Smart INVESTMENTS[SM] IN TRANSPORTATION FOR MINNESOTA

Driving Down Minnesota's Greenhouse Gas Emissions
Issues and Ideas for Reducing Vehicle Miles Traveled

By Matt Kane and Nick Flanders
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The cars and light-duty trucks we drive make travel fast and convenient, but the greenhouse gases (GHG) that these vehicles emit contribute greatly to the broadest environmental challenge of our time: climate change.

Minnesota in 2007 enacted the Next Generation Energy Initiative, setting in place state goals for a reduction in GHG emissions of 30 percent from 2005 to 2025 and a reduction of 80 percent from 2005 to 2050. With the transportation sector accounting for one-fourth of all greenhouse gas emissions in Minnesota, strategies to reduce vehicle-related emissions will be critical to achieving those goals.

State and local governments can have a positive impact on transportation-related GHG emissions through policies that reduce the number of vehicle miles traveled (VMT) on Minnesota's roadways. Two other approaches — better fuel efficiency and cleaner fuels — also are important but more strongly influenced by federal policy, and the potential gains from these two strategies will be undermined unless we reverse our historical pattern of more and more roadway travel.

Policy makers hoping to address VMT challenges must be aware of four key findings that emerge from our research:

1. **We drive a lot.** Minnesota drivers travel more miles than average compared to the nation as a whole and even to our neighboring states of Iowa and Wisconsin.
2. **Land-use and transit strategies should be pursued together.** While Minnesota can modestly reduce its greenhouse gas emissions through increased transit service alone or through changes in land use patterns alone, bigger, significant impacts come from investments, policies and choices that link transit and land-use and encourage transit-oriented development.
3. **Potential environmental gains from land use changes and transit will depend on increased density.** Because these changes take time and investment, it's smart to start now and focus on areas with existing concentrations of employment and housing – areas that already boast significant development.
4. **Increased density may carry a price.** Concentrations of employment may make congestion worse on some streets and thoroughfares connecting to those areas. Roadway pricing initiatives, such as the Mn-PASS lanes on I-394 and I-35W, can mitigate this traffic congestion, as can transit.

As part of the Growth & Justice initiative on *Smart Investments*[SM] *in Transportation for Minnesota*, this report explores three approaches to reducing Minnesota's vehicle miles traveled: land use and transit-oriented development, transit service, and pricing strategies.

Land Use and Transit-Oriented Development

To drive fewer miles, Minnesotans will need to change how we use land and how we structure our communities. Shorter and fewer car trips will require denser development and a greater mix of uses within those developed areas. Changes in land use – coupled with and driven in part by expanded transit service for the Twin Cities area in particular – hold promise for reduced environmental impacts from travel.

Key Points

- Efficient and transit-oriented land use can reduce the number and length of car trips through 1) more compact development; 2) a mix of uses such as office, retail and housing; 3) local streets that connect with one another; and 4) other transportation infrastructure improvements that boost travel efficiency and encourage walking, biking and transit use.
- Compact development reduces vehicle miles traveled and thus greenhouse gas emissions from the transportation sector. Gains from land use changes and transit will depend upon increased concentrations of jobs and housing in already-developed areas.
- While compact development reduces car trips and their resulting pollution, the full benefits are realized only slowly because existing residential and commercial structures will shape travel patterns for years to come. Consequently it is important to implement policies that encourage compact development sooner rather than later.
- Transit-oriented development boosts the environmental benefits of compact areas through land-use patterns that make transit a viable alternative to car trips.
- Local zoning regulations often are major barriers to the land-use changes and compact development that could curb driving and reduce greenhouse gas emissions – meaning that smart growth development benefits from less, not more, local zoning rules in many cases.

Potential Policies and Approaches

- Continue – and even strengthen – the strong focus for highway spending on the maintenance and improvement of existing roads. Emphasize travel improvements on routes serving compact, higher-density areas, including downtowns, town centers, regional centers and transit corridors.
- Foster increased population and employment densities in already developed areas and along transportation corridors.
- For a range of state programs, distribute funding to reward local planning, zoning and investment approaches aimed at increasing compact development and reducing vehicle miles traveled.
- Adopt statewide and municipal planning incentives and policies, establish a process for designating priority growth areas within the state, and offer planning tools and technical assistance from the state to communities throughout Greater Minnesota.
- Explore ways that the State of Minnesota and its metropolitan regions could use fees or incentives to limit the carbon impact of new development.
- Advance, fund and build upon existing state programs and initiatives that promote sensible land use and curb the need to drive, including Minnesota's 2010 Complete Streets law, state brownfields programs, the Livable Communities Demonstration Account, and the Metropolitan Livable Communities Program Tax Base Revitalization Account.
- Make transit investments – especially in the Twin Cities area – that can trigger transit-oriented, compact development and in this way reduce car use.

Transit

Transit use — especially when passengers riding transit would otherwise drive cars — can reduce emissions because, as a rule, transit vehicles in urban areas churn out fewer emissions per passenger mile than automobiles. A combination of increased transit use and smart growth land-use patterns will achieve greater reductions in GHG emissions than either transit initiatives or land-use changes on their own.

Key Points

- Public transit can cut transportation-related pollution in three important ways: 1) decrease the number of vehicle miles traveled in personal vehicles; 2) reduce traffic congestion, which cuts the amount of fuel burned by idling cars and trucks; and 3) prompt compact, transit-oriented development that diminishes the need for and length of trips in personal vehicles.
- Increases in transit use alone will produce modest decreases in vehicle miles traveled and greenhouse gas emissions, with the improvements growing somewhat over time.
- Based on emissions per passenger mile, transit vehicles on average generate less greenhouse gas than do personal vehicles, so greater transit use can reduce the adverse environmental impacts of travel.
- The environmental benefits of transit grow when more riders who otherwise would drive cars board the bus or train instead.
- Transit is more efficient, cost-effective and popular when a metro region has areas of compact development with concentrations of important destinations, especially job sites.

Potential Policies and Approaches

- Encourage greater concentrations of employment in Minnesota's cities in order to create hubs or nodes for workplace destinations easily served by transit.
- Make transit more attractive to new riders who would otherwise drive on their own – by improving service speed and reliability, upgrading the comfort of the ride, providing better transit information, stepping up marketing efforts, and encouraging employers to move from parking subsidies toward transit incentives.
- Accelerate the Metropolitan Council's plans for expanded transit service, infrastructure and passenger loads in order to double ridership by 2020 instead of the current target year of 2030.
- Secure increased and stable funding for transit to allow accelerated service expansion and other initiatives that will boost ridership.
- For Greater Minnesota transit outside of the state's larger cities, the best strategy for potential environmental gains likely will be an expansion of those services that can reduce vehicle miles traveled and curb transportation emissions, notably vanpools and intercity bus service on well-traveled routes.

Pricing Strategies

Policies and arrangements that increase the obvious costs of driving can yield corresponding reductions in vehicle miles traveled and in greenhouse gas emissions, as well as other transportation-related pollutants. And roadway pricing initiatives can provide corollary benefits as well. For example, the MnPASS lanes on I-394 and I-35W, can mitigate traffic congestion problems that may plague the thoroughfares leading into and out of concentrated employment centers. Pricing policies have great potential for reducing GHG emissions, but many of them face significant opposition for the very reason they work – because they increase the costs directly tied to operating a car.

Key Points

- Transportation pricing strategies can reduce vehicle miles traveled because they raise the expense of driving – or of driving more – by linking the costs of driving to how much a vehicle travels, by making vehicle users cover a greater share of the costs associated with their driving, or by adding fees to deter driving.
- Individual drivers do not directly pay the full cost of vehicle travel, with some significant costs spread among drivers and non-drivers alike. For example, property taxes cover a larger share of roadway costs statewide than do gas taxes, and the costs of "free" or low-price parking is borne by owners and users of commercial and industrial property.
- Vehicle miles traveled will drop, as a rule, the more that the easy-to-see costs of owning and operating a vehicle correspond with the number of miles that the vehicle logs.
- Pricing initiatives that raise the easy-to-see costs of vehicle travel may have disproportionately adverse impacts on low-income Minnesotans who drive and on Minnesotans in rural areas where driving is often necessary and alternatives are very limited.
- Action at the national or at multi-state regional levels will work better than state-level initiatives for some pricing policies – for example, a very large increase in the gas tax, a broader carbon tax, or a cap-and-trade system to reduce greenhouse gas emissions.

Potential Policies and Approaches

- Charge drivers fees for access to free-flow travel on freeways at crowded, peak times in order to reduce greenhouse gases produced by cars idling in congested traffic.
- Ensure that pricing policies address equity problems for low-income drivers by including measures such as rebates, government payments, tax credits, and improved transit service.
- Encourage or require insurance companies to set rates for auto policies based at least in part on the mileage logged by the insured vehicle.
- Consider raising revenues in the future for state-funded transportation infrastructure through mileage-based user fees paid by Minnesota's drivers.

More information on all these topics, as well as citations for the research, are available in the full Growth & Justice research report, available here.

GROWTH & JUSTICE
2324 University Ave. W., Suite 120A
Saint Paul, MN 55114
Phone: 651-917-6037
info@growthandjustice.org
www.growthandjustice.org