*, Victoria Transport Policy Institute, September 10, 2007, pp. II, 3 and 5.



- Transit that carries commuters to and from work on busy thoroughfares can have a positive impact on congestion, but **some congestion is caused by travelers making non-reoccurring trips for errands, and these travelers are less likely to choose transit.**⁷

Interestingly, the congestion benefits of transit are greatest in the long term, while the benefits from highway expansion are greatest in the short term. Why? Because added highway capacity provides immediate congestion relief on a route, but that relief quickly fades as more people use the improved route and it clogs with congestion again. (This is known as the “iron law of congestion.”) By contrast, transit offers a relief valve that travelers can use as increased traffic on the roadway makes congestion severe. In fact, the congestion benefits of transit are realized only when traffic becomes bad enough to make transit an attractive alternative to driving for those riders who can choose to drive.⁸ Just as with roadway expansion, the capacity that’s freed up by transit users will fill again because reduced congestion will make the route attractive to drivers who previously had avoided it. **But as congestion rises, additional travelers will switch over to transit and help mitigate the problem, assuming there are enough transit vehicles to accommodate those travelers.**

Traffic dynamics work in ways that mean **even if transit carries just a small share of travelers during peak drive times it can have a significant and positive impact on traffic flow.** Only a relatively small number of cars needs to join traffic for a crowded-but-flowing lane to become a clogged one. The Victoria Transportation Institute estimates that “reducing congested roadway traffic volumes 5% ... reduces delays 10-30%.”⁹ The Census Bureau estimates that 5.5 percent of the workers in the developed region of the Twin Cities area ride transit to their jobs.¹⁰

Any discussion about transit and congestion needs to recognize two important caveats. First, establishing or expanding transit service can be expensive. Policymakers must weigh the potential traffic flow benefits from transit against the costs. And as with roadways, they must determine which transit investments will have the greatest positive traffic impacts on the overall transportation system – plus yield other important benefits – at the most reasonable cost.

Second, affordable mobility, not congestion relief, is “the most fundamental reason for offering transit service,” according to the U.S. Department of Transportation’s Federal Transit Administration.¹¹ Much of the Twin Cities transit system – with its 27 light rail train cars, its 18 commuter rail cars, its 425 dial-a-ride buses, and its 1,264 buses running on 218 regular routes – has a bigger impact on access and mobility than on congestion. Interest in using transit to alleviate congestion should be pursued in ways that complement the overall transit system and its ability to move low- and moderate-income people to jobs and other important destinations. Transit offers an affordable alternative to what AAA estimates, for 2009, was an annual cost of \$8,100 on average for owning and operating a newer model car.¹²

The following list presents Growth & Justice ideas for transit policies and approaches to mitigate traffic congestion. For a more detailed look at congestion and a broader range of public policies and approaches, download the Growth & Justice report or the issue brief on *Shifting Gears to Ease Congestion: Improving Travel and Travel Choices in the Twin Cities Area*, available at http://growthandjustice.org/Projects_Transportation_Research.html.

7 James V. DeLong, *Myths of Light Rail Transit – Reason Foundation: Policy Study No. 244*, September 1, 1998, p. 10, available at: <http://reason.org/files/760155cae7ee4c80205854259f5c669a.pdf>.

8 Litman, *Evaluating Public Transit Benefits and Costs*, pp. 31 and 89; and Mohsin J. Sarker, Akinori Morimoto, Hiroataka Koike, and Akio Ono, “Impact of transportation infrastructure development on modal choice,” *Journal of Urban Planning & Development*, June 2002, p. 61.

9 The Victoria Transportation Policy Institute, “Transit Evaluation: Determining the Value of Public Transit Service,” viewed December 17, 2010, available at http://www.vtpi.org/tm/tm62.htm#_Toc135020082.

10 Census Bureau, *American Community Survey*, 2005-09.

11 Federal Transit Administration, *Public Transit in the United States*, June 2009, website viewed December 2010, available at http://www.fta.dot.gov/publications/reports/other_reports/publications_134.html.

12 AAA, *Your Driving Costs: 2009 Edition*, AAA Association Communication, 2009, p. 7. Estimate uses data on top-selling 2008 models and assumes gasoline prices at \$2.30 per gallon, car loans at 6 percent interest, and annual mileage of 15,000.



Potential Policies and Approaches for Transit

- **Make investments and pursue strategies that give transit a travel-time advantage in heavy traffic and consequently make it an attractive choice for commuters.** Already, Twin Cities area expressways have almost 300 miles of shoulders that buses are allowed to drive on – albeit at a maximum speed of just 35 miles per hour – in order to bypass traffic congestion and speed up the trip. The most recent Met Council transportation policy plan puts a priority on converting some of these bus-only shoulders to full-fledged MnPASS lanes for regular use by transit vehicles, carpools and vanpools, as well as drive-alone commuters willing to pay a toll.¹³ MnPASS lane conversions should be matched with increased transit service on those routes in order to boost the people-moving capacity. Other transit-advantage approaches include bus-only lanes on city streets; traffic signal controls that go green for buses and help drivers stay on schedule during congested times; specified transitways that create travel preferences for transit or reserve travel space for transit (e.g., the rail tracks for the Hiawatha light rail line); and expanded express service during the morning and evening commutes – albeit service that costs more to operate because express buses run mostly empty when they reverse the commute to return to pick-up points on these routes.
- **Use other strategies, too, to attract new transit riders who would otherwise drive on their own.** In addition to improving the speed and reliability of the trip through transit advantages, transit agencies can make bus and rail travel more attractive to these riders-by-choice through better transit information, stepped-up marketing efforts, and increased comfort and convenience for the ride.¹⁴ Such improvements, of course, require more funding for transit. Transit agencies also can attract new riders by working with employers. Already Metro Transit offers passes to employers at a price discount. And the State of Minnesota allows a corporate income tax credit to businesses that purchase transit passes for employees or discount their price.
- **Accelerate the Metropolitan Council’s plans for increased transit service, infrastructure and passenger loads in order to double ridership by 2020 instead of the current target year of 2030.** In 2004, the Metropolitan Council set out its goal of doubling the number of transit rides from about 70 million to 145-150 million by 2030. Transit rides in the region peaked at 94.8 million in 2008 before sliding back to 88.8 million in 2009 as the economy soured. The Met Council’s transportation policy plan notes that the regional goal for increased ridership “cannot be met without both the development and operation of new transitways and the expansion of the bus system.”¹⁵ The Met Council has laid out its long-term plans for a regional network of transitways¹⁶ that “will allow travel that avoids congested lanes, connects regional employment centers, improves the reliability of riders’ trips and boosts the potential for transit-oriented development.”¹⁷ Success of the Hiawatha light rail line (LRT) has demonstrated the ability of reliable, high-quality transitways to attract riders: The route accounted for more than 10 percent of all transit rides in the region in 2009.¹⁸ And research from the University of Minnesota’s Center for Transportation Studies shows, too, that the Hiawatha LRT has increased access to low-wage jobs and boosted

13 Metropolitan Council, *2030 Transportation Policy Plan*, p. 53.

14 Frank Gallivan and Michael Grant, *Current Practices in Greenhouse Gas Emissions from Transit: A Synthesis of Transit Practice* (TCRP Synthesis 84), Transportation Research Board of the National Academies, 2010, p. 2, available at http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_syn_84.pdf.

15 Metropolitan Council, *2030 Transportation Policy Plan*, p. 36.

16 For a Met Council map of existing and planned regional transitways in the Twin Cities area, go to <http://www.metrocouncil.org/planning/transportation/transitways/2030Transitways.pdf>.

17 Metropolitan Council, *2030 Transportation Policy Plan*, p. 4.

18 Metropolitan Council, “Twin Cities regional transit ridership dropped in 2009,” March 2010, available at <http://www2.metrocouncil.org/newsletter/transit2010/RidershipMar10.htm>.



demand and values for nearby commercial, industrial and residential property.¹⁹ Work has begun on the Central Corridor LRT, and plans for the Southwest LRT are underway. Here too, however, funding is an issue. The Met Council should tap into flexible federal highway funds that can be used for transit projects based on local planning priorities.

- **Secure increased and stable funding for transit to allow for accelerated service expansion and other initiatives that boost ridership.** Minnesota’s transit agencies – especially Metro Transit – need dollars if they are to institute new transit initiatives, invest in infrastructure, build out regional transitways and otherwise improve service and increase rides. Transit funding got a boost in 2006 when Minnesota voters passed a constitutional amendment dedicating by 2012 no less than 40 percent of the state’s motor vehicle sales tax to transit, and again in 2008 when the Minnesota legislature passed a transportation package that allows for local sales tax levies for spending on transitways in the Twin Cities. But lower-than-expected motor vehicle sales tax dollars and fare collections, plus cuts to state appropriations from the general fund, have made even existing transit service levels difficult to sustain. And in fact funding issues in 2002, 2003 and 2005 have led to a 10-percent reduction in bus service.²⁰ Transit advocates hope to win legislative support for an increased and stable transit revenue stream for the future.
- **Encourage greater concentrations of jobs in existing employment centers as a way to increase the viability of transit for work trips by a greater share of Twin Cities area commuters.** Transit is more efficient, cost-effective and popular when a metro region has areas of compact development with concentrations of important destinations, especially jobs. By way of example, downtown Minneapolis has the state’s largest concentration of jobs (140,000), and about 40 percent of the commuters to downtown Minneapolis take transit to work there.²¹
- **Pursue parking options and strategies to boost transit use by commuters.** Parking matters both at the workplace destination and – for commuters who live in low-density suburbs – at the departure point close to home. Not surprisingly, commuters who have to pay high out-of-pocket fees to park their cars near work are more likely to use transit rather than drive. In the Twin Cities, parking fees are significant only in four locations – downtown Minneapolis, downtown St. Paul, the University of Minnesota and the airport. The Met Council’s transportation policy plan calls upon local governments to encourage unbundling of parking from building leases as a way to make the costs of parking in congested areas more transparent. And in locations outside of compact urban areas, park-and-ride facilities at transit stations can create the density of riders needed to allow for efficient transit service to work.²² The Met Council hopes to expand the region’s park-and-ride system, which already includes 111 sites with about 26,000 spaces.

This issue brief on *Transit’s Role in Alleviating Congestion* is excerpted from the Growth & Justice report on *Shifting Gears to Ease Congestion: Improving Travel and Travel Choices in the Twin Cities Area*, available at <http://www.growthandjustice.org/congestion>.

19 See the webpage for the Transitway Impacts Research Program of the University of Minnesota’s Center for Transportation Studies at <http://www.cts.umn.edu/Research/Featured/Transitways/tirpresearch/index.html>. The February 2010 policy brief on *How Light-Rail Transit Improves Job Access for Low-Wage Workers* is downloadable at <http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1336>, the February 2009 policy brief on *The Hiawatha Line: Impacts on Land Use and Residential Housing Value* is downloadable at <http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1334>, and the March 2010 policy brief on *Impacts of the Hiawatha Light-Rail Line on Commercial & Industrial Property Values in Minneapolis* is downloadable at <http://www.cts.umn.edu/Research/Featured/Transitways/documents/property.pdf>.

20 Metropolitan Council, *2030 Transportation Policy Plan*, p. 97.

21 Transit for Livable Communities, the Minnesota Center for Environmental Advocacy and the Surface Transportation Policy Partnership, *Transportation Performance in the Twin Cities Region, Transit for Livable Communities*, August 1, 2008, p. 16, available at <http://www.tlcmnnesota.org/pdf/Transportation%20Performance%20Report%202009%20FINAL.pdf> (citing a 2007 presentation by the Metropolitan Council’s Arlene McCarthy and a 2000 Metropolitan Council report); and Brian Lamb, general manager of Metro Transit, quoted in the Transit for Livable Communities newsletter *Let’s Go*, “Interview with Brian Lamb,” Summer 2010, p. 7, available at http://www.tlcmnnesota.org/pdf/TLCSpringSummerNews_FINAL.pdf.

22 Metropolitan Council, *2030 Transportation Policy Plan*, p. 55.