DRIVING BLIND

Minnesota Needs a More Transparent Transportation Policy That Connects Prices to Costs and Benefits to Investments

Report of the Citizens League Transportation Study Committee
January 21, 2005

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Executive Summary

Hidden costs lead to distorted choices

- 70 percent of the public cost of roads is hidden in state aid to local governments, local property taxes, and motor vehicle registration taxes and is not related to travel behavior.
- Market research suggests that if the hidden costs for roads were borne by the users it would send a strong signal to homebuyers, which would affect how developers consider projects.
- We currently lack the funding mechanisms and the public process to make good decisions on what transportation facilities and services are needed and their comparative value in providing access, contributing to economic prosperity, reducing congestion, or improving safety. A much more dynamic approach is required to meet the mission of the transportation system in the future.
- The best way to start finding the answer requires that current costs become more visible to the citizens of Minnesota. In a word, costs must be more **transparent**. "Transparency" is connecting prices to costs and benefits to investments. Transparency is a principle to apply when asking the following question, "Are the beneficiaries of a public investment paying for the benefit they are receiving and are they paying through a mechanism that reveals the cost to them?"

Minnesota is at a crossroads

- We have reached a pivotal point in Minnesota at which we must decide how the entire gamut of transportation-related facilities and services should best serve our efforts for continued economic growth (economic prosperity) and high quality of life (access).
- What funding there is hasn't kept pace with the demand for roads or transit, nor is the money being distributed in a way that addresses the state's most pressing congestion and safety problems. While there is a growing sense of urgency that we need more money for transportation, there is little agreement on how money should be raised and spent.
- For metro area residents, the desire for a more rural lifestyle is reflected in a housing preferences survey performed by the Met Council in 2002.
- If the transportation system continues to provide access to areas further away from regional centers without making transparent the cost of that access, the tendency toward using larger amounts of land that cost less and are further out will increase.
- The regional arterial system and a limited number of minor arterials are growing more slowly than demand, especially to meet the growth in cross-regional trips and trips from the collar counties. This system is under the greatest stress and is most congested.

Transparency must be applied to funding and process

The Citizens League initial recommendations listed below focus mainly on transparent funding. Establishing a transparent governance process for making transportation investments is also necessary and should be considered as a follow-up study. The seven metro counties and the nine "collar" counties must be considered through a unified governance process that is able to make judgments between projects in a transparent way and address access issues along major transportation corridors.

Recommendations – Initial Steps Toward Transparency

1. Tolling: Apply tolling (initially in the form of congestion pricing) as often as possible throughout the arterial highway system whenever there is new capacity or a major reconfiguration/rebuild.

2. Vehicle registration fees based on road impact: Annual vehicle registration fees, auto and truck, should be based upon a weight and horsepower formula which reflects individual vehicle wear and tear impact on roadway surfaces.

3. Dedicated funding should be to all transportation facilities and services: For the necessary flexibility in decision-making, the gas tax and vehicle license fees should not be subject to the current dedication and formula. At the least, any "new" revenues should be dedicated to all transportation services so that government can respond more effectively to the emerging transportation market.

4. Tie funding to land value increases: When the public invests in major transportation projects that spur appreciable increases in land value, the state should capture part of the revenue increases attributable to the investment to fund the improvement in one of two ways:

- State tax increment financing (TIF): the amount of property tax revenue attributable to the public transportation investment.
- At the point of sale of a benefited piece of undeveloped land, the state should tax a portion of the capital gain from that sale to pay for the transportation improvement that provided the benefit.

5. Strategic investments to gauge "bang for the buck": Make small amounts of funding available in public/private partnerships to make strategic investments in pilot projects, to have public discussion, and to test demand.

- Incentives for telecommuting on an organization-wide level.
- Provide equivalent commute incentives to determine what choices employees would make when offered a choice with the cost of their employer-paid parking.
- Tax incentives to groups of employers to coordinate transportation services for their employees.
- Test the opportunities throughout Minnesota for communications technology to replace travel, particularly as travel costs increase.
- Test circulator functions to support suburban job densities that are not well-accessed by traditional transit because of land use that is difficult for walking.

6. TIF on undeveloped land: Where tax increment financing (TIF) is used to subsidize development on previously undeveloped land, the TIF should be required to include costs associated with arterial road development in the area. MnDOT would be required to produce an estimate of the costs of the arterial improvement.

7. Legislative Auditor should establish transparent baseline: Where there remains fundamental disagreement about transportation costs and significant process questions, a "baseline" of the sources and uses of transportation funding and the associated processes should be established by a well-respected and non-partisan source, the Office of the Legislative Auditor.

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What do roads cost and who pays? What does transit cost and who pays? What other options do we have? What do those options cost and who should pay?

What are the impacts of transportation that we can't quantify?

Funding for transportation in Minnesota has stagnated, and what funding there is hasn't kept pace with the demand for roads or transit, nor is the money being distributed in a way that addresses the state's most pressing congestion and safety problems. While there is a growing sense of urgency that we need more money for transportation, there is little agreement on how money should be raised and how it should be spent.

The Citizens League Transportation Study Committee was charged with creating a framework to help establish the 'true cost' of transportation choices. We discovered that arriving at true cost is not simple and may not be possible and that the best way to start finding the answer is to make current costs more visible to the citizens of Minnesota. In a word, costs must be more **transparent**.

Why? Even if all the citizens of Minnesota were transportation economists and even if we could establish the "true costs" of transportation, we might not agree about who should pay for transportation facilities and services. The objective is to make the costs of transportation more visible in the hope that greater understanding of costs among citizens will lead to more informed choices by citizens and policymakers.

One thing, however, will remain the same unless we do something to change it: attempts to answer these questions will continue to be like looking into a dense fog when examining how government at different levels collects revenue on the one side and funds transportation facilities and services on the other. Why? It's because many of the ways that we raise and spend money for transportation in Minnesota hide these costs from citizens, thus distorting their choices.

Hidden costs lead to distorted choices

For the last half century, Minnesota has raised money for transportation in the same basic way: the gas (motor fuels) tax and the vehicle registration fee are collected at the state level and are used to build and maintain the arterial road system and provide state aid to counties and cities for road building and maintenance. Local governments also tap more than $1 billion annually from property tax revenues to pay for local roads.

As a result of our current funding system, more than 70 percent of the public cost of roads is hidden in state aid to local governments, local property taxes, and motor vehicle registration taxes and is not related to travel behavior.[1]

Since the gas tax and vehicle license fees are dedicated in the state constitution to only fund roads, this leads to an ad-hoc approach to fund transit or any other transportation facilities and services out of the state general fund or through bonding, which is usually project-oriented as opposed to systemic in its approach. Much of what state and local government raises to pay for roads has little connection to road use in either the way it is raised or the way it is distributed. While the gas tax has a strong connection to road use in the way it is raised, the portion distributed to counties for example is allocated according to a formula primarily based on road

miles. The result is that the resources are not available to respond to congestion.

And since the gas tax is embedded in the retail price of gasoline, the gas tax also does little to make the cost of roads transparent. At the pump, consumers don't know how much of the price of a tank of gas goes to build or repair roads, so the gas tax doesn't send users a strong price signal about the cost of road use.

While it may be true that more funding is needed, that was not the charge to the Citizens League Transportation Study Committee, rather we have concluded that the work of the Committee can be encapsulated in one word - **transparency**. For a look at what revenue sources would generally be more transparent see Table 1.

Applying transparency to transportation funding and decision-making will increase citizen understanding by sending *price signals* to citizens. Increased citizen understanding will spur the emergence of choices desired by citizens. Understanding the choices that citizens desire will lead policy makers to better decisions. Minnesota has an ample supply of quality transportation professionals to implement those decisions.

TABLE 1: Transparency in Transportation

Less Transparent	More Transparent
Gas Tax w/ Current Constitutional Dedication	Mileage Tax
Sales Taxes	Tolls
Property Taxes	Transportation Utility Fees
Municipal Consent/Local Veto Authority	Unified Governance Process
Current Registration Fee	Fee w/ Weight & HP Component

Minnesota at a crossroads

We have reached a pivotal point in Minnesota at which we must decide how the entire gamut of transportation-related facilities and services should best serve our efforts for continued economic growth (economic prosperity) and high quality of life (access). Access and economic prosperity are the two-fold mission of the transportation system.

Access is the most fundamental mission of transportation. The transportation system must provide broad access to goods and services that have a high public value. These include opportunities for employment, education, health care, food, and other necessities. For these goods and services with high public value, the mission of the transportation system must strive to supply fair and equitable access. The well being of our society is dependent on the ability of all people to have this primary level of access.

Even though primary access is not necessarily assured for all, many Minnesotans have come to expect a secondary level of access that supports a chosen lifestyle. More and more people want access to rural areas and small towns, while still desiring access to urban amenities. The mission of the transportation system in Minnesota, therefore, also must address the management of access to lifestyle choices and cultural amenities as they are reflected in land use and development patterns.

Economic prosperity is the other main goal of the transportation system. To support economic prosperity, the transportation system must provide for efficient and safe movement of goods, services and information to assist in continued growth and the creation of jobs. There is no established method for quantifying the impacts of congestion or safety on the regional or state economy.

What are costs?

The most widely accepted way to look at costs is through the lens of the economist. The most directly applicable work available of this nature is "The Full Cost of Transportation in the Twin Cities," which was published

as part of the University of Minnesota's Transportation and Regional Growth Study in 2000. This study uses an economic definition of the Twin Cities region that encompasses 19 counties (including three in Wisconsin).[2]

For our purposes, there are three basic categories to understand in order to look at costs as defined in economics:

- Governmental costs (costs borne by any level of government) including roads, subsidies for public parking and transit; law enforcement and safety; environmental regulation or protection; and energy security costs.
- Internal costs (costs borne by the person who causes them) including private vehicle costs; fares for transit and taxis; home garages and driveways; free parking lots, driveways, and roads; pain and suffering from crashes; and personal time costs (travel time without congestion, time spent maintaining vehicle, time costs of driver education).
- External costs (costs not borne by the person who causes them) including congestion; crashes; pollution; and petroleum consumption.

For the purposes of public policy, we are most concerned with governmental costs and external costs. Internal costs are those costs that are borne by the person who caused them and are more dependent on the purchasing choices of the individual. For the full list of costs see Appendix A.

What is transparency?

Transparency is a principle to apply when asking the following question about government involvement in providing transportation facilities and services:

"Are the beneficiaries of a public investment paying for the benefit they are receiving and are they paying through a mechanism that reveals the cost to them?"

The principle of transparency certainly has a more broad definition than what we are stating here, but when addressing government spending for the public benefit, we feel that it is the most appropriate focus.

Any mechanism that reveals costs to citizens is what helps define a *price signal*, and therefore has a greater chance of affecting behavior. Paying for transportation costs through general taxes such as property and sales taxes does not have any connection to the use of transportation and does not send significant price signals on the costs of transportation.

Defining transportation and transportation services

"Transportation" is defined as the movement of people, goods, services and information. By this definition, transportation includes communications technology, in particular when it replaces the need to travel. "Transportation services" includes all alternatives to driving a car. It includes "transit," which means anything that turns automobile drivers into riders, walkers or cyclists.

FINDINGS

There is a tension between the two central transportation goals for the state – access and economic prosperity – that must be transformed into a balance that supports both.

Because of a lack of transparency about what the government raises and spends on transportation-related facilities and services, and because of a 50-year-old policy entwined with our constitutional dedication of the gas tax, the only current policy questions that citizens have before them seem to be:

- Do we need more gas taxes to build and maintain roads under the current formula?
- Should we be involved in each piecemeal struggle at the Legislature or in the community to build or not build light rail transit (LRT), bus rapid transit (BRT), commuter rail, or other options such as personal rapid transit (PRT)?
- Will we have an opportunity to change any of this?

Where We Are Now: Factors in Transportation Demand

Land use and transportation are interrelated in a fundamental way. That relationship must be a primary consideration in how true costs are established. *Lifestyle* can be defined as what we want from our land use. Employers make decisions based on land costs and access to an appropriate workforce. The overwhelming choice for manufacturing and retail businesses is for horizontal operations that take large amounts of land for buildings and parking. If the transportation system continues to provide access to areas further away from regional centers without making transparent the cost of that access, the tendency toward using larger amounts of land that cost less and are further out will increase. The allowance of tax increment financing (TIF) for green field economic development at the edge of the region actually subsidizes such choices and exacerbates the trend.

For metro area residents, the desire for a more rural lifestyle is reflected in a housing preferences survey performed by the Met Council in 2002.[3] The survey reveals that in the seven-county metro area:

- 10 percent of residents currently live in rural areas and 20 percent would like to live in rural areas.
- 10 percent of residents currently live in a small city or town and 12 percent would like to live in a small city or town.
- 7 percent currently live in the urban/downtown and 8 percent would like to live in the urban/downtown.
- 73 percent currently live in either older city neighborhoods, older suburbs, or growing suburbs and only 54 percent would like to live in those areas.

The Twin Cities is not only spreading out, but it is thinning out. From 1982 to 1997, the Twin Cities urbanized land three times faster than the rate of population growth. Over that same period, the Twin Cities decreased in density by 22 percent, the second greatest decrease when compared with its peers nationally.[4] Lower density development increases:

- The demand for new schools, new roads, new public facilities and new sewer and water connections.
- The costs of key services such as police, fire and emergency medical.[5]

Road costs have the greatest added cost when development "sprawls." It is estimated that road costs increase by 33 percent over compact development that is contiguous and at higher densities compared to what would be found at the urban edge. Sewer and water are estimated to cost 20 percent more, and schools about 5 percent more.[6]

Wealth – For the last 50 years, Minnesota has performed better than the nation on a number of economic indicators. As a result, Minnesota now ranks 6th in the nation in median household income at $54,480 (2001-2003 average). Minnesota has jumped dramatically since 1989, when we ranked 17th at $30,909 in median household income (a 76 percent increase).[7] This translates to general wealth that manifests itself in the transportation-land use dynamic. In the Greater Metro Area (7-county metro and 13-county ring), this translates to more than one automobile per licensed driver, and more miles and time on the road.[8] We are willing to drive from rural to urban settings, on longer cross-regional suburb to suburb work trips, and for greater and greater distances for a variety of purposes and can afford to do so. Wealth also spurs a vigorous market for land sales, development, and purchase for personal/recreational use. In some cases, the public investment for major transportation infrastructure results in high profits when land is sold for development.

Growth – Minnesota has the highest rate of population growth in the Midwest and is expected to continue relatively dynamic growth. Three-fourths of Minnesota counties are in the middle of a decade of some population growth (66 of 87 counties).[9] Forty-nine counties are expected to add more than 1,000 people between 2000 and 2010. The transportation system is growing in size and the patterns of use are getting more complex. At the same time, use of the system is growing in intensity. There are more congested areas on our arterial roadways, the peaks of congestion are higher, and the period of congestion lasts longer.[10]

User choices are exacerbating this trend. From 1990 to 2000, U.S. Census data shows that the Twin Cities continued to increase in the percentage of those driving alone for work trips and decreased in the percentage of work trips by transit, carpooling and other modes.[11]

The arterial road system and transportation services are not expanding to meet the expected rate and pattern of growth. There are 24 Minnesota counties that had 15,000 people or more in 2000 and are expected to grow by more than 10 percent by 2010. Ten of these counties are linked to the Twin Cities economy in terms of percentage of job destinations (Dakota, Anoka, Scott, Washington, Carver, Sherburne, Wright, Chisago, Rice and Isanti). Fourteen of these counties are not (Olmsted, Stearns, Crow Wing, Cass, Otter Tail, Beltrami, Benton, Douglas, Mille Lacs, Pine, Hubbard, Aitkin, Kanabec and Dodge).

Because they are already densely populated, the two core metro counties do not meet the aforementioned percentage threshold for growth, but Hennepin is expected to add 82,600 more people from 2000 to 2010, more than any other county, but only a 7.4 percent increase overall. Ramsey County is expected to add the sixth-most people over the decade at 28,765, which is a 5.6 percent increase. Four of the collar counties also did not meet the population and growth thresholds: Goodhue, McLeod, Sibley and Le Sueur, yet all are expected to add more than 1,000 people over the decade (see Appendix B).

More Dispersed Workforce – In 1970, more than 45 percent of Twin Cities' households were located in the central cities of Minneapolis and St. Paul. Another 40 percent were located in the developed suburbs and about 11 percent were in the developing suburbs. By 2000, the central cities' share of households had dropped to about 27 percent and had been surpassed by the developing suburbs at about 28 percent of the seven-county total. The developed suburbs remained at about 40 percent. By 2030, the developing suburbs are projected to have 38 percent of the total households, the developed suburbs about 33 percent and the central cities about 22 percent (see Figure 1).

In 1970, more than 55 percent of the jobs were in the central cities and about 38 percent were in the developed suburbs. The developing suburbs had about 7 percent of the region's jobs. By 2000, about 45 percent of the jobs were in the developed suburbs, while the central cities fell to 31 percent of the jobs. The developing suburbs rose to about 23 percent of the jobs. By 2030, it is projected that about 43 percent of the jobs will be in the developed suburbs, 28 percent in the developing suburbs, and 27 percent in the central cities (see Figure 2).

Locations for housing and jobs have spread out more and more over the last three decades, but not in the same way. The greatest household growth has been in the developing suburbs while the greatest job location growth has been in the developed suburbs. These developed suburbs are now significant job destinations for commuters from outside the seven-county area.

The nature of households and the nature of the job market have also changed a great deal since 1970. There are many more households with two working adults now. People also change jobs more frequently than they did in 1970. The net result is that it is more difficult to locate near work when the one worker in the household may have a job located 30-40 miles away from the other. This dynamic also increases cross-regional travel, which adds substantially to congestion on the arterial road system and is expensive and difficult to serve with traditional transit.

Figure 1:
Location of Metro Area Households (%), 1970-2030

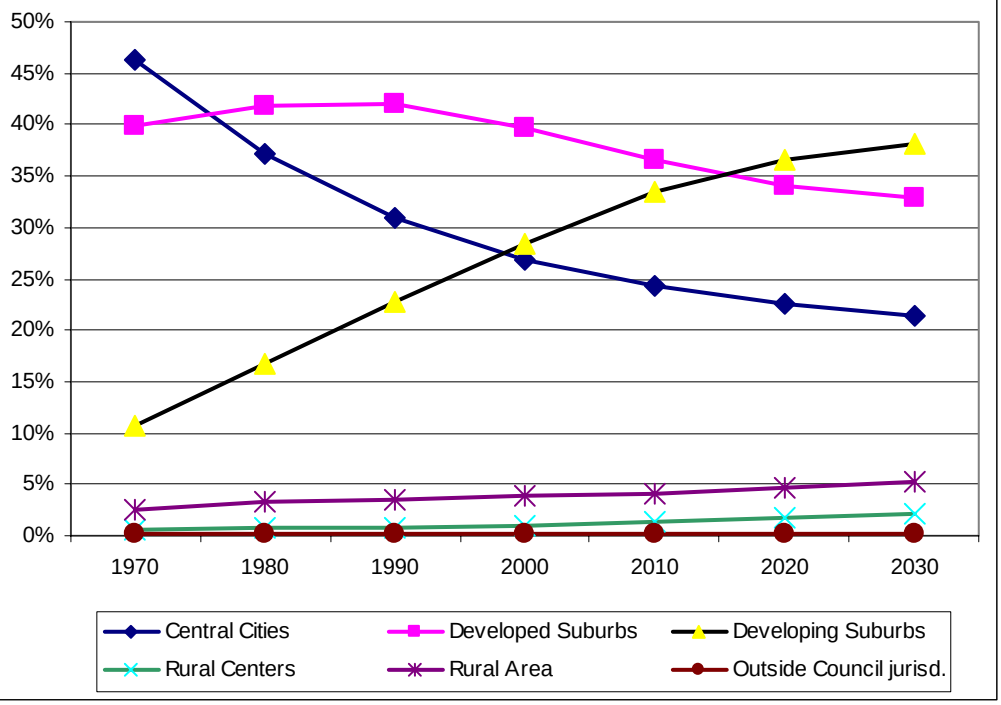
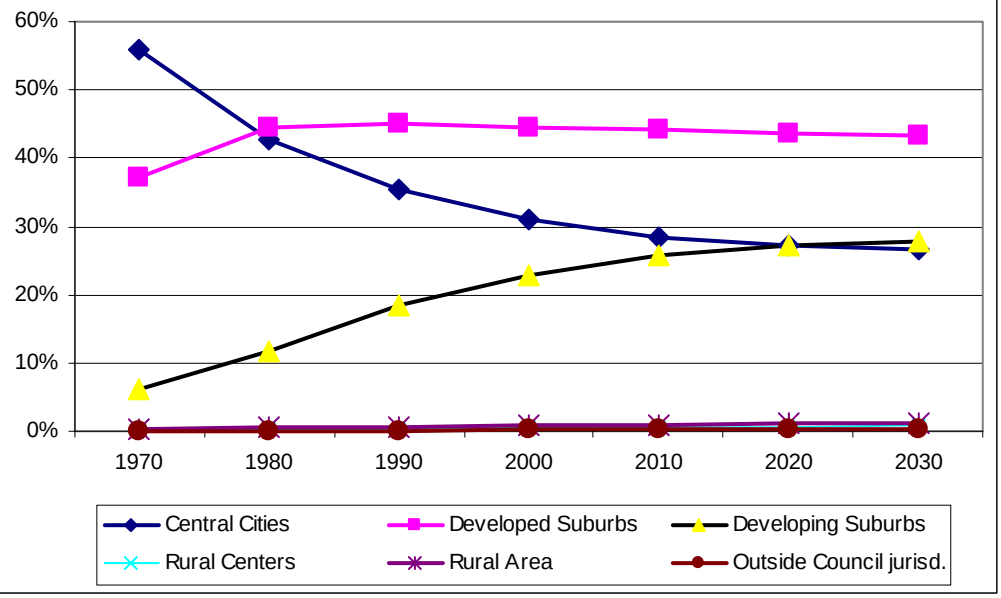


Figure 2:
Location of Metro Area Jobs (%), 1970-2030



Analyzing work trips

An analysis of work trips that begin in the Metro Area show that, as expected, in the two counties (Hennepin and Ramsey) that host the two core cities (Minneapolis and St. Paul), a much higher percentage of work trips begin and end in the same city – 32 percent in Hennepin County and 31 percent in Ramsey County. On the other end of the spectrum, only 16 percent of the work trips in Anoka County begin and end in the same city. Washington County fares a little better at 16.5 percent (see Figure 3).

The next indicator for the transportation system is to see how many work trips from the seven-county area end

up in the core cities of Minneapolis and St. Paul (not just the downtown, but the entire city). Nearly one-half of the work trips that start in Ramsey County end up in one of the core cities (49.8 percent). In Hennepin County, the percent is substantially lower at 36 percent. Carver (9.6 percent) and Scott (12.9 percent) counties send the least number of work trips into Minneapolis and St. Paul (see Figure 4). When we combine these factors, we find that every metro county except Ramsey sends more than one-half of work trips to somewhere other than the same city or one of the core cities.

Almost 70 percent of the trips in Carver County and 64 percent in Scott County are heading somewhere other than Minneapolis, St. Paul, or the city of origin (see Figure 5). Having so many growing suburban job centers make it much more difficult to offer traditional transit service. In one-fourth of metro area cities and towns (48 out of 192), more than 90 percent of work trips left the city of origin in 2000. Most are the smaller cities and towns, but cities such as Andover, Lino Lakes, Champlin, Crystal, Little Canada, Mounds View, Vadnais Heights, and White Bear Township each produce more than 5,000 work trips per day and more than 90 percent leave the city of origin and don't necessarily leave to go to a particular job "center." For metro city detail, see Appendix B.

This is only part of the picture. The seven-county area is an artificial region when it comes to the land use-transportation dynamic around where we live and where we work, shop and recreate. There is a significant amount of commuting into the seven-county area, particularly from some of the 13 "collar" counties.

An analysis of Wright and Sherburne counties shows there may be an even greater diffusion of work trips than in the seven metro counties (see Figure 6). For these counties we checked to see how many trips were going to a non-metro regional center in addition to counting the number of trips that ended in the same city

Figure 3: Metro Area Work Trips
(% destination in same city as origin)

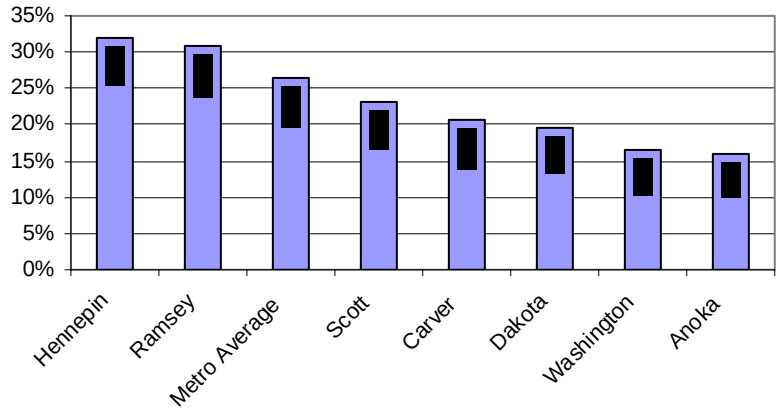


Figure 4: Metro Area Work Trips
(% Destination in Mpls/StP)

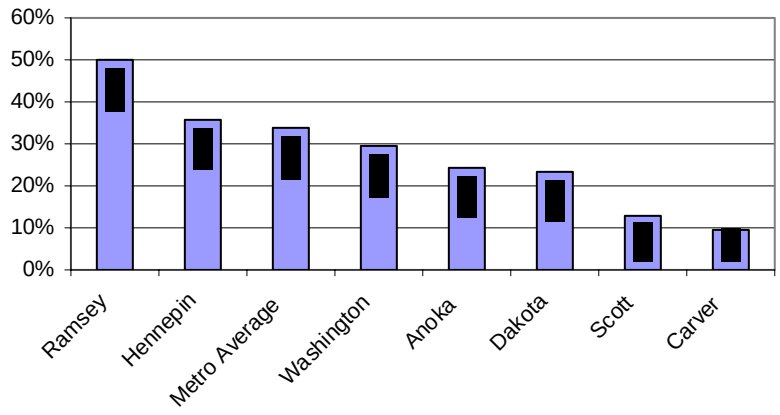
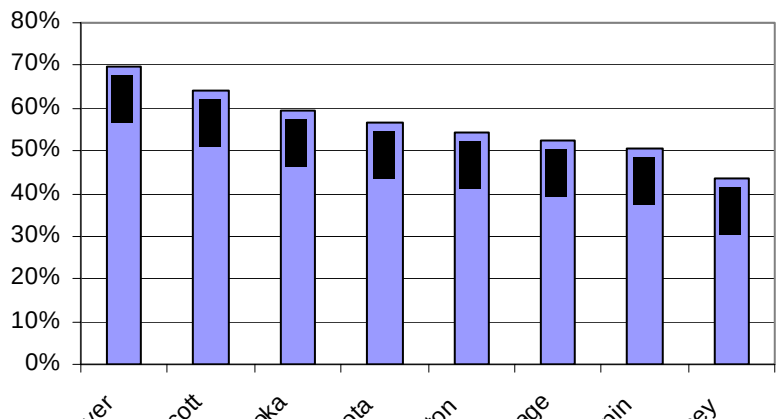


Figure 5: Metro Area Remaining Work Trips
(% not to same city or Mpls/StP)



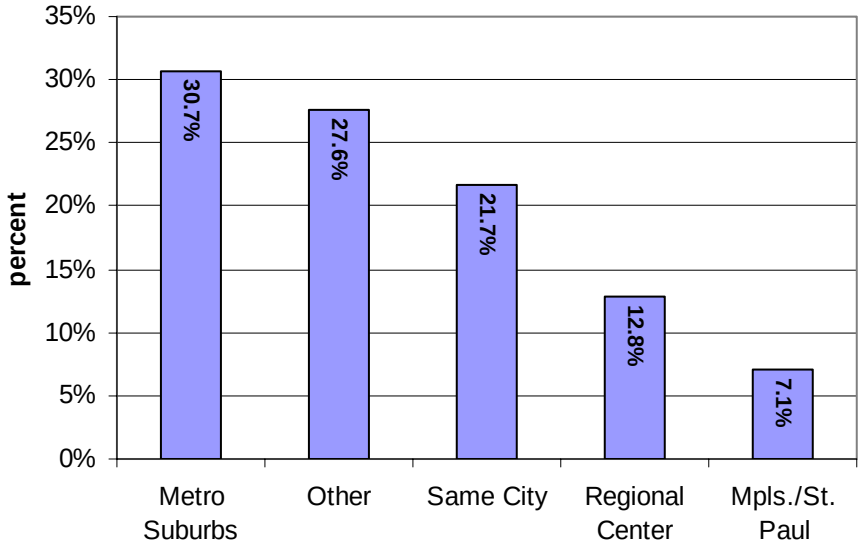
or in Minneapolis or St. Paul. Even by adding an additional regional center more than 58 percent of Sherburne County work trips ended in the suburban metro or somewhere other than:

- The same city (21.7 percent);
- A non-metro regional center (12.8 percent); or
- Minneapolis and St. Paul (7.1 percent).

With the exception of Elk River, the highest growth areas in Sherburne County are mainly townships, which are unlikely to create significant job densities (see Appendix B).

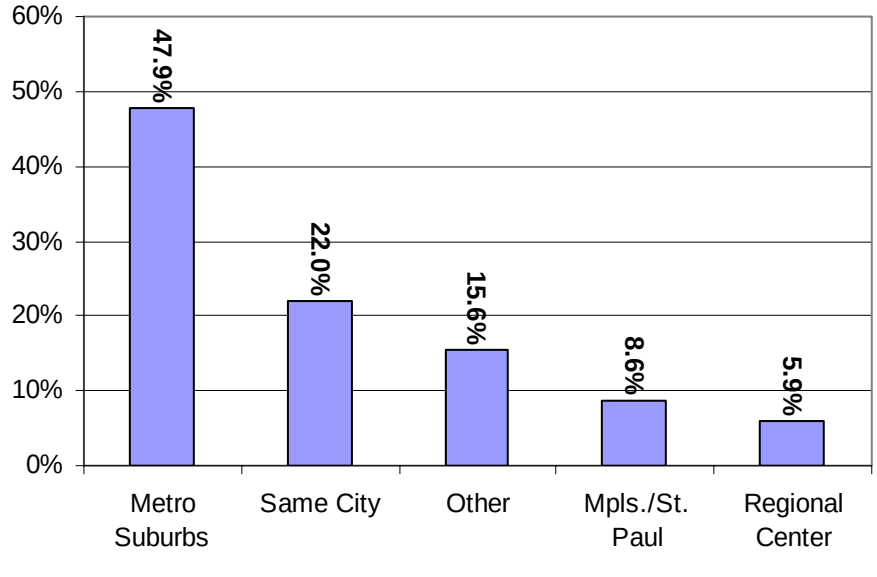
In Wright County, the fastest growth areas tend to be cities, but they have even higher percentages of work trips that are cross-regional metro suburban trips. Of the 10 fastest growing cities in Wright County, 6 of them (Albertville, Delano, Hanover, Montrose, Rockford and St. Michael) send more than 50 percent of work trips into the suburban metro area (see Figure 7).

Figure 6: Sherburne County Work Trip Destinations



Looking at a couple of examples, it seems that cities in the highest growth collar counties (Sherburne, Wrights and Chisago) are even more diffuse in work trip patterns then metro suburban cities. Taking all destinations that represent at least 1 percent of total work trips, we compared Farmington in Dakota County and Lindstrom in Chisago County. For Farmington, more than 16 percent of work trips began and ended in Farmington and a total of 19 total destinations made up 85 percent of all work trips. For Lindstrom, more than 14 percent of work trips began and ended in Lindstrom, but it took a total of 25 destinations to make up a lower percent (80%) of all work trips (see Appendix B).

Figure 7: Wright County Work Trip Destinations
(selected growth areas)



In collar counties that are not growing as fast and have older regional centers, such as Goodhue and Sibley, the diffusion does not appear to be as marked. In other growth counties, there can be big differences. In Beltrami County, for example, 80 percent of the work trips that start in Bemidji end in Bemidji, and much of the county send a significant number of commuters to Bemidji. In Cass County, however, which is experiencing one of the highest percent increases in

housing,[12] the work trips seem much more diffuse, with no real "center."

Increased Congestion – All of the factors listed above increase congestion in the Twin Cities region. The Twin Cities has yet to experience the degree of congestion that many of the largest metro areas in the U.S. have, but our short-term rate of congestion increase has been noted by the Texas Transportation Institute (TTI) as the second highest among our peer cities (metro areas between 1 and 3 million people). That indicator is based on short-term growth (1996-2001) and gives us an opportunity to respond to a worsening situation before it produces greater negative effects (see Appendix C).

The 2000 Census data offers transportation measures of the 25 largest metropolitan areas that put the Twin Cities' regional economy and transportation behavior in perspective. From 1990 to 2000, the Twin Cities had the 10th highest rate of population growth and the 6th highest rate of employment growth, but the average travel time for work trips in the region was only the 18th highest rate of growth—moving the region from 25th, the shortest work trip in 1990 at 21.2 minutes, to 24th in 2000 at 23.7 minutes (see Appendix C).

The Twin Cities was one of 8 regions where driving alone increased and all other modes of transportation to work decreased. Driving alone increased in 20 of the 25 regions. The Twin Cities moved up from 10th in 1990 to 8th in 2000 with driving alone counting for more than 78% of work trips. Although carpooling in the Twin Cities decreased by 11.6 percent, the region moved up from 21st to 18th, because 21 of 25 regions saw reductions in the percent of carpoolers.

In the use of transit for work trips, the Twin Cities dropped from 9th to 11th with a 13.6% decline. In general, the top 10 regions in employment growth either had reductions in driving alone, or had a less substantial increase than the Twin Cities; and had an increase in some other mode for trips to work.

To draw conclusions from these numbers, however, would require a complex analysis that accounts for factors such as immigration, location of new jobs in the region from 1990 to 2000, and investment in the various modes of travel. Minnesota's phenomenal income growth since 1989 has put us right at the top in median household income. This is a major factor in number of vehicles as related to number of jobs, where Minnesota also ranks quite high (low unemployment, higher percentages in the workforce of men and women).

The 7-county metro area built enough roads in the 1970s and the 1980s to serve and in some cases spur growth, but that is not possible to do again. Roads can continue to provide access to a vast majority of citizens, but will not be able to provide the desired mobility. Much of our existing road system cannot be expanded enough to retain mobility without prohibitive cost due to existing land use. It is estimated that to build our way out of congestion with roads by 2020 would require a 70 percent expansion of the existing freeway system (an additional 1,146 lane miles).[13] This theoretical number could not be accomplished, since we don't have the land available where there is the need. Under current conditions, the Met Council plans to add 300 lane miles by 2030 in its regional framework, which is a substantial amount.

Increased Pollution – Air quality is directly impacted by the growing number and length of automobile trips. More air pollution has a health care cost linked with chronic and acute pulmonary and cardiovascular disease and higher rates of asthma. Costs of air pollution and where the costs are created and borne are included in the economic full cost analysis of transportation (see Appendix D). Water and land pollution costs are much more difficult to ascertain and are not calculated for cost in the economic work.

Where We Are Now: Factors in Supply of Transportation

In general, the local street network is keeping up with providing access to parcels of land as they change from agriculture into housing and employment locations. The local collector system is expanding as much of the lane capacity grows in the developing suburbs. These roads seem largely able to keep up with demand.

The regional arterial system and a limited number of minor arterials are growing much slower than demand, especially to meet the growth in cross-regional trips and trips from rural collar counties. This system is under the greatest stress and is most congested. More difficult to ascertain are the access issues when local roads access trunk highways. Who pays when there is growth and how? How do we maintain the efficiency of the arterial system that is already overburdened?

Transportation service options exist and many could be readily expanded, but demand for them has been static or declining. Regular route transit and use of carpools is declining in the face of a greatly dispersed set of trip destinations and increasing purchase and use of automobiles as the preferred option.

The only significant market for fixed guideway transit (LRT and BRT) and regular route bus service continues to be the downtowns where employees pay for parking. Continuation of current land use patterns in developing areas will result in more of the transportation system depending on automobile travel with increasing rates of driving alone to reach a growing diffusion of home, work and retail locations.

The fewer alternatives for transportation services that can be provided in this region in an efficient way, the greater the vulnerability to adverse economic impacts from sharp increases in the price of petroleum as the supply declines (see Appendix E).

CONCLUSIONS

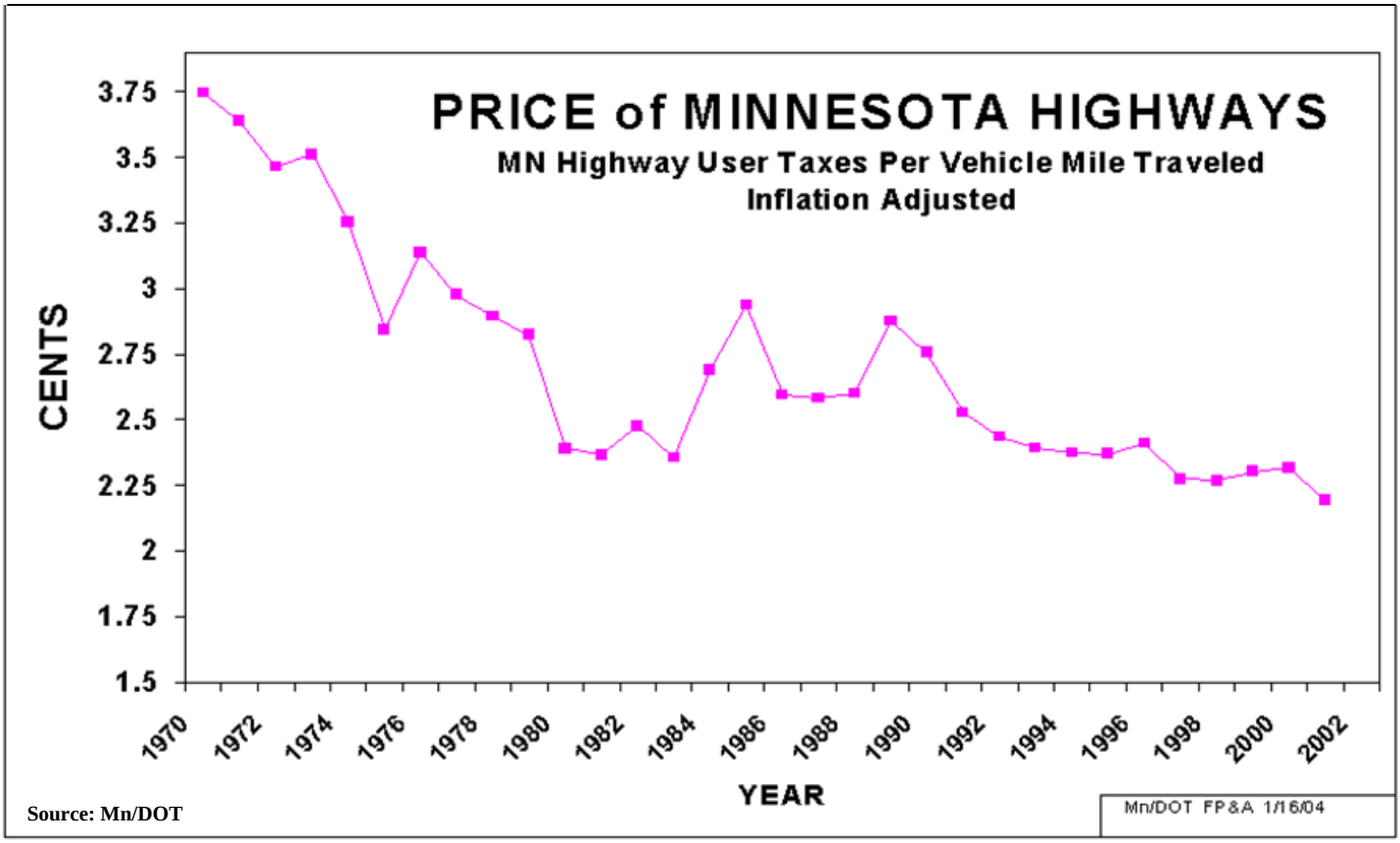
Land use and transportation have a fundamental connection, but costs are hidden

The connection between transportation and land use is fundamental, but the costs imposed on the transportation system (particularly the arterial road network) are largely obscured. Seventy percent of the public cost of roads is hidden in state aid to local governments, local property taxes, and motor vehicle registration taxes and is not related to travel behavior.[14] We pay, but it is not clear, or *transparent,* and does not send a strong *price signal* to the users of the system. Without a clear transportation price signal, the market for land is driven largely by the preference to buy larger, less expensive lots for rural residential housing and horizontal manufacturing and retail that is dependent on truck distribution. Market research suggests that if the hidden costs for roads were borne by the users it would send a strong signal to homebuyers, which would lead developers to abandon projects that added more than $5,000 in annual commuter costs to the homeowner.[15] That is why it is imperative to price the transportation market with the greatest transparency and see how that impacts demand for transportation services.

Minnesota's transportation system is not keeping up with growth

Funding to meet this growth has been declining for several years relative to the cost of providing more roads (see Figure 8). And since the costs are largely hidden from citizens, we have little idea of the level of cost that would spur demand for other transportation services.

Figure 8



Source: Mn/DOT

It is also easy to focus only on growth. There are other areas where roadways still do not meet the standards that we should demand for safety. The cost of fatalities and injuries from automobile accidents is estimated at $1.6 billion per year in Minnesota. A disproportionate number of the 600 fatalities happen on rural roads (more than 70 percent).[16]

Where costs cannot be counted, transparency is the best guide

As stated earlier, land use is closely tied to transportation costs and the overall perception of land use costs is necessary to assess the transportation market, but to accurately quantify the costs are beyond any widely accepted methods of economic analysis.

The full cost economic analysis does include subsidies for roads, transit, parking and other areas related to transportation, but does not include subsidies associated with inefficient land use, such as the use of tax increment financing (TIF) to develop undeveloped areas.

There are also external costs that are not included in the full cost analysis, specifically, water and land pollution costs from transportation. These demands have a significant impact on water quality, from the spilling, leaking and improper disposal of the products used in vehicles to the large amounts of paved surfaces that create more impermeable surfaces and more direct runoff of polluted water that does not filter down through the ground before reaching our waterways. There is no cost estimated for the impact of our continued development preference of large amounts of surface parking with new developments on land or water.

The authors of the full cost report also note that energy security, particularly the military protection of oil supplies, can be very controversial. Since their estimate was made before 9/11 and the Iraq war, it is possible that the estimate for energy security could be substantially higher now and in the future.

"Free" parking is perhaps the largest hidden cost of all

Although internal costs are not the focus of the full cost analysis, the authors note a few areas that cause concern, the top one being parking costs. So-called "free" parking raises internal (private) costs that are nearly as large as all the external costs in the study. How citizens pay for "free" parking is perhaps the largest hidden cost of all. It is embedded in the goods and services that everyone purchases and in what everyone earns.

In the area of governmental costs, the full cost analysis reveals that government in the 19-county metro region subsidized public parking ($270 million) as much as transit ($260 million) in 1998 (see Appendix A). This includes federal, state and local funding and does not include parking on streets.[17]

Transparent Funding Needed for Good Decisions

Establishing the true costs of transportation, therefore, cannot be arrived at through further calculations of economic costs. Some of what is true cost comes down to what we value as citizens and how much we are willing to pay.

We currently lack the public mechanism to make good decisions on what transportation facilities and services are needed and their comparative value in providing access, contributing to economic prosperity, reducing congestion, or improving safety. A much more dynamic approach is required to meet the mission of the transportation system in the near future. A mechanism must be designed to provide transparency of costs and bene-

fits and provide policymakers a better way to judge what citizens want, what they will use, and how much it should be subsidized.

The best way for government to assess the true cost of transportation, then, is to provide *cost transparency* by sending direct *price signals* to the consumers for the impacts of their transportation choices.

In order to achieve some measure of transparency, we must begin with direct governmental costs of transportation and begin to tie funding to the citizens receiving benefit from this public investment. This is the only way to begin to offer citizens more understanding and choice in transportation.

If the transportation system continues to provide access to areas further away from regional centers without making transparent the cost of that access, the tendency toward using larger amounts of land that cost less and are further out from the center will increase. The "market" for driving vehicles on roads must be more fully and directly priced in a transparent way. Driving cars alone, in particular, must be priced as fully as possible in order for transportation "consumers" to decide what other options, if any, interest them.

All options must be examined, not only in terms of comparative cost, but in terms of providing a fundamental level of access to transportation for those with low incomes and those who are unable to drive. Currently, this requires some level of subsidy above the level of subsidy for driving. Transparency requires that we are able to identify the level of subsidization for different options with some degree of meaning. The reason that we currently have no mechanism to set this cost baseline for policy makers or citizens is because we have not made the cost of driving vehicles – our most widespread mode of transportation – transparent.

Transparent Process Needed for Good Decisions

There is a somewhat vicious cycle inherent in viewing transportation as a consumer market. For consumers to have choice there must be choices available, and due in part to more recent development patterns in Minnesota, reasonable choices are not very available for many consumers. For government to invest greatly in making more transportation choices available for more people, it is difficult to move forward when the vast majority of consumers do not get a sense of the real cost of their current choices.

It is not enough to have more transparent funding. A transparent governance process must also be established to address funding the costs and impacts of growth and land use on transportation, particularly for the greater metropolitan area consisting of the seven metro counties and the nine "collar" counties that surround it in Minnesota. A governance process must be established that is able to make judgments between projects in a transparent way and address access issues along major transportation corridors.

Local consent for transportation projects and local veto authority over toll roads must be re-examined in light of who bears the cost of the choices made and the state objective of managing congestion and access. There is a cost when projects are delayed and there are additional costs when meeting local concerns and demands that go beyond improving the flow of the arterial road system. Citizens must get a better idea of costs and be ready to pay more directly before they can make better decisions.

The fundamental question we will need to answer to have more transparency is: how do we create a process that has distance from the forces that drive the process today, yet can be citizen-governed?

Although the Transportation Study Committee did not study different possibilities for new governance structures, there was strong agreement that there must be a process for evaluating transportation options based on transparent evaluation of costs and the application of pricing mechanisms that reflect costs to the system users.

RECOMMENDATIONS

Initial Steps Toward Transparency

Many measures could begin now to price a transportation market that will begin to reveal costs to the consumer of transportation.

1. Tolling: Apply tolling (initially in the form of congestion pricing) as often as possible throughout the arterial highway system whenever there is new capacity or a major reconfiguration/rebuild. Toll revenue should not be dedicated to only roads. It should also be available for transportation service options to alleviate congestion and support access to all users.

2. Vehicle registration fees based on road impact: Annual vehicle registration fees, auto and truck, should be based upon a weight and horsepower formula which reflects individual vehicle wear and tear impact on roadway surfaces.

3. Dedicated funding should be to all transportation facilities and services:
Any "new" revenues—increases in motor vehicle fuel taxes, tolling, fees based on impact (weight & horsepower), etc.—should be dedicated to all transportation services so that government can respond more effectively to the emerging transportation market. For the necessary flexibility in decision-making, the gas tax and vehicle license fees—or at the very least any increases in these sources—should not be subject to the current dedication and formula. Either action would require approval from the voters in 2006. Ideally, if the gas tax is to remain the major source of revenue for transportation, the constitutional dedication to roads should be entirely done away with and the gas tax should be reconstituted as a user fee and indexed to an appropriate price index. The same ballot that offers repeal of the current constitutional dedication should then ask voters to dedicate the gas tax for funding all transportation facilities and services.

4. Tie funding to land value increases: When the public invests in major transportation projects that spur appreciable increases in land value, the state should arrive at the true cost—the expenditures less the value of the benefits received—and capture part of the revenue increases attributable to the investment to fund the improvement in one of two ways:

- State tax increment financing (TIF): the amount of property tax revenue attributable to the public transportation investment is captured to pay for the road, rail or fixed guideway.
- At the point of sale of a benefited piece of undeveloped land, the state should tax a portion of the capital gain from that sale to pay for the transportation improvement that provided the benefit. For an example of what level of benefits are sometimes received, see the Star Tribune article from May 30, 2004 that quotes an analysis of what interchanges are estimated to add to land value around Rochester. The transportation tax proposed here is different from the federal capital gains tax which treats all capital gains equally. A tax on the capital gain from a transportation investment would be determined by the market value increase attributable to the public investment in the transportation facility or service.

5. Strategic investments to gauge "bang for the buck": Make small amounts of funding available in public/private partnerships to make strategic investments in pilot projects, to have public discussion, and to test demand. This will provide a better picture of how much "bang for the buck" we can expect out of alternatives.

- Look at incentives for businesses to test economic benefits of applying telecommuting on an organization-wide level.
- Provide equivalent commute incentives to determine what choices employees would make when offered a choice with the cost of their employer-paid parking.
- Provide tax incentives to groups of employers to coordinate transportation services for their employees, including shuttles from park and ride lots and carpool matching assistance.

- To what extent does universal access to communications technology assist in replacing travel? What are the opportunities throughout Minnesota for communications technology to replace travel, particularly as travel costs increase?
- Circulator functions to support suburban job densities that are not well-accessed by traditional transit because of land use that is difficult for walking. Incentives for groups of employers to provide shuttles or try Personal Rapid Transit (PRT) with a public/private partnership. Circulators can link to major fixed guideway transit or park and rides. There may also be application in more ex-urban areas.

6. TIF on undeveloped land: Where tax increment financing (TIF) is used to subsidize development on previously undeveloped land, the TIF should be required to include costs associated with arterial road development in the area. MnDOT would be required to produce an estimate of the costs of the arterial improvement.

7. Legislative Auditor should establish transparent baseline: Where there remains fundamental disagreement about transportation costs (particularly government subsidies), and where there are significant process questions (particularly the impact of municipal consent), we recommend that a "baseline" of the sources and uses of transportation funding and the associated processes be established by a well-respected and non-partisan source, the Office of the Legislative Auditor. The work should focus on better definition of comparative levels of government costs (subsidies) related to auto use (roads and parking) and other transportation options. A baseline, or principles, must be established for how to weigh this information for use in a transparent process to judge transportation options.

Endnotes

[1]"Road Finance Alternatives: An Analysis of Metro-Area Road Taxes." Barry Ryan and Tom Stinson, Department of Applied Economics, University of Minnesota. TRG Study #9 (March 2002).
[2]"The Full Cost of Transportation in the Twin Cities Region." David Anderson and Gerard McCullough, Center for Transportation Studies, University of Minnesota. TRG Study #5 (August 2000).
[3]"Seven Momentous Trends; Three Regional Forecasts," Mark Vander Schaaf, Met Council, Regional Policy Initiative Conference, May 26, 2004.
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[5]"Building a More Competitive Region: The Twin Cities." Bruce Katz, Center on Urban and Metropolitan Policy, the Brookings Institution, Regional Policy Initiative Conference, May 26, 2004.
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[7]U.S. Census Bureau.
[8]2000 Transportation Behavior Inventory (TBI), Met Council, Tables 28 and 71.
[9]State Demographic Center
[10]Met Council
[11]Metropolitan Area Comparison Table: Journey to Work Trends 1990-2000, U.S. Census Bureau
[12]U.S. Census Bureau.
[13]"Building Our Way Out Of Congestion," Gary A. Davis, Department of Civil Engineering, University of Minnesota, published by the Minnesota Department of Transportation, October 2001.
[14]"Road Finance Alternatives: An Analysis of Metro-Area Road Taxes." Barry Ryan and Tom Stinson, Department of Applied Economics, University of Minnesota. TRG Study #9 (March 2002).
[15]"Market Choices and Fair Prices," Transportation and Regional Growth Study #17, University of Minnesota Center for Transportation Studies, January 2003.
[16]"Transportation in Minnesota: What You Need To Know." The Minnesota Transportation Alliance.
[17]"The Full Cost of Transportation in the Twin Cities Region." David Anderson and Gerard McCullough, Center for Transportation Studies, University of Minnesota. TRG Study #5 (August 2000).

Charge to the Citizens League Transportation Study Committee

Finding and Funding Solutions for Minnesota's Transportation System

The quality of a region's transportation system is a key to its quality of life and to its economic competitiveness. Congestion is increasing at a rapid rate in the Twin Cities area, while the need for transportation interconnectedness and improvement across the state grows. There is a great amount of information available regarding transportation needs and options, but there is no reasonable way for citizens to judge the costs and benefits of our current transportation system in relation to the costs and benefits of future transportation options.

- The Citizens League will establish a committee to review available research and synthesize data to establish a 'true cost' framework for transportation options in Minnesota.
- The committee will identify areas where additional research is needed.
  The committee will produce a plan for further action by the Citizens League that:
  a.) clarifies the value of various transportation options throughout the state;
  b.) provides funding ideas and mechanisms that can make those ideas possible; and
  c.) engages citizenry and leadership in making choices to develop and fund a statewide transportation system.

CITIZENS LEAGUE TRANSPORTATION STUDY COMMITTEE

The Committee met 15 times between February 23, 2004 and January 10, 2005.

Morrie Anderson, Chair
Jeffrey Bland
Bright Dornblaser
Steve Elkins
John Farrell
Steve Finley
Dave Hutcheson
Charles Jorgenson
Steve Keefe
Margaret Kirkpatrick
John LaVine
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