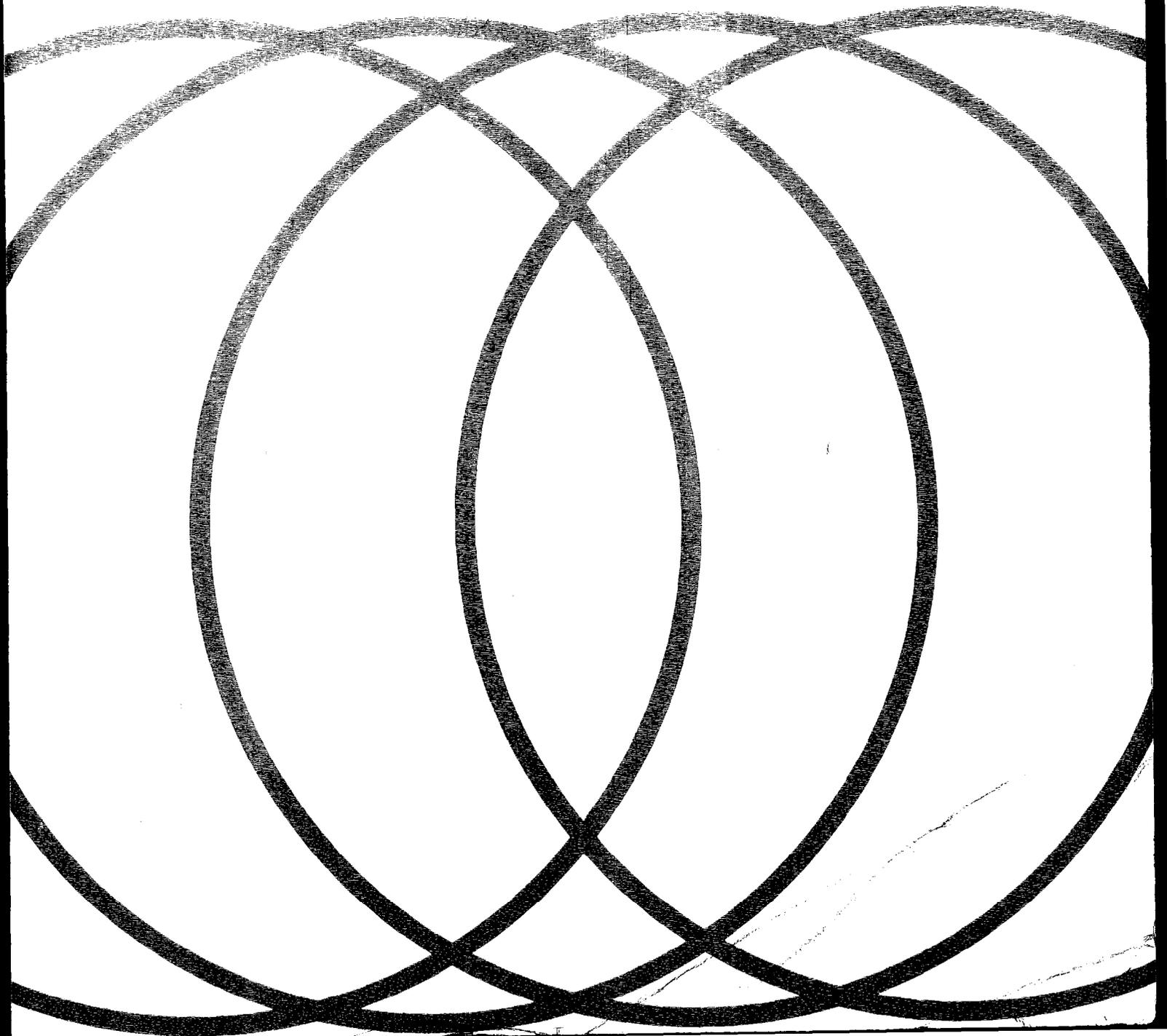


TRANSLINKS²¹

A multimodal transportation plan for Wisconsin's 21st century



Doc# 347
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February, 1995

Dear Transportation Partner:

On November 17, 1994, the Wisconsin Department of Transportation (WisDOT) formally adopted a comprehensive, long-range intermodal transportation plan called Translinks 21. This plan, which is required by and fully complies with federal Intermodal Surface Transportation Efficiency Act requirements, is proposed to guide transportation policies, programs and investments through the year 2020.

Translinks 21 provided an unparalleled opportunity for the citizens of Wisconsin to be directly involved in shaping their transportation future. Since the beginning of the planning process, nearly two years ago, close to 200 meetings have been held with citizens and constituent groups in all corners of the state. We talked to more than 10,000 customers who shared their needs, priorities and ideas, and helped WisDOT shape the best plan possible. Public reaction to the plan was very enthusiastic and positive, receiving a 4-to-1 margin of support among those expressing approval or disapproval.

I want to personally thank the thousands of Wisconsinites who worked so hard to help us shape Translinks 21 during the past two years. Because of your vision and commitment, Wisconsin now has a long-range transportation plan that truly reflects the needs and hopes of the customers we serve, and the plan is clearly serving as a model for the nation,

Throughout the Translinks 21 process, WisDOT ensured that each component of the plan responded to the fundamental values that make Wisconsin unique: Providing adequate mobility and choice, protecting the environment, promoting community development partnerships, supporting economic growth and making wise use of tax dollars. As a result, the Translinks 21 plan includes not only a blueprint for improving our transportation systems, but also strategies to ensure that those systems have a responsible impact on the world around us.

Translinks 21 outlines a responsive and innovative blueprint to invest \$39 billion in transportation over 25 years - or about \$8.9 billion over current spending levels extended. It provides the investments we need to maintain and improve highways as the backbone of our transportation system, while also making appropriate investments in alternatives to ensure mobility for people who cannot drive, for elderly and disabled persons, and for businesses competing in a global economy.

With all its promise for even better mobility, the Translinks 21 plan is affordable for taxpayers. For example, if this plan is financed entirely through traditional highway fees - which is one of several options - the average one-car household will see a fuel tax increase of just \$20 annually once every five years during the 25-year period. According to the statewide poll, it's a cost that four of five Wisconsin citizens are willing to pay.

Our work on Translinks 21 is not over; it is truly a work in progress. Though we've completed an important stage in the plan's development, your involvement remains critical. Over the next several years, we will need to review the Translinks 21 plan with you, and amend it periodically, to ensure that it continues to meet the mobility, economic and environmental needs of Wisconsin as our state changes over time. The Governor and Legislature will review and evaluate the plan and consider how the plan components might be implemented through successive state biennial budgets. And as we move forward, long-range transportation plans for our largest urban areas, developed by Metropolitan Planning Organizations, will be coordinated with Translinks 21 - complementing WisDOT's intercity transportation plan to form a complete statewide blueprint.

Again, thank you for your commitment to even better transportation in Wisconsin. Please take the time to review our Translinks 21 plan - and share in our vision for the 21st century.

Sincerely,



Charles H. Thompson
Secretary



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CHAPTER ONE EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

WISCONSIN TRANSLINKS 21

The Wisconsin Department of Transportation (WisDOT) has completed a long-range process, called Translinks 21, that resulted in the development of a 25 year, statewide intermodal transportation plan to facilitate the efficient and economic movement of people and goods.

Translinks 21 is different from any WisDOT plan of the past. What Translinks 21 provides is a broad planning umbrella - with a unified vision and set of goals throughout - from which individual modal plans for highways, airports, railroads, bikeways and transit will be shaped.

By planning within a broad framework, Translinks 21 can better identify how each mode functions and complements the others as part of a total, integrated transportation network.

The Translinks 21 plan, adopted by WisDOT Secretary Charles H. Thompson on November 17, 1994, will provide the direction for Wisconsin's transportation policies and programs as the plan is implemented - in modest and incremental steps over successive biennial budgets - from 1995-2020.

Overall, the plan calls for a total investment of approximately \$39 billion (1994 constant dollars) achieved by 2020 - or \$8.9 billion over current spending levels extended.

New federal requirements and a changing Wisconsin call for Translinks 21

The federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires all states to develop a comprehensive, intermodal transportation plan that must consider many complex planning requirements. The federal Clean Air Act also calls upon transportation to help reduce its share of emissions that cause an ozone problem in southeastern Wisconsin and other states.

Beyond federal requirements, a changing Wisconsin population and economy, and the new lifestyles and technologies that shape mobility needs, call for a visionary transportation strategy.

Public involvement helps build Wisconsin's vision for the future

ISTEA requires, and WisDOT's way of doing business demands, that the public has a strong voice in shaping Translinks 21.

As a result, WisDOT conducted an extensive and unprecedented statewide public involvement effort designed to elicit input from the broadest possible range of transportation customers in three stages - as planning began, when detailed plan choices were put on the table, and to gauge public reaction to the preliminary plan before final adoption.

The public - including the state's minority, elderly and low-income citizens - was actively involved in Translinks 21 in many ways - through regional information meetings and open houses, surveys, focus groups, expert panels, one-on-one meetings with key organizations, media and legislative briefings, and numerous publications. Public hearings and a statewide telephone survey were added in the Fall of 1994 - all designed to reinforce WisDOT's role as a "listener," hearing the public's needs and priorities, and responding with a sound plan.

WisDOT received over 6,000 surveys and written comments on the four plan alternatives presented for review during the Summer of 1994. More than 1,700 completed surveys on the draft Translinks 21 plan were later received after the plan was presented in September.

In evaluating public reaction to the draft plan, two specific tools were utilized. First, a scientifically-valid statewide telephone survey of 503 state residents was conducted

by the University of Wisconsin-Parkside Survey Research Center. Second, three-page surveys on the draft plan were distributed at each public and constituent group meeting during the Fall of 1994.

Clearly, the top priority expressed by the public is to preserve, improve and expand (as needed) the state and Interstate highway system. At least 80% of respondents endorsed existing Corridors 2020 commitments and increased highway preservation investments, while nearly 65% supported updating the Milwaukee freeways to modern standards.

Increased investments in local roads - for repairs and improvements - were also supported by a vast majority of people.

Support for improving non-highway modes of transportation - such as intercity bus service, passenger rail, urban transit and bikeways - was less enthusiastic but still very notable.

Each non-highway initiative received approximately 50% public support, with a more positive response to specialized elderly and disabled transportation and intermodal freight programs.

Overall, four of five of the telephone survey respondents who expressed approval or disapproval supported the draft plan, with just one in six voicing opposition. Support for the plan in the October informational meetings and public hearings reached 86%. As a result, very few changes to the draft plan were made in adopting a final Translinks 21 plan.

Metropolitan planning organizations are WisDOT's key partners

Under ISTEA, WisDOT is responsible for shaping intercity transportation plans that provide mobility between communities.

In the state's fourteen urbanized areas over 50,000 population, Metropolitan Planning Organizations (MPOs) are charged with developing long-range plans.

Effectively coordinating WisDOT's intercity transportation plans with the MPO plans for metropolitan areas that will be completed over the next three years -both of which are long-range, comprehensive and multimodal in scope - is a key to the success of Translinks 21,

As a result, the WisDOT-MPO partnership strengthened by ISTEA - with an already strong foundation in Wisconsin - is critical,

Models forecasted future travel needs, trends

Translinks 21 is not a "crystal ball," merely guessing at the transportation improvements needed in Wisconsin over the course of the next 25 years.

Instead, WisDOT developed and relied on new multimodal travel models - the first of their kind in the nation - to look at how people and goods currently move in Wisconsin, and how they are likely to move in the future, given changes in technology, the economy, and the new transportation investments called for in the adopted Translinks 21 plan. Trade-offs - looking at how the different transportation modes interact together - is a key focus of the modeling.

WisDOT's intercity travel models yielded some important findings. Currently, automobiles carry 99% of all intercity passenger trips between Wisconsin communities and to adjoining counties in neighboring states.

With the intercity rail and bus initiatives included in Translinks 21, autos will carry 98% of those trips by 2020, with new high speed rail services having the largest impact of any non-highway alternative. While the impact of passenger and freight improvements has a modest impact statewide on intercity auto and truck travel, the impacts are

somehow higher - yet still relatively small - in more densely-populated corridors. For example, in the corridor between Milwaukee and Kenosha, the new high speed rail and intercity bus services as well as intermodal truck-rail facilities included in Translinks 21 are estimated to reduce total auto and truck travel on I-94 in 2020 by 2.8%. While the non-highway alternatives included in the plan offer many significant mobility and economic benefits, they do not replace the need for quality highways.

Pricing has limited impact on travel, little impact on the economy

WisDOT and the Southeastern Wisconsin Regional Planning Commission also investigated the impact of pricing measures - charging motorists more to use the highway system - on future vehicle travel. The study showed that pricing measures will have relatively little impact.

In southeastern Wisconsin, doubling the price of fuel through a \$1.10 per gallon gasoline tax increase, and expanding transit services by 72%, would reduce vehicle travel by 10%-12%. This reduction would come predominantly from shorter, but not fewer, auto trips on highways.

On a statewide basis, a study found that 96% of direct highway costs are currently paid for with user fees. Shifting the remaining 4% of those costs to motorists would require an increase in the state motor fuel tax of about 29 cents. However, the estimated 3% reduction in urban vehicle travel forecast to result would be quickly offset by an expected 2% annual growth in vehicle travel.

Pricing measures - if enacted solely on a regional or statewide basis - would simply raise the cost of transportation in Wisconsin, putting our businesses and citizens at a severe economic disadvantage.

INTERMODAL PASSENGER TRANSPORTATION PLAN

The first key component of WisDOT's Translinks 21 plan is its Intermodal Passenger Transportation Plan. This component focuses on moving people between communities, and in coordination with MPO plans, within communities all across Wisconsin.

The Intermodal Passenger Transportation Plan includes three integrated elements:

- I Intercity passenger transportation plan.
- I Urban passenger transportation plan, to be coordinated with MPO efforts.
- I Rural and specialized transportation plan.

INTERCITY PASSENGER TRANSPORTATION PLAN

For intercity passenger transportation, Translinks 21 outlines an innovative, ambitious and interconnected mobility network that provides the opportunity for people to conveniently access the state, nation and world using either private automobiles, public transportation, or some combination. This network makes travel between cities, and then from point to point within cities, easy and seamless, with a wide range of available travel choices.

State and Interstate highways remain a key focus

State and Interstate highways anchor Wisconsin's multimodal intercity transportation network and will continue to be a key focus of WisDOT's investments under the Translinks 21 plan. Planning models and forecasts show that, even with more invest-

ments in intercity rail and bus service, private automobiles will continue to carry 98% of all intercity passenger trips by 2020.

WisDOT will complete construction of the multilane Corridors 2020 Backbone network (which includes all Interstates and key highways such as 10,29,41,51, 53 and 151), and all other major highway projects with current legislative approval, by 2005. To accomplish this, funding for the Major Highway Program will remain at its current level of \$161 million annually, adjusted for inflation and other costs, through 2005. No additional major expansion projects will begin construction before 2005, although the Transportation Projects Commission will continue to recommend major projects for construction after 2005.

On about 1,000 miles of other state highways - including existing and planned Corridors 2020 routes - projections show congestion problems emerging over the next 25 years.

In order to identify the most appropriate ways to address future congestion problems, WisDOT will complete a Congestion Management System (CMS) during the Spring of 1996, in cooperation with MPOs in larger urban areas. The CMS will analyze a wide range of solutions available for solving congestion - including, but not limited to, additional highway expansions. The highway expansion funding needs after 2005 could be less, more, or the same as current levels. After the CMS is complete, WisDOT will amend its Translinks 21 plan and Major Highway Program to an appropriate funding level.

Aside from highway expansions, the adopted Translinks 21 plan includes significant additional investments to rehabilitate and modernize existing state and Interstate highways. Other federally-required management systems - most notably those for pavement and bridge conditions - will help guide WisDOT investments to ensure that rehabilitation occurs on a priority basis.

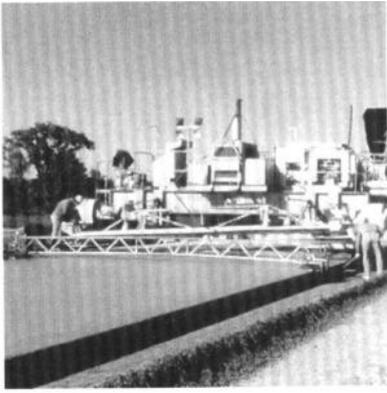
An additional \$1.54 billion over current levels is provided to address all existing and emerging pavement, bridge and interchange upgrade needs on aging multilane Corridors 2020 Backbone routes. Without these new resources, the number of unacceptably rough pavement miles on the state's key highways would increase five-fold - from 65 to 320 miles - within the next ten years. Further, insufficient funding for interchange modernizations would very likely result in fewer economic development opportunities, and more state and local traffic problems, in communities,

Non-Backbone state highways - more than 10,000 miles statewide - will benefit from an additional \$520 million over 25 years for pavement projects. This investment level will be sufficient to maintain non-Backbone state highways in the same overall condition that they are today.

Improved state and Interstate highway access will also be funded separately to boost economic activity - instead of coming at the expense of rehabilitation or other construction projects, as is currently the case. A total of \$250 million is provided through 2020 to construct new interchanges (but not new capacity) as needed to serve businesses and avoid state highway and local traffic problems.

On less-traveled rural state highways, a new \$175 million Country Roads Program will make these routes destinations in themselves for leisure travelers. Regular resurfacing, better pavement markings, improved safety features, prairie restorations and other landscaping improvements will enhance the scenic, historic and other attractions surrounding the highway.





local road initiatives target maintenance, improvements

Nearly 100,000 miles of locally-owned highways, roads and streets complement state highways by providing mobility and serving economic activity in communities throughout Wisconsin. With constrained federal and local property tax resources, however, many of the basic repairs and improvements on local roads and streets have not kept pace with growing traffic.

In response, the adopted Translinks 21 plan includes \$2 billion in new state investments targeted to local roads and streets.

General Transportation Aids - which help finance local road maintenance and low-cost repairs - will be increased in steps by \$500 million to fund 30% of eligible county road costs and 24% of municipal road costs, in keeping with established state goals. While these aids have more than kept pace with inflation in recent years, local costs often have been rising at a faster rate, meaning that state dollars are buying fewer local road maintenance and repair services. Translinks 21 seeks to reverse this trend by strengthening WisDOT's financial partnership with local governments.

The Local Road Improvement Program (LRIP), initiated in 1991 to pay 50% of long-lasting, higher-cost reconstruction and resurfacing improvements on local routes, will increase by \$1.5 billion over current levels. These increased investments are needed as many local, farm-to-market routes now carry much more and heavier traffic than they were designed to handle safely and efficiently. A very popular program with local officials, LRIP helps make capital improvement dollars more readily available, instead of forcing needed projects to wait.

Working closely with local officials, WisDOT will also work to establish a better base of information on local road and street conditions, and review state and federal financing policies.

Specifically, new state-local partnerships will help develop a detailed assessment of local road investment needs - to ensure that appropriate investments are made. The last partial local road needs assessment was done in 1986. A new joint Council on Local Roads will also be formed.

Rail, bus, airports complete a multimodal system

For many people in Wisconsin, intercity travel is about much more than highways and personal automobiles. That's why the adopted Translinks 21 plan calls for significant improvements to intercity bus, passenger rail and airport services, to complement highways in creating a seamless, multimodal, public-private intercity transportation network in Wisconsin.

In order to provide better public transportation connecting even more parts of the state, WisDOT will invest \$160 million over 25 years to maintain existing intercity bus service and ensure new or improved service to all communities over 5,000 population. At least two daily round trips will be available on 17 routes, phased-in on a demonstration basis to test its cost-effectiveness. Private companies will provide the intercity bus services under contract with WisDOT.

All intercity bus service providers will be encouraged to accommodate bicycles and connect easily with local transit and specialized elderly and disabled transportation services.

A new \$25 million state-funded program will help communities build or improve intercity passenger transportation stations connecting intercity bus, rail, auto and in some cases air services with each other, and with municipal bus, taxi or elderly and disabled services.

Given that Amtrak - the nation's intercity passenger rail provider - is caught in a difficult and worsening financial situation, Wisconsin will be increasingly challenged to maintain and perhaps even restore its current level of service. As a result, a key priority of Translinks 21 will be first to maintain, and then gradually build upon, existing Amtrak service.

(Note: At the time of this writing, Amtrak had announced that the Milwaukee-Chicago Hiawatha service would be completely eliminated, and Chicago-Milwaukee-West Coast service greatly reduced, effective April 1, 1995. Wisconsin is now working to prevent that from occurring, given that the Hiawatha ranked first nationally in terms of ridership growth from 1989- 1994.)

With the highly successful Milwaukee-Chicago corridor as its basis, WisDOT will continue to work on Amtrak service in the Chicago-Milwaukee-Madison and Chicago-Milwaukee-Green Bay corridors. Plans are for more frequent service along the existing Milwaukee-Twin Cities and Chicago-Milwaukee corridors, with new stops at Milwaukee's General Mitchell International Airport and Kenosha. And feeder bus networks will connect more communities to Amtrak.

To ensure wider access to the service, WisDOT will encourage that all passenger rail trains be equipped with bicycle racks and connect easily with expanded local transit service as well as more local and regional specialized transportation services for elderly and disabled persons.

A total of \$126 million in new state funding over the plan period will be required for these passenger rail service initiatives - including both capital and operating costs - with Illinois, Minnesota and the federal government providing a combined \$152 million for multistate efforts.

With Amtrak services restored, improved and expanded, WisDOT will move toward initiating high speed rail - with speeds of up to 125- 150 miles per hour enabled by diesel technology - in partnership with other states, the federal government and the private sector.

High speed rail will begin in the Milwaukee-Chicago corridor, and then extend to Madison and the Twin Cities. More frequent Amtrak service will link Milwaukee-Green Bay. Wisconsin will need to contribute \$462 million for capital and operating costs for the service through 2020, with the remaining \$1.5 billion coming from Illinois, Minnesota and the federal government.

High speed rail is expected to have the most significant impact on travel of any non-highway initiative in Translinks 21, attracting more than five million new passengers each year by 2020.

Air service - the dominant intercity public transportation mode - will be improved through both investment and advocacy initiatives. WisDOT will provide \$50 million to replace anticipated shortfalls in the federal Airport Improvement Program, which is used to maintain, construct and improve commercial and general aviation facilities. An additional \$25 million will help airports purchase land to accommodate new instrument approaches, and \$15 million in state funding will help implement a noise control program at General Mitchell International in Milwaukee.

WisDOT will also work closely with other states and Wisconsin's congressional delegation to provide more direct, non-stop flights to and from Wisconsin, and to maintain dependable and adequate airline access from state communities to key national hubs in Chicago and Minneapolis.



INTERMODAL URBAN PASSENGER TRANSPORTATION PLAN

The adopted Translinks 21 plan includes an intermodal urban passenger transportation component that truly fits its name. Using a combination of highway improvements, potential expansion and technology measures, innovative transit programs, increased bicycle/pedestrian investments and expanded programs to promote ridesharing, WisDOT is charting an integrated, comprehensive, cost-effective course for working with urban communities to improve their mobility.

As noted previously, MPOs are primarily responsible for producing long-range transportation plans in the state's largest urbanized areas, with WisDOT responsible for intercity plans. As a result, no specific plans for MPO areas are included in Translinks 21.

But neither the WisDOT nor the MPO plan is complete by itself. Statewide intercity plans are only of limited value, unless they come to conclusion in complementary MPO urban plans. Similarly, urban vitality depends upon the opportunity for businesses and people to efficiently access other communities, as well as national and international destinations.

WisDOT actively works with and supports MPO planning in many ways. Federal and state planning funds pay for most MPO costs. WisDOT is active on MPO advisory and technical committees, to help forge MPO plans that blend well with statewide plans and suit community objectives. And WisDOT provides multimodal travel forecasts and other technical assistance.

WisDOT also funds many programs - for state highways, local roads, transit, bike/pedestrian facilities, rail and airports - that make the implementation of MPO plans possible.



Highways anchor a multimodal urban transportation network

State highways and local roads anchor multimodal transportation networks in Wisconsin's urban areas, where automobiles carry more than 90% of all urban trips, and roadways also carry the majority of bus, bicycle and pedestrian travel. As a result, Translinks 21 includes a series of initiatives to ensure that urban highways and local roads function efficiently.

At the center of the Translinks 21 urban highway strategy is an additional \$1.29 billion over 25 years to completely redesign, upgrade and reconstruct the Milwaukee Freeways - which carry more people and goods per mile, and are in the worst condition, of any state highways. Built more than 35 years ago, the Milwaukee freeways have carried tremendous traffic volumes and loads that have worn out the pavements. They have obsolete interchanges with left-only off ramps that present hazards and cause crashes at rates well above the statewide average. Simple resurfacing, instead of reconstruction, is no longer beneficial or cost-effective.

WisDOT will actively include local officials and citizens from the metropolitan Milwaukee area in planning the modernization of the Milwaukee freeways, to ensure that those facilities are "good neighbors" in the community. This policy will also apply to similar projects statewide.

With the exception of a 3-mile stretch on I-43, the upgrade and reconstruction of the Milwaukee Freeways will NOT provide unrestricted new lanes. A study of the East-West Corridor linking Milwaukee and Waukesha is in the process of analyzing high occupancy vehicle (HOV) lanes, light rail and a busway as potential solutions to growing traffic congestion there. If the study endorses HOV lanes, Translinks 21 will be amended to include the \$113 million needed to adapt the interchanges for HOV's.

Southeastern Wisconsin will also be the focus of WisDOT's efforts to implement new "smart car, smart highway" technology to improve traffic flow. Implementation will continue on the \$9 million MONITOR system of integrated computerized traffic controls in Milwaukee County, and Wisconsin will work with neighboring states on other state-of-the-art initiatives.

In urban areas statewide, WisDOT will also invest an additional \$250 million to make highways "good neighbors" by providing noise barriers, lighting, landscaping and visual improvements.

Public transit, rldesharlng boost moblllty

Public transit - in the form of fixed-route bus or shared-ride taxi services - plays a critical mobility role in 60 Wisconsin communities, especially for young, elderly, disabled and low-income persons. Five Translinks 2 1 initiatives aim to reverse trends of rising fares, declining service and ridership, and "downward" federal funding that are challenging transit.

First, WisDOT will stabilize the external financial support provided to transit - a key to maintaining existing service levels. WisDOT will provide an additional \$300 million to provide combined state-federal funding of 50% of operating costs in the Madison and Milwaukee urbanized areas, 65% of costs in areas between 50,000-200,000 population, and 70% in areas under 50,000 population. Federal operating assistance is expected to be phased-out.

Second, WisDOT will provide \$400 million to expand existing transit services. State funding will pay 80% and 70% of the operating costs in the first two years of operations respectively -to minimize community financial risk - and then return to the 50%-65%-70% levels above.

Third, WisDOT will provide \$200 million to begin regional transit services, in cooperation with local governments or private operators. This service will connect major shopping, employment, residential and population centers in metro areas with bus, van or rail service.

Fourth, WisDOT will work with local governments in larger metropolitan areas - if they are interested, and at their request - to help develop Metropolitan Transit Cooperatives (MTCs) that can more easily coordinate and manage shared metro-area transit services. A focus of the MTCs will be to develop non-property tax sources of local revenues that can be dedicated to funding transit services - again, where larger urban governments are interested in WisDOT assistance.

Fifth, \$25 million is included to develop advertising/promotional campaigns for transit.

In the Milwaukee-Waukesha East-West Corridor, WisDOT will reserve \$489 million in special federal funding earmarked for Wisconsin pending the results of ongoing studies that are considering a combination light rail/HOV/husway/expanded bus service package for the corridor. Once a locally-preferred alternative is selected by citizens and local officials through the current ongoing process, WisDOT will commit the \$489 million to help implement the alternative.

For other potential major transit initiatives, such as commuter rail in southeastern Wisconsin and light rail in Madison, Translinks 2 1 commits 80% state or available federal funding to the costs of federally-required major investment studies that must be completed before those initiatives can be developed. Local governments will be responsible for the remaining 20% of study costs.



The potential Milwaukee-Racine-Kenosha commuter rail project will receive first priority, with a feasibility study undertaken immediately and, if the results are positive, a full-fledged major investment study completed in 1996.

Additional highway/transit studies are proposed for the south central/southeastern Wisconsin - northern Illinois corridor and other areas where transportation links to adjoining states are vital.

In order to encourage more people to choose alternatives to driving alone in urban areas, WisDOT will expand its transportation demand management (TDM) efforts with an additional \$70 million investment. Expanded grants to local governments and employer groups, improved information and technical assistance, and potential tax breaks for TDM efforts are included.

WisDOT will also launch a new public education initiative in urban areas, working with communities to inform the public on the merits of responsible driving, and on how to use public transportation systems. Through this effort, WisDOT will encourage people to be "good citizens" by saving energy and using other modes - such as walking, bicycling and taking transit - where it is feasible. The department will also help people understand the air quality, congestion relief, mobility and other benefits that can be realized by using non-driving modes. A special emphasis will be placed on developing educational materials for use in schools.



Bicycle, **pedestrian** travel assumes a stronger role

Currently, approximately 6% to 9% of all Wisconsin work trips are made by walking and bicycling. In several metropolitan areas, almost 20% of trips are made by these modes. Because of the potential of these modes for shorter trips, "people power" transportation will benefit from additional bicycle and pedestrian funds.

Bicycle and pedestrian accommodations will be considered on urban state highways where they are included in metro-area or local plans or justified by their projected use. Additionally, \$50 million will be provided for bicycle lanes on existing highways, to supplement existing federal programs, and a new \$50 million state program will be initiated, to finance stand-alone urban bicycle and pedestrian projects.

The Translinks 21 plan also commits to developing a comprehensive State Bicycle Plan to serve commuting. The plan will build upon MPO bicycle commute plans; address needs outside urbanized areas; and include safety, training and education components to support increased bicycle usage.

RURAL AND SPECIALIZED PASSENGER TRANSPORTATION

WisDOT provides counties and non-profit organizations with state and federal funding to operate and purchase vehicles for specialized transportation programs for elderly and disabled persons. As Wisconsin's population ages, these programs will become increasingly important.

However, in many parts of Wisconsin - particularly in rural areas - specialized elderly and disabled transportation is unavailable or inadequate to meet critical mobility needs. To address this problem, the Translinks 21 plan provides an additional \$220 million over 25 years. This additional funding will provide 2.6 million more specialized transportation trips annually (double the current level), 275 new specialized transportation vehicles, and improved planning and coordination of services on a countywide and regionwide basis.

Building on this two-fold increase in program funding, WisDOT will also work with counties and aging coalitions to determine how to improve specialized transportation services, and evaluate the appropriate funding level for those services. The results will be used to guide and possibly modify specialized transportation investments as the Translinks 2 1 plan is amended.

INTERMODAL FREIGHT TRANSPORTATION PLAN

As Wisconsin companies increasingly compete in a global economy, markets and competitors that at one time may have been located across the state are now just as easily found from Mexico to Malaysia. The rapid growth in international trade has prompted many firms to change the way they do business - relying on new technologies and new ways of shipping products.

By 2020, an estimated 485 million tons of freight will move to, from or through Wisconsin each year. Growth in freight traffic for all modes - highways, rail, water and air included - is projected to be significant.

Working closely with a panel of shipping, transportation and industry experts over many months, the adopted Translinks 2 1 plan developed an intermodal, technological freight transportation system for the 2 1 st century that responds to the market-driven needs of businesses statewide.

Highway system preservation, expansion and Improvement will aid shippers

Nearly 160 million tons of freight are carried on Wisconsin's highways every year, and trucking shipments are expected to increase 50% by 2020.

The adopted Translinks 21 plan includes several state highway initiatives that will provide even more efficient and cost-effective service for freight shipments. These initiatives include the completion of Corridors 2020 Backbone routes and currently-approved major highway projects by 2005; additional funding to meet all pavement, bridge and interchange upgrade needs on Corridors 2020 Backbone routes; added investments to meet emerging pavement needs on non-Backbone highways; and the upgrade and reconstruction of the Milwaukee Freeways. New investments to maintain, repair and improve local roads and streets will also benefit shippers.

Additionally, Translinks 21 includes a new \$60 million program to upgrade about 100 miles of key state highways in central and northern Wisconsin that currently face weight restrictions during the spring months - which poses an economic hardship for many key industries.

Freight rail plan responds to the freight market-driven system

Translinks 2 1 forecasts predict a 73% increase in tonnage moved by rail through 2020, for an overall annual increase of 83 million tons. More and more Wisconsin companies are relying on rail for shipments, particularly in concert with trucks, ports or air for intermodal moves.

Through a program combining grants and a revolving loan fund that will become self-supporting, WisDOT will invest \$300 million in improvements on privately- and publicly-owned rail lines in Wisconsin over the next 25 years. The cost to taxpayers for these improvements, however, will be much less than \$300 million, given that most resources provided through a revolving loan fund that will be repaid by the private sector. The focus of these investments will be on improving rail infrastructure, providing better tracks and operating signals to accommodate heavier trains at higher speeds; and on improving intermodal connections and facilities involving rail.





Rail-highway crossing plan will upgrade safety, sense

Over 25 years, WisDOT will invest a total of \$415 million - or \$240 million over current levels - to install or upgrade warning systems at the nearly 5,900 rail-highway crossings in Wisconsin. This investment is needed to ensure safe and efficient highway and rail operations, as freight rail, passenger rail, auto and truck traffic all experience growth through 2020.

Translinks 21 strengthens role of waterborne freight transportation

Translinks 21 forecasts also predict a 50% increase in waterborne shipping - from 34 million tons in 1992 to 51 million tons by 2020. Waterborne transportation will continue to provide a significant alternative for shipping bulk commodities as part of an intermodal network.

In response, Translinks 21 includes a \$75 million increase in the state Harbor Assistance Program - double the current investment level - to fund dock wall repair and maintenance, construction of disposal facilities for dredged materials, landside storage and intermodal facilities, internal roads and rails, storm-water management structures and land acquisitions.

WisDOT will also participate in discussions to resolve concerns over port and harbor dredging regulations, assist in a freight transportation marketing effort to include ports and harbors, and advocate for improvements to the Great Lakes/Mississippi River lock and dam system.

Air cargo plan responds to rising needs, rapid growth

While it carries the smallest share of cargo shipments, Translinks 21 forecasts predict that air cargo activity will grow 215% by 2020. Air is particularly important for carrying high-value, time-sensitive, low-volume commodities, and for its intermodal links to trucking and rail.

Most of the Translinks 21 initiatives to improve air service in Wisconsin are detailed in the Intermodal Passenger Transportation Plan section. An additional \$25 million will be invested specifically for air cargo facility improvements at commercial and general aviation sites.

Intermodal **access plan** provides needed connections

Along with the specific initiatives listed above, the adopted Translinks 21 plan includes a new \$60 million program designed specifically to improve intermodal access. WisDOT will pay 80% of the costs of upgrading local roads that serve intermodal rail, harbor and airport facilities. State funding will also be made available to create or improve rail access to ports.

LAND USE STRATEGIES

Throughout its public outreach process, WisDOT received extensive and diverse input on land use issues. There is a common sentiment that land use poses growing problems and concerns statewide, and while the status quo is not satisfactory, neither are radical departures from current land use decision-making processes. Further, the public recognizes that transportation affects land use and has a role in addressing related problems - as part of a comprehensive set of land use strategies involving participation from the private sector and state and local governments.

WisDOT will assume a very active role on the new state Interagency Land Use Council, which was formed by Governor Tommy Thompson to coordinate overall state

agency land use efforts. As a key participant on the council, WisDOT's role will be appropriately focused on land use-transportation issues. More comprehensive land use planning issues are not, and will not be, solely WisDOT's responsibility - as they require broad involvement from several agencies.

WisDOT will also adopt four strategies to achieve a more cooperative relationship between land use and transportation. First, WisDOT will develop partnerships to incorporate local land use objectives into state transportation planning, and state transportation concerns into local land use planning. Second, WisDOT will work to increase efforts to identify the transportation impacts of large-scale and unplanned development. Third, educational materials and programs about community development patterns that support multimodal transportation will be developed. And fourth, WisDOT will dedicate more attention to the impacts that transportation facilities and adjacent land uses generate on each other to make the impacts more positive and compatible.

Since local resources targeted to land use-transportation planning are often quite constrained - and since Translinks 21 envisions more sophisticated planning - WisDOT will create a new state grant program to help local governments develop transportation corridor management plans to deal effectively with actual or anticipated growth in their key transportation corridors.



ENVIRONMENTAL STRATEGIES

WisDOT currently makes a substantial commitment to the already significant and growing environmental laws and regulations that govern transportation development at the state and federal level - addressing such areas as wetlands, endangered species, erosion control, stormwater management, soil and groundwater contamination, and historic/archeological resources. That commitment will, of course, be maintained fully under Translinks 2 1.

WisDOT will also take further actions to enhance the environmental responsibility of its facilities and services - exceeding federal and state laws where appropriate and publicly-desired.

Specifically, WisDOT will improve the environmental information available to the public and decision makers; strengthen partnerships to minimize transportation's environmental impacts; influence debates regarding environmental policies that affect transportation; continue to explore new ways to lessen the environmental impacts of transportation; improve its methods and information used to integrate environmental considerations into transportation decisions; and strengthen current practices where possible.

Financing the Translinks 2 1 plan will require a total, cumulative investment of approximately \$39 billion (in 1994 dollars) from 1995-2020 - or \$8.9 billion over current levels extended.

The increased investments required to implement the Translinks 2 1 plan will be achieved gradually, in a series of modest steps, as determined by the Governor and State Legislature in successive biennial budgets over the 25-year planning period. When and how components of the plan are developed will depend upon legislative, economic, mobility, environmental and other priorities, as well as on the availability of needed revenues.



A variety of potential revenue sources - including highway user fees, state general funds, increased federal funds and bonding - all could be sought to finance Translinks 21.

To provide one perspective, the Translinks 21 plan could be financed totally by increases in motor vehicle fuel taxes. Five rate increases could occur through 2020, each occurring once every five years.

If this were done, the average one-car household in Wisconsin would see its motor vehicle fuel tax payments increase by \$20 (or about four cents per gallon) annually every five years.

In 2020, with the Translinks 21 plan in place, that household's annual motor vehicle fuel tax payments would have increased by a total of \$100 over current levels, plus inflation.

A \$100 annual increase in motor vehicle fuel taxes for a one-car household in Wisconsin, achieved in a series of modest steps, would represent about a 3.5% constant dollar increase in the total cost of owning and operating a vehicle, growing from \$2,800 to \$2,900 per year 25 years later.

In effect, the total cost of driving would rise by just over one-tenth of 1% per year.

With the Translinks 21 plan and its broad overall transportation framework in place, WisDOT will begin the detailed follow-up planning and evaluation studies needed for implementation.

Over the next 18 months, a key focus for WisDOT will be the development of federally-required management systems for congestion, pavements, bridges, safety, public transportation and intermodal facilities. These systems will provide detailed information on transportation system needs and investment strategies, in order to guide the ongoing refinement of Translinks 21. Developing these management systems will involve coordination with the state's MPOs and local units of government.

Using the management systems as a resource, WisDOT will also develop individual system plans for each transportation mode - providing the level of detail needed to implement the initiatives in Translinks 21. System plans, which will begin to take shape in 1995, will provide a general framework on the phases of implementation, but will not include specific timelines for individual projects.

WisDOT will also continue to work with MPOs to undertake major investment studies of potential commuter rail, light rail and highway capacity projects within metropolitan areas and key interstate travel corridors. Potential commuter rail service between Milwaukee-Racine-Kenosha will receive first priority, with a detailed feasibility study to be done in 1995.

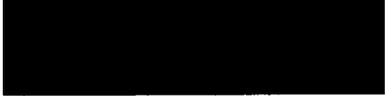
The Governor and Legislature will review and evaluate Translinks 21 and consider how the plan components might be implemented through successive state biennial budgets.

SYSTEM-PLAN ENVIRONMENTAL EVALUATION

In developing Translinks 21, WisDOT performed its first-ever System-Plan Environmental Evaluation (SEE) to assess the plan's potential impact on the natural, human and economic environment. Wisconsin is virtually the only state to perform this kind of environmental assessment of its transportation plans, and WisDOT is the only Wisconsin state agency to do so.

The SEE looks at how the plan will affect areas including land use, economic development, communities, sensitive land and water resources, energy consumption and air quality. Three elements of the plan are likely to have considerable environmental impacts:

- I Completion of the Corridors 2020 Backbone and other approved major highway projects could impact sensitive land and water resources (such as wetlands, agricultural land and habitats), as well as promote economic development. In the process of developing and designing these projects, WisDOT will take special care to ensure that any undesirable impacts are minimized to the fullest extent possible.
- I The implementation of high speed rail will result in minor land use changes, some community impacts and slight fragmentation of habitat.
- Modernization of the Milwaukee Freeways will help improve air quality due to better traffic flow, facilitate maintenance and strengthening of the urban economy and job base, improve water quality, and may have positive community impacts.



**CHAPTER TWO TRANSLINKS 21:
SHAPING A 25-YEAR PLAN**

2

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WisDOT has completed a long-range planning process, called Translinks 21, that resulted in the development of a statewide intermodal transportation plan to facilitate the efficient and economic movement of people and goods in all areas of the state well into the 21st century.

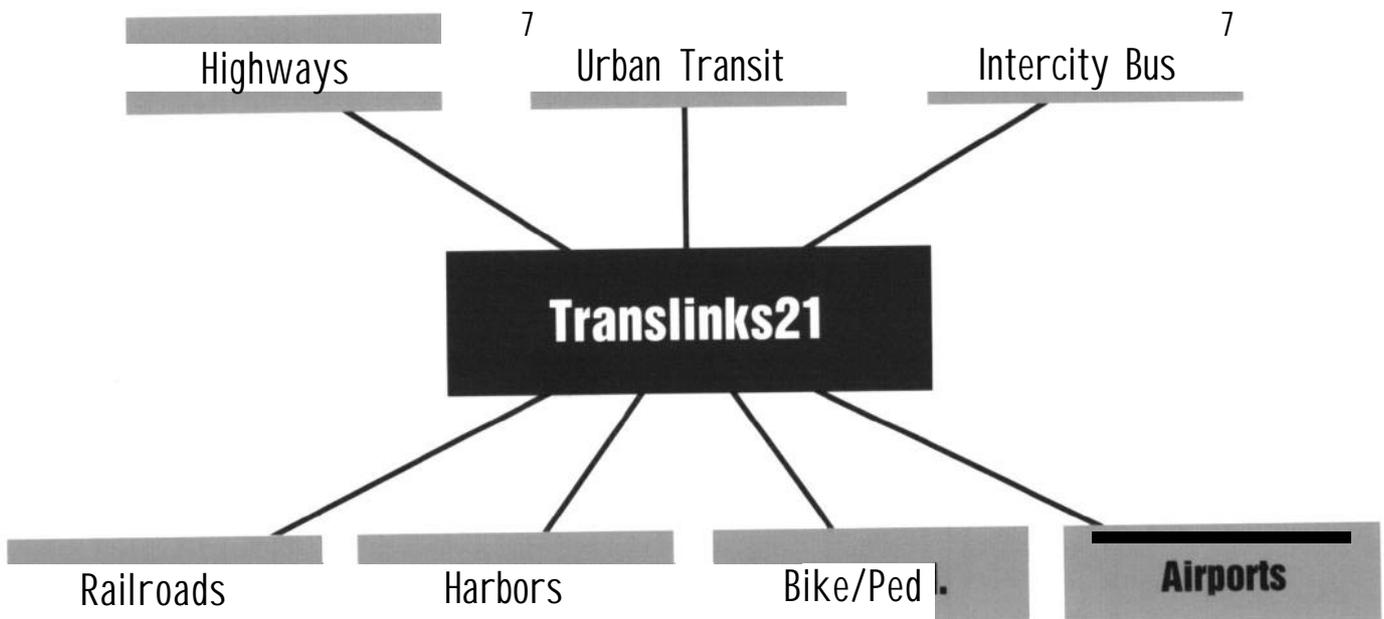
But shaping a comprehensive intermodal transportation plan is not as simple as deciding which highways to improve, which rail lines to extend, and which communities to serve with public transit. It involves a much more complex process of examining all mobility needs and all potential transportation options available to meet them - and then, bringing those factors together to shape a single, innovative and visionary transportation blueprint for the future.

Translinks 21 is different from any WisDOT plan of the past. What Translinks 21 provides is a broad umbrella - with a unified vision and set of goals throughout - from which individual modal plans for highways, airports, railroads, bikeways, harbors and transit will be shaped.

By planning within a broad framework, Translinks 21 can better identify how each mode functions and complements the others as part of a total, integrated transportation network.

The following components shaped the Translinks 21 process and helped bring together the adopted long-range plan detailed in this document. A section follows on:

- I Federal ISTEA requirements
- I Meeting the needs of a changing Wisconsin
- I Public involvement
 - Fundamental values
 - Metropolitan plans
- I Intercity modal forecasts
- I Pricing impacts on travel



FEDERAL ISTEA REQUIREMENTS

ISTEA requires the plan

The comprehensive, long-range plan that results from the Translinks 21 process is required by the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

But ISTEA says much more than “write a plan.” It outlines 23 specific and very detailed federal requirements governing how each state’s plan must be developed and what must be considered, ranging from highway needs and transit planning, to land use and environmental issues, to public involvement. WisDOT’s Translinks 21 plan fully meets all 23 of these federal requirements.

Additionally, ISTEA requires each state’s long-range transportation plan to be accompanied by six new management systems - designed to rationally, strategically and comprehensively document the investment needs on various elements of the transportation system over time. The six management systems are to address traffic congestion, public transportation, safety, pavement conditions, bridge conditions, and the intermodal linkages within the system.

Responding to the federal Clean Air Act

Eleven counties in eastern Wisconsin are designated by the U.S. Environmental Protection Agency as being in violation of federal air quality standards for ground-level ozone, a pollutant that causes respiratory problems. Evidence indicates that Wisconsin’s ozone problem results from a combination of pollutants that drift here from other parts of the eastern United States and those emitted locally from transportation, industrial and various other sources in the state.

Transportation is a significant but sharply declining contributor of ozone-forming emissions. In 1990, motor vehicles accounted for almost 40% of key emissions in Wisconsin’s most severely-polluted counties. Because of commitments already made to cleaner fuels and vehicles, that share will decline to approximately 23% by 1996, and is likely to account for between 15-20% of a much smaller emissions total by 2007 - the date by which Wisconsin’s most severely-affected counties must meet federal ozone standards under the Clean Air Act Amendments.

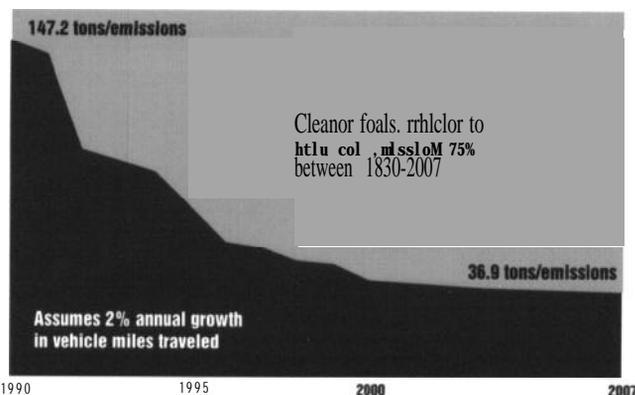
On a ton-per-day basis, motor vehicle emissions in southeastern Wisconsin will decline 75% between 1990 and 2007 as a result of controls - even with a projected 30% increase in travel.

What Translinks 21 does for air quality

Motor vehicle emissions are influenced by many factors. Among them are the pollution control equipment on cars, the fuel used, the amount of total travel, speeds and levels of congestion.

Recent analyses performed both in Wisconsin and nationwide indicate that technological changes affecting fuels and vehicles - such as emission controls, reformulated gasoline and improved inspection and maintenance - have the greatest potential to reduce emissions. Changes in traffic flow and overall levels of travel can also affect emissions, but less significantly and with greater expense and inconvenience - or both - than improvements to fuel and vehicle technology.

Current commitments will reduce VOC emissions in southeast Wisconsin 75%



Motor vehicle emissions in southeastern Wisconsin will decline 75% between 1990 and 2007 as a result of controls - even with a projected 30% increase in travel

Translinks 21 includes several strategies and activities that may affect emission levels, such as:

- I Improvements to transit, rail, bikeways and other alternatives to driving.
- I Transportation demand management, which may help curb travel growth.
- I Improved traffic flow resulting from the modernization of the Milwaukee Freeways, which will help reduce stop-and-start driving conditions.
- I Land use strategies, in cooperation with local governments and other agencies, that may lead to new development that is more easily served by multiple modes.

It is important to remember, however, that transportation system changes - such as increased investments in public transit or rail service - affect air quality marginally, while fuel and vehicle improvements provide the lion's share of emission reductions. In fact, largely because of improved fuel and vehicle technology, the total level of emissions coming from auto travel and transportation will be very small by the time Wisconsin meets federal air quality standards.

MEETING THE NEEDS OF A CHANGING WISCONSIN

New federal requirements, however, are just one reason for Translinks 21. As Wisconsin's population and economy grow, as technology changes, and as environmental priorities assume a new level of importance, Wisconsin's transportation plans and systems must be able to respond to the challenges of tomorrow -while also meeting traditional mobility goals.

In developing the intercity passenger and freight plans of Translinks 21, WisDOT developed comprehensive new models to identify and analyze travel patterns and investment needs across all modes of transportation. Forecasts of population, employment and income for the next 25 years provided key information to the travel models - making sure that our future transportation investments meet the needs of citizens and businesses as the state continues to grow and change.

Wisconsin's population will increase

According to statistics from the Wisconsin Department of Administration, the state's population totalled 5.02 million people in 1993. By 2020, this figure will reach 5.68 million residents - an increase of 13% during the 25-year Translinks 21 planning period.

Most of this population growth is expected to take place during the 1990s, with a 3.2% increase projected during 1995-2000. After that time, Wisconsin's population growth rate will gradually slow, with only a 1.3% increase between 2015-2020. With more people living in the state and needing to travel to more places, the demand for transportation will continue to rise - placing increased pressures on existing facilities, and calling for new facilities and services as well.

A major trend for the future will be the aging of Wisconsin's population, as the "baby boom" generation matures. The number of elderly Wisconsin residents (age 65 or older) is projected to grow by 52% during the next 25 years - or four times more than the general population rate increase. The population age 85 and older will show an even larger growth rate of 62%. These trends, which will bring the elderly portion of the population to 17% by the year 2020, will require increased investments in specialized transportation services in all parts of the state.

By 2020, Wisconsin's population will reach 5.66 million - an increase of 13% during the Translinks 21 planning period

Wisconsin's working age population - people age 18-64 who tend to drive the most - will peak in the year 2010 at 3.4 million residents, up from just under three million in 1990.

The geography of Wisconsin's population growth could also have a significant impact on transportation systems, policies and programs during the next two decades. In 1990, more than two-thirds of the state's population resided within metropolitan areas. This trend is expected to continue through 2020. Over half of Wisconsin's population growth during 1995-2020 is expected to occur in the five heavily-urban counties of Brown, Dane, Kenosha, Milwaukee and Waukesha, with other metropolitan and urbanized counties also forecasting growth. In contrast, rural areas of western and northern Wisconsin are projected to have very modest growth, and in some cases, may even experience losses in their population,

Growth In neighboring states could have an Impact

Population counts and forecasts for counties in Illinois, Iowa, Michigan and Minnesota were also obtained from official sources in each state as part of the Translinks 21 process.

Of particular interest, strong population growth - up to 55% over current levels by 2020 - is forecasted for suburban counties in the Twin Cities and Chicago metropolitan areas. This could have a notable impact on travel patterns to, from and through Wisconsin, given the growth in two-way interstate commuting travel and freight movements between the state and neighboring metro areas, and given the tourism appeal of Wisconsin for Minnesota and Illinois residents.

Wisconsin's economy, employment show bullish growth

For employment and income forecasts - both of which have a direct and significant impact on the demand for transportation - WisDOT developed county-level forecasts based on a number of key trends. Those trends include population and demographics, productivity and supply, government policy, monetary issues, inflation, consumption, real growth in the gross domestic product (or total output of the economy), oil prices and fixed business investment.

Overall, the forecasts indicate that Wisconsin's employment will increase by 46% through the year 2020 - from the current 2.4 million to 3.5 million workers. Employment in neighboring states is expected to increase as well, but at a slightly lower rate of 34%.

Service employment is expected to lead all other Wisconsin industries in job creation over the next 25 years, with a projected 48% increase. By 2020, the service sector will employ nearly one out of every three workers in the state. Manufacturing - long a mainstay of Wisconsin's economy - is also expected to remain strong, with the value of the state's total manufacturing output expected to increase 69.5% by 2020. Agricultural production value will also increase.

With more jobs and economic output, people will earn more in Wisconsin during the next 25 years, with total personal income expected to increase by an annual rate of just over 1% (as measured in constant dollars). It is apparent from both the employment and income forecasts that Wisconsin's economy and those of bordering states show expansions that are expected to continue. Those expansions will lead to more passenger travel and freight movements.

The number of Wisconsin residents age 65 or older is projected to grow by 52% during the next 25 years - or four times more than the general population rate increase. The population age 65 and older is projected to show an even larger rate of growth - 62%

Forecasts indicate that Wisconsin's employment will increase by 46% through 2020 - from the current 2.4 million to 3.5 million workers

In 1993, Wisconsin exports increased by nearly 11% over the previous record-setting year, totalling \$7.7 billion

Exports strengthen need for worldwide links

“Made in Wisconsin, USA” is a label that will be seen with increasing frequency by consumers and industries throughout the world, as exports continue to show impressive growth trends.

In 1993, Wisconsin exports jumped by nearly 11% over the previous record-setting year, totalling \$7.7 billion. Industrial machinery, computer equipment and transportation equipment accounted for most of the export sales in Wisconsin. While Canada and Mexico continue to be the state’s primary export markets, increasing sales are also being made to overseas markets in Japan, Saudi Arabia, Germany, France and Britain. Even Cameroon is “buying Wisconsin.”

With new international trade agreements such as GATT and NAFTA, and continued economic growth projected for Wisconsin, state exports can be expected to show more growth over the next 25 years, though specific estimates are not available. Exporting to world markets will call for even better and interconnected freight systems including highways, air, harbors and rail.

It all adds up to more travel...

Between 1970-1990, personal motor vehicle travel in Wisconsin increased 61% - driven by increases of 11% in the state’s population, 58% in the “high-mileage” group (people age 25-44 who tend to travel the most), 41% in employment and 111% in personal business trips.

The growth in vehicle travel is also attributable to a number of social, economic and demographic factors. For example, household sizes dipped sharply during the past 30 years, while the number of vehicles per household increased. Vehicle occupancy - an indicator of the amount of “drive alone” travel versus ridesharing - also declined. And as development continues to occur more frequently in suburban or outlying areas than in central cities in many parts of Wisconsin, trips can become longer and more numerous as destinations are dispersed. The increasing number of women entering the workforce over the past two decades has also been a key factor in vehicle travel growth.

Some important changes have also been taking place in terms of how people travel to work in Wisconsin’s urbanized areas. During the period from 1980-1990, the number of urban commuters driving to work alone increased 37.3%. At the same time, carpoolers declined by 31.8%, transit riders by 29.2%, and pedestrian and bicycle commuters by 26.2% and 17.2% respectively. Working at home was the only other category to show an increase, at 8.9%.

The reasons for these trends are numerous, including more dispersed housing and job sites as more development locates in the suburbs, the relatively low out-of-pocket costs of driving (particularly fuel and parking), and the need to have a car at work as more two-income families juggle the daily necessity of arranging daycare and grocery shopping as part of their commute.

...But travel growth rates will start to moderate

During the next 25 years, however, vehicle travel growth is expected to moderate, totalling 34% over current levels by 2020. This moderation in travel growth is projected due to a number of factors, including a 9% decline in the “high-mileage” age group, the near universal participation of women in the workforce, and vehicle occupancy rates that have bottomed out.

Vehicle travel growth is expected to be the highest in areas of more active population and economic growth, such as Dane County (43.5%), the Fox Valley (53%) and

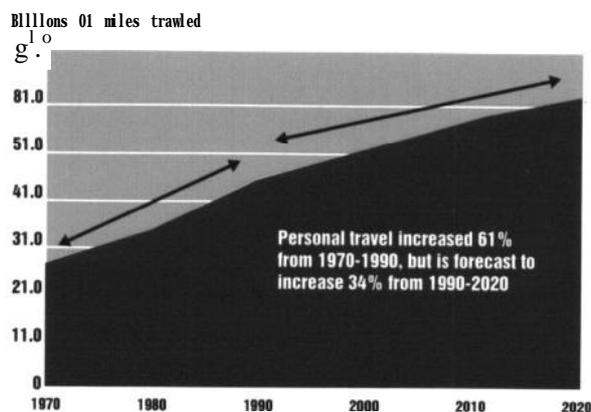
- During the next 25 years, vehicle travel growth is expected to moderate, totalling 34% over current levels by 2020
- Total passenger travel - comprising auto, air, transit and rail trips - is also expected to increase at about 24% during 1995-2020
- On the freight side, a 58% increase in commodity shipments across all modes of transportation is projected for the next 25 years

southeastern Wisconsin (39.3%), with lower rates of increase in rural areas of Wisconsin such as the northern and southwestern regions.

Total passenger travel - comprising auto, air, transit and rail trips - is also expected to increase at about 24% during 1995-2020. On the freight side, a 58% increase in commodity shipments across all modes of transportation is projected for the next 25 years. These statistics, revealed by WisDOT travel models, are detailed in "Intercity Modal Forecasts" section.

Emerging technological advances could also have an impact on travel growth in the future, as more people and businesses take advantage of the "information superhighway" to access destinations. For example, telecommuting - working from home or alternate worksites via computers - is becoming increasingly common and reducing or eliminating the need for some commute trips. Intelligent Transportation System technology - also known as "smart car, smart highway" systems - will also help improve traffic flow and safety in many areas.

Slower Mm travel growth forecast



PUBLIC INVOLVEMENT SHAPES THE PLAN

To guide and shape Translinks 21, WisDOT completed the most extensive, diverse and ambitious public outreach process in its history to ensure that future transportation plans meet the needs of our customers in Wisconsin - more than five million people who travel every day.

Translinks 21 was an unprecedented effort to identify, recognize and respond to the diverse and changing transportation needs of Wisconsin. Traditional groups were represented. But so were people who traditionally have not participated in the planning process, such as minority groups, the elderly and disabled, bicyclists and environmentalists. Dozens of meetings statewide provided people with an opportunity to share their opinions and needs with WisDOT. Overall, more than 10,000 Wisconsinites were involved in the Translinks 21 public outreach process.

Three-stage outreach process is the best approach

ISTEA calls for continuous, cooperative, open and ongoing public involvement initiatives that reach out to customers and give them an influential voice in the planning process before and while ideas are being developed - instead of asking for input after the decisions are made.

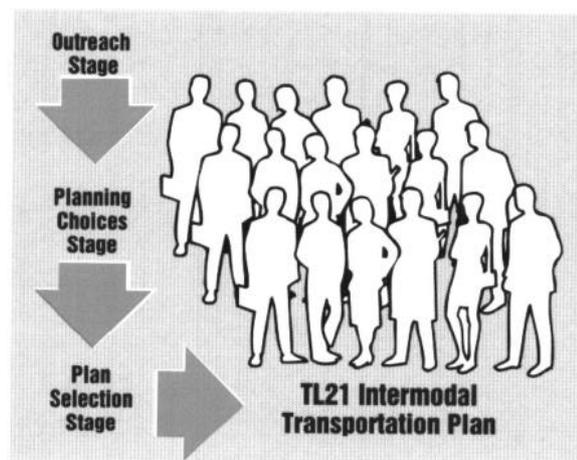
That's why WisDOT's public involvement process included three stages:

- Public outreach - to hear transportation priorities just as planning begins.
- Plan choices - to provide four plan alternatives and ask for public reaction.
- Plan selection - to test and solidify public acceptance of a draft plan.

Public outreach: WisDOT plays a "listener" role

The public outreach stage of Translinks 21 was completed between October 1993 and February 1994. During this stage, WisDOT provided the public and key stakeholders with basic information on the process, and then listened to their transportation needs and priorities.

3-Stage Public Involvement Process



The Translinks 21 public involvement process is among a handful of state planning efforts being highlighted by a Federal Highway Administration study of effective public outreach methods

Plan choices provided the public and key stakeholders with an opportunity to review and comment on the four alternatives

18 focus groups were used to obtain reactions from randomly-selected participants, including separate focus groups with African-Americans, Hispanic-Americans and Native Americans

Several tools were utilized to elicit input from the broadest possible range of customers. Regional information meetings were held in nine communities, seven peer review forums brought experts together to discuss specific transportation-related topics, a meeting was held with more than 40 key statewide organizations, expert panels discussed freight transportation issues, and dozens of newsletters, issue papers and modal papers were produced and circulated.

The public response was significant and valuable, with thousands of comments received and evaluated. For the most part, people and businesses voiced the need for high-quality and well-maintained highways statewide, complemented by attractive and convenient rail, transit, air and water transportation options. The elderly and disabled community was particularly active, expressing their need for more and better specialized transportation.

Plan choices: The time to react

With public input in hand, WisDOT developed four very detailed transportation alternatives for the future. The four alternatives attempted to address, in some form, the wide range of comments received during public outreach. Very briefly, the first alternative maintained current policies, programs and funding levels. Alternative #2 maintained current investment levels, but shifted money away from highway expansion to passenger rail and transit programs. Alternative #3 expanded transportation investments to finance better highways and more transportation choices, while Alternative #4 represented the most expensive option, providing the most high-quality transportation choices and services at a premium price through 2020.

A detailed explanation is available in the 101-page "Four Alternatives for our Transportation Future" and an accompanying 12-page newsletter. A video, used at all plan choices meetings and forums, was also developed to provide a more visual, concise view of the alternatives.

These four alternatives formed the basis for the plan choices stage of public involvement, completed between June and September of 1994. Plan choices provided the public and key stakeholders with an opportunity to review and comment on the four alternatives, and to share their preference through surveys for one alternative or a new "mix and match" combination.

Again, public involvement was intense and energetic, as WisDOT went to great lengths to publicize opportunities and actively seek out and invite citizen comments. Ten more regional information meetings were conducted as "open houses" for the public to learn about and react to the alternatives. Eighteen focus groups were used to obtain reactions from randomly-selected participants, including separate focus groups with African-Americans in central city Milwaukee, Hispanic-Americans in Racine and Kenosha, and Native Americans on the Oneida Reservation in northeastern Wisconsin. Involving elderly and disabled persons was also a high priority.

Further, WisDOT officials met one-on-one with 50 different organizations such as chambers of commerce, local government associations, community organizations, transit managers, rail passengers and highway industry leaders. Aggressive outreach took place through the media and WisDOT's eight transportation districts statewide, and with Legislators. And WisDOT's expert panels continued to help shape a 21st century freight transportation system, with the involvement of corporate presidents from Wisconsin Central Railroad and Schneider National Trucking.

People, businesses comment in great numbers

WisDOT received over 6,000 written comments and surveys in reaction to the four Translinks 21 alternatives. Public forums helped people feel confident that they were making a difference.

Not everyone who commented voiced a preference for a specific Translinks 21 alternative. But for those who specifically indicated a favorite, a majority favored Translinks Alternative #3, which increased funding and provided new investments in all modes of transportation.

Alternative #4, which would have provided still more for a premium system, ran a close second. Many cited the need for up-to-date transportation systems to attract industry, promote tourism and keep people on the move - and said they are willing to pay for this mobility.

For this majority of respondents, neither alternative #1 (which would maintain the current system) nor #2 (which would redirect 60% of current resources from highway construction to other modes of transportation) would adequately address the transportation needs of the future.

Plan selection: Taking the first step to 2020

With extensive planning data and public input on the four transportation alternatives in hand, WisDOT Secretary Charles Thompson unveiled a draft Translinks 21 plan in September 1994.

The draft plan - which called for \$38.9 billion in transportation investments over the next 25 years, or \$8.8 billion above current levels extended, plus inflation - was an "Alternative 3.75," responding to the strong interest of Wisconsinites in better transportation and more choices. Expanded investments in state highway rehabilitation, local road improvements, transit service, harbors, airports, bikeways, passenger and freight rail, walkways and specialized transportation services for elderly and disabled residents combined to form this exciting intermodal blueprint.

Then, during late September - early November of 1994, the public involvement process intensified for a third round, as WisDOT once again asked Wisconsin citizens, businesses and constituent groups to join in and help shape the planning process.

This last round of public involvement was perhaps the most critical step in the overall Translinks 21 planning process. It was the final opportunity for transportation customers to fine-tune the plan's proposals, identify any weaknesses, and solidify the state's confidence that the plan truly reflects the needs of the people and businesses who use transportation facilities and services.

Gather in for public opinion

To do the job right, WisDOT tapped several sources of information. First, the department contracted with UW-Parkside to scientifically measure public opinion on the major components of the draft plan. Second, a separate WisDOT survey was administered to more than 1,700 people who attended final round meetings on the draft plan, including two formal public hearings, 15 town informational meetings and dozens of forums with constituent groups and public officials.

A newsletter, lengthy plan document and video were also produced and widely distributed to provide the details on the draft plan as people drew conclusions and shared them with WisDOT. (Copies of the draft plan document are available from the WisDOT Office of Public Affairs.)

The plan selection stage was the final opportunity for transportation customers to fine-tune the plan's proposals, identify any weaknesses and solidify the state's confidence that the plan truly reflects the needs of the people and businesses who use transportation facilities and services





At these hearings and meetings in all corners of the state - which were heavily publicized to ensure that citizens were aware of and welcomed to take part in them - WisDOT also gathered oral and written testimony from hundreds of Wisconsinites as part of the official public hearing record. In addition, more than 100 people sent in letters detailing their views on the draft plan.

Again, the goal of this outreach effort was to make sure that the plan is the best possible fit for Wisconsin citizens, businesses and communities.

Public gives plan vote of confidence

Respondents to the UW-Parkside telephone survey overwhelmingly endorsed the Translinks 21 draft plan and its individual components, with two out of three voicing support and just one in six expressing opposition to the overall plan. The most clear-cut support respondents offered was for the Translinks 21 commitment to a quality highway system and a quality environment.

These survey results are important because they reflect the views of general citizens - people without detailed knowledge of transportation programs - as opposed to the committed and informed transportation stakeholders who are more likely to support the plan and its components.

The proposal to complete the Corridors 2020 highway improvement network by 2005 received an 81% approval rating, as an essential part of the state's 21st century transportation system. Also strongly endorsed were a continued commitment to rehabilitating the state highway system (84%) and improving local road systems (78%). Nearly two-thirds (65%) of respondents approved the reconstruction and modernization of the Milwaukee Freeway System.

At the same time, respondents gave high marks to WisDOT's strategies for continuing and enhancing its environmental protection efforts (83%) and its role in land use (72%).

Improved freight transportation also received high marks, with more than 60% of respondents favoring enhanced intermodal facilities and improved rail, water and air freight systems.

Respondents were less enthusiastic - but still positive - in their support for increased investments in alternative passenger transportation modes, with just under half of respondents expressing support for urban transit (44%) and passenger rail (47%). A slight majority favored expanded bicycle/pedestrian facilities (55%) and improved intercity bus service (53%).

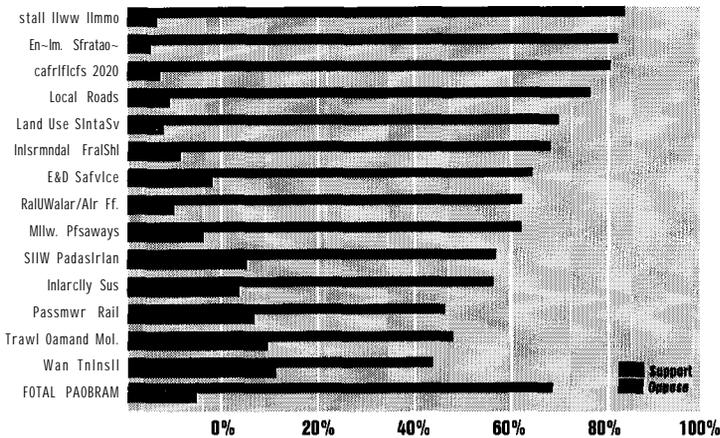
Specialized transportation services for elderly and disabled persons received the highest level of support among transportation alternatives, with a 67% approval rating in the survey.

Findings echoed at WisDOT meetings

During late September - early November, WisDOT took the draft plan on the road, holding dozens of informational town meetings for the public and forums for public officials and constituent groups. Two official public hearings were also held to gather testimony, and citizens were encouraged to send in written comments if they were unable to attend these meetings.

The survey resulted in a 4-to-1 margin in support among those expressing approval or disapproval

Survey shows public support for Translinks 21 plan



A secondary survey, devised and implemented at these meetings by WisDOT in partnership with an independent private consultant, found even stronger levels of support for all elements of the Translinks 21 draft plan among the 1,734 respondents who returned completed surveys.

Most of the attendees came to the table with a special interest in transportation, and with a stronger knowledge base than the public at large regarding general transportation issues and the Translinks 21 draft plan. For example, meetings were held with local public works directors, highway commissioners, transit operators, rail advocates, chambers of commerce, elderly and disabled groups, highway industry leaders, and others with a specific stake in transportation,

More than four out of five (86%) of these “transportation stakeholders” supported the draft plan. In fact, support for every single component of the draft plan was higher for this cross-section. Every element of the draft plan received support from at least half of the respondents.

The greatest difference between the general public and the stakeholders who attended Translinks 21 meetings was in the area of alternative passenger transportation modes:

I Urban transit initiatives received a 54% positive rating in the WisDOT survey, compared to 44% in the UW-Parkside survey.

I Passenger rail received 60% support, compared to 48% of the general public.

I Intercity bus services received slightly higher ratings of support as well (57% in the stakeholder survey vs. 54% for the statewide telephone survey).

These differences aside, the UW-Parkside and WisDOT surveys both came to the same basic conclusion, They confirmed that, because citizens and key constituent groups had been involved in shaping Translinks 21 consistently from the very beginning, the draft plan “got it right.” It did a good job of reflecting the goals and addressing the mobility needs of Wisconsin citizens.

Some modifications suggested, included

While support for the draft plan was very strong, citizens and local officials made some good suggestions for fine-tuning the plan. Many of those changes are reflected in the final Translinks 21 plan adopted by Secretary Thompson on November 17, 1994, and are detailed in this report.

In general, the plan modifications came in areas such as developing stronger partnerships to implement and fund regional transit, providing state financial support for local land use-transportation planning, clarifying the state’s commitment to help fund major commuter rail and light rail studies, conducting a needs assessment on local roads, and involving metropolitan Milwaukee area citizens actively in the modernization and reconstruction of their freeways.

Modifications added about \$100 million to the overall cost of the Translinks 21 plan, but did not significantly change its basic components, structure or financial implications for highway users,

Public must stay involved

With a 2.5-year transportation plan now adopted, the public’s role is far from over.

The Translinks 21 plan must now be carefully reviewed and evaluated by the Governor and State Legislature, and it must be implemented - in steps - through successive biennial budgets. For the adopted Translinks 21 plan to become a reality - as envisioned by the citizens of Wisconsin - public support must continually mobilize.

Of those who completed surveys at town meetings and public hearings, four out of five supported the draft plan

Modifications added about \$100 million to the overall cost of the Translinks 21 plan, but did not significantly change its basic components, structure or financial implications for highway users

And as the plan is periodically amended over the next 25 years to reflect changes in technology, the economy and mobility needs, WisDOT will once again ask for public input to make sure the plan continues to provide the right solutions.

FUNDAMENTAL VALUES: PROVIDING THE SOLID FOUNDATION

Five fundamental values guide Translinks 21

There are some things we all consider so important, so fundamental to who we are and what we're about, that they serve as our basic, guiding principles. Those fundamental values are part of us - how we think, how we act, and how we live our lives every day.

These fundamental values aren't things like deciding whether to drive from one store to another to save a few dollars or whether to rent the apartment on First Street or Fourth Street. Instead, these are the much more basic principles that guide us - taking care of our families, obeying the law, voting on election day, or giving to charity because it's the right thing to do.

Translinks 21 is guided by fundamental values, too, because planning and providing transportation facilities and services are tremendous responsibilities. As a neighbor in every Wisconsin community, transportation touches every part of daily life - from going to school, work and the store, to visiting family and friends, to just getting away for vacation or leisure time.

The five fundamental values of Translinks 21 are:

- Mobility for people and products and choice among modes should be provided.
- I Partnerships for community development should be cultivated.
- I Transportation investments should be cost-effective and balanced.
- I Wisconsin's environmental assets should be respected by transportation.
- I Economic development should be promoted.

These values are not just ivory-tower notions. They reflect the hopes and concerns that were voiced by thousands of Wisconsin citizens, business leaders and elected officials during the public outreach phase of Translinks 21. Again and again, Wisconsinites asserted that their quality of life depends on the ability of transportation to respond to these basic values by providing safe, efficient, available, affordable and environmentally-responsible mobility.

As each element of the Translinks 21 plan was developed, WisDOT considered how it would encompass and address these five fundamental values. Only proposals that reflected at least one of these values became part of the adopted plan.

Fundamental value: Providing mobility and choice

Mobility - moving people and products from point A to point B - is, in essence, the basic definition of transportation. And choice - the ability to get from point A to point B by more than one travel mode - is what turns transportation into a multimodal transportation system,

But how much mobility is the state responsible for providing? How much choice is feasible and cost-effective? These questions are central to Translinks 21, so the fundamental values surrounding mobility and choice are important to understand.

Translinks 21 values mobility that serves the broad array of customer needs across the state. For the vast majority of customers, this means providing mobility over the road. Virtually all short-range rural trips, more than 90% of urban trips, and about 90%

Translinks 21 Fundamental values:

- Mobility and Choice
- Partnerships for Community Development
- Investment Cost-Effectiveness
- Environmental Responsibility
- Economic Development



of all long-range trips are made in private motor vehicles. In addition, more than 50% of commercial traffic is carried by trucks.

However, many people in Wisconsin cannot or choose not to drive. For them, providing mobility means providing reasonable access to both urban and intercity public transportation and specialized transportation for the elderly and disabled. And for businesses that need access to other transportation modes that more economically carry their raw materials to production and finished products to market, providing mobility means providing access to other freight modes.

Because some people and businesses need different mobility options, Translinks 21 also values the provision of more than a single mobility option where it is feasible and effective. Where productive, the opportunity for automobile travel should be supplemented by the opportunity to use air, rail, or bus travel, either for intercity or urban trips. Similarly, where it is feasible and effective, shippers should also enjoy more than one mode of transportation for moving materials and finished products.

Mobility, choice key to economy, quality of life

Wisconsinites, as the comments received during Translinks 21's public involvement process indicate, expect quite a bit from their mobility. They want convenience, flexibility, safety, comfort, reasonable travel times, and an easy path from here to there. And they're willing to pay for it. The cost of transportation comprises nearly 20% of the average household budget, and no trends indicate that this rate - or the value we place on mobility - will change.

Mobility is central to our high quality of life in Wisconsin. Mobility connects people to jobs and to each other. It connects businesses to their customers, suppliers and markets. And in an era of increasing worldwide competition, mobility is increasingly critical. The demands of "just-in-time" manufacturing processes call for rapid, timely, reliable mobility options.

Of course, transportation is not necessarily the only means to mobility. Our ability to gain access to the world without leaving home or office is expanding, thanks to technology such as teleconferencing and shopping by phone. However, the predominant means of mobility will continue to be transportation for the foreseeable future.

Choice offers similar benefits. For companies shipping products over very long distances or overseas, having access to more than one mode of transportation is the key to competitiveness.

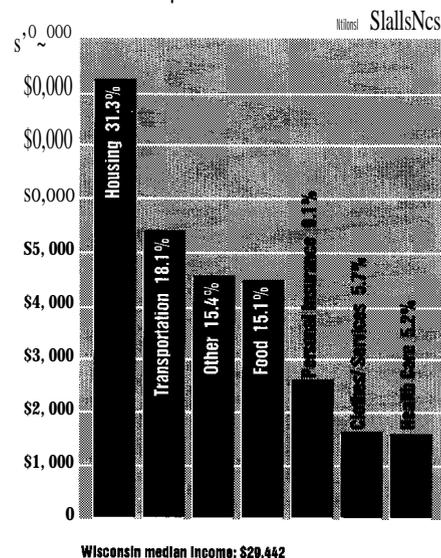
Choice promotes marketplace competition in transportation, resulting in lower transportation rates, better service and more options for businesses and travelers alike.

Choice also provides the ability for WisDOT to alleviate some of the indirect costs of mobility. For example, urban freeways provide enormous mobility benefits. But at the same time, they separate our neighborhoods, consume land, and make it easier to create outlying developments. Choice can shift some travel to less costly modes, and make more efficient use of the existing transportation system before adding new highway capacity.

While choice can be used to influence how mobility needs are served, WisDOT does not - in any way - seek to use choice to set up barriers to mobility. The department may work to make non-driving modes more attractive and may provide incentives encouraging people and companies to voluntarily change their travel behavior. But Wisconsinites clearly reject the idea of taxing auto travel to the point where it is not affordable or realistic. That would violate the public's expectation of freedom and choice.

Virtually all short-range rural trips, more than 90% of urban trips and about 90% of all long-range trips are made in private motor vehicles. In addition, more than 50% of commercial traffic is carried by trucks

Transportation second highest household expense



Where productive, auto travel should be supplemented by the opportunity to use air, rail or bus travel, either for intercity or urban trips. Where feasible and effective, shippers should also enjoy more than one mode of transportation for moving materials and finished products

Providing mobility and choice

To foster mobility and choice in transportation, WisDOT can pursue several activities.

I Preserve and expand the state highway network, where necessary, to serve the vast majority of travelers who use roads as their primary means of mobility.

- Provide public transportation, where necessary, to ensure a basic level of mobility across the state, as well as specialized transportation to give elderly and disabled citizens access to the world around them.

I Provide more transportation mode choices where feasible and effective to promote market competition among and between modes.

- Make non-driving modes more attractive and provide incentives that encourage the voluntary use of modal choices where they make sense.



Fundamental value: Cultivating partnerships for community development

Transportation is just one of the many factors influencing community development, but it is a very important one. The ability of a community to attract new development, for example, depends in part on whether its transportation facilities can meet new development needs.

WisDOT has a long-standing partnership with regional and local governments to provide transportation facilities and services. This partnership has involved extensive state funding of local highway improvements, a large state contribution to local transit operating costs, as well as property tax relief in the form of General Transportation Aids. Significant state resources are also provided to support alternative transportation modes through demand management grants, congestion mitigation and air quality improvement projects, and bicycle and pedestrian facilities. Through the investment of state transportation revenues, local communities have had the resources necessary to achieve their development goals.

Because transportation and community development are so strongly linked, Translinks 21 values the cultivation of strong partnerships for community development. These partnerships are strongly encouraged by ISTEA to ensure coordination between transportation and community planning for the mutual benefit of communities and local transportation providers.

What are partnerships for community development? They are any of a variety of partnerships formed between public sector entities, private sector groups, or a mix of each, that work toward two goals: 1) Shaping the development patterns and character of communities, and 2) Producing positive changes in the community. These partnerships can involve local planning commissions, elected officials, real estate developers, lending institutions, utility/service/infrastructure providers (including WisDOT), community service organizations (such as downtown redevelopment corporations and chambers of commerce) and others.

It should be noted that, while transportation can and should play a role in community development partnerships, it should not be the central or deciding factor in shaping communities. After all, communities are dynamic entities, continuously evolving in response to many changing factors, including development patterns, resource availability, quality of life features (educational systems, recreational amenities, etc), economic factors and demographic patterns. They are also shaped by changes in neighboring communities and the surrounding region.

State-local partnerships are strongly encouraged by ISTEA to ensure coordination between transportation and community planning for the mutual benefit of communities and local transportation providers

In short, partnerships for community development must be two-way streets - both WisDOT and the other groups involved must be committed to an open and cooperative process that works toward achieving some benefits for all parties. Neither WisDOT's fundamental values, nor the fundamental values of other groups, should have to be sacrificed to make the partnerships work.

The importance of partnerships

Partnerships for community development have the potential to greatly strengthen the positive interaction between transportation and community development goals. For one, these partnerships can help ensure that transportation serves the development objectives of communities. When local governments define their development goals, WisDOT can target transportation investments to meet and enhance these objectives. For many years, enhancing local growth goals has been a main focus of WisDOT-local investment partnerships, but there is still room for improving the connection between state investments and local development goals, particularly in the area of multimodal transportation investments.

Partnerships for community development also allow WisDOT to function as a good steward of public resources allocated for transportation. Being a good steward of public resources means using them efficiently and equitably. It also means working to ensure that investments are protected and continue to function as efficiently as possible over time.

The more predictable local development decision making becomes, the better position WisDOT will be in to make efficient, effective transportation investments in all parts of the state. Community development partnerships can strengthen WisDOT's ability to do this.

Finally, partnerships for community development can help address three common planning coordination and implementation challenges WisDOT often faces:

- **The absence of an up-to-date, locally-adopted land use plan or comprehensive plan that lays out a community's future development goals.** This forces WisDOT to rely solely on travel trends to forecast the future transportation needs of communities.
- **Inconsistencies between an adopted local land use or comprehensive plan, and a community's actual development approval decisions.** Transportation investments, planned or built to serve an adopted local plan that is not implemented, may not meet the actual needs of the area, resulting in transportation problems and potentially inefficient investments.
- **Inadequate consideration of what transportation impacts might result from development plans and decisions.** With better integration between local development decisions and transportation planning, WisDOT can make its transportation investments more efficient.

Making partnerships for community development work for transportation

WisDOT can cultivate partnerships for community development in several ways.

- **Seek state-local investment partnerships** supporting projects that serve local development objectives and state transportation objectives.
- **Provide financial assistance programs** to aid local planning and/or plan implementation.
- **Provide technical assistance programs** to help communities in their community development and/or transportation planning processes.

Community development partnerships must be two-way streets - a commitment by all parties to an open and cooperative process that works toward achieving some benefits for all of them

Common obstacles to state-local planning:

- No current local land use plan
- Inconsistent development vs. land use plan
- Inadequate consideration of development's impact on transportation

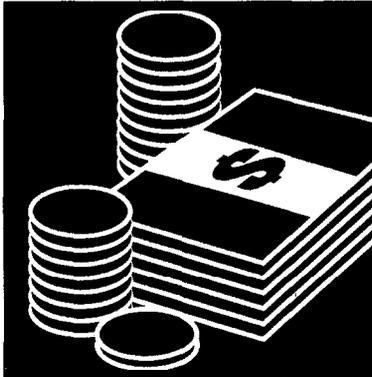


I Provide educational programs on the benefits of multimodal transportation and how community-wide and site-specific land use decisions support efficient use of multiple modes.

Coordinate with MPOs and local governments on state-regional-local land use and transportation planning processes.

I Expand facility planning and design efforts to include local governments and adjacent land users in the planning and design of WisDOT facilities, to help make those facilities “better neighbors.”

I Participate in intergovernmental agreements to address land development and transportation concerns in major transportation corridors.



Fundamental value: Making cost-effective and balanced investment decisions

In many ways, each fundamental value discussed in this chapter is an investment criterion. Translinks 21 considers and balances each of these values in determining where to dedicate transportation resources. But whether an investment’s main goal is to promote mobility, preserve the environment or enhance economic development, the people of Wisconsin expect all investments will be cost-effective uses of public funds.

Translinks 21 values cost-effective investments - transportation investments which ensure that the benefits equal or exceed the costs. This can be measured in several ways, including how well a transportation investment addresses certain needs, and whether a lower-cost option or combination of options could do the job just as well. Other important factors WisDOT must consider include impacts on economic development, land use, safety, the natural environment and energy. These factors need to be part of the equation in determining wise investments.

In choosing among cost-effective transportation investment possibilities, a second fundamental investment value emerges: Balance. **Translinks 21 values balanced transportation investments that provide benefits in relation to the number of users who will benefit and the amount people are asked to pay.**

Balance is keenly valued by citizens. Throughout the Translinks 21 process, Wisconsinites voiced strong support for “user fees” - where people pay as they go to use the system through fees and fares. They also said they want public dollars to be focused toward priorities, and fewer resources to be dedicated to areas where use is not likely to be high. This is where the fundamental values of cost-effectiveness and balance converge. A given investment is more likely to be cost-effective when a large number of users will benefit, whether it is a highway, rail or transit investment. No mode is inherently more cost-effective than another.

Taxpayers expect good stewardship

Throughout this chapter, it has been noted that WisDOT is expected by Wisconsin taxpayers to be a good steward of public resources. Cost-effectiveness is central to good stewardship. As a result, WisDOT expects transportation investments to be useful and productive - period.

Making wise investments

WisDOT can use many methods to measure the cost-effectiveness and balance of all potential transportation investments. These methods include benefit/cost (including life-cycle cost) analyses, safety evaluations, transportation planning travel demand models (urban and intercity), State Highway Plan Deficiency analyses, economic impact analyses, and modal usage surveys.

Whether the goal is to enhance mobility, the economy or the environment, Wisconsinites expect all investments to be cost-effective

- I While each individual investment analysis will have unique results based on the consideration of all five fundamental values, the following generalizations can be made about the cost effectiveness of various transportation investments:
- I Investments in automobile mobility that can lead to more “time efficient” travel can be highly cost-effective depending on the number of users, relative to costs.
- I The cost-effectiveness of investments in transit service efficiency will be based on how many people are served, the impact on highway needs and whether ridership criteria are met. At the very least, transit dependent people need to be served. The social benefit of providing service to the transit dependent should be included in the cost-effectiveness analysis.
- I Bicycle accommodation cost-effectiveness depends on the number of potential users of bicycle facilities, but these accommodation costs can be minimized when programmed and constructed with larger highway/street improvements.
- I Since trips using all modes are combined with walking to some degree, the cost-effectiveness of pedestrian improvements will be high, especially near major generators where pedestrian traffic is significant.
- I Transportation demand management measures that reduce highway congestion can have great cost-effectiveness potential since they are low-cost programs. However, it depends on the number of people who will use the programs.
- I Intercity bus cost-effectiveness may be high if adequate ridership is maintained because this is a relatively low-cost way of providing intercity transportation,
- I High speed rail, because of its high cost, will be cost-effective mainly in densely developed corridors where more people will use the service.
- I The cost-effectiveness of intercity rail will depend on the number of users. Notably, conventional passenger rail upgrades offers benefits to freight rail operations as well, by safely accommodating higher speed traffic.
- I Air transportation investments can have high cost-effectiveness, particularly at high-use airports. It should be noted that the benefits of air transportation improvements go beyond direct users of air service, because community access and status is enhanced with improvements to or expansions of air service.

Fundamental value: Environmental responsibility

Good transportation and a healthy environment are both highly valued by Wisconsin citizens. Both contribute significantly to economic health and a good quality of life - and as a result, both are generally expected by the public.

Transportation, like all human activities, affects the environment. The production of fuels and vehicles, construction and maintenance of infrastructure, operation of various modes and disposal of remnants from those processes inherently affect our land, water and air.

Environmental protection is essentially risk management: State and federal regulations limit human exposure to certain substances where evidence indicates there is a health risk, and other rules limit disruption of the environment where the ecology faces danger. While much debate occurs over acceptable levels of risk and the strength of available evidence, WisDOT suggests concentrating environmental protection efforts where the risks are greatest and most certain.

Over the past quarter century, environmental regulation has matured in the United States and now touches almost every significant transportation investment. The National Environmental Policy Act and Wisconsin Environmental Policy Act establish



procedures that must be followed to consider environmental effects of proposed legislation. Other federal and state laws - such as the Clean Air, Clean Water, Endangered Species, Coastal Zone Acts and others - also establish clear standards that must be met when transportation projects are implemented.

Existing environmental regulations apply largely in areas of land, water and air resources: Protecting wetlands and habitat, regulating disposal practices and clean-up, limiting emissions to the atmosphere and many others. Balancing these issues in the consideration of a proposed project as decisions are made is complex, and practices have evolved over many years that are well-established and subject to periodic revisions.

Increasingly, however, there is public concern for the potential impacts of transportation on society, communities and the economy - in areas such as noise, land use impacts and the separation of neighborhoods. There is generally neither regulation nor guidance regarding mitigation measures in these areas.

WisDOT works actively with state and federal legislators and government agencies to inform debate over environmental regulations that will impact transportation - to ensure that environmental needs are met in the most cost-effective way and with reasonable impacts on mobility. Once environmental regulations are in place, WisDOT programs comply with requirements and sometimes exceed them for good reasons.

An environmental role for WisDOT

WisDOT is entrusted with ensuring adequate transportation for people and goods in and through Wisconsin, by providing and supporting appropriate infrastructure and transportation services.

The provision of high quality transportation - safe, efficient, diverse and well-connected - is the department's primary responsibility. The manner in which WisDOT meets that responsibility affects the environment, communities and other aspects of Wisconsin life. The department's stewardship extends to respecting these assets as it carries out its work.

WisDOT adheres to the following principles with respect to the environment:

- WisDOT strives to protect the environment by **minimizing the impacts** of transportation - and **mitigating those impacts that cannot be avoided**.
- I WisDOT **looks to environmental protection laws and regulations as the principal benchmarks** for appropriate treatment of environmental matters.
- I WisDOT **complies** with all federal and state environmental requirements, and addresses other environmental issues in response to public expectations or in recognition of their potential importance in delivering transportation services,
- I WisDOT **provides objective information and analysis in the public debate** regarding environmental initiatives where they are likely to affect the quality or cost of providing transportation.
- I WisDOT generally suggests that new or revised environmental regulations affecting transportation **concentrate protection efforts where risks are greatest and most certain**.
- I WisDOT considers **environmental protection** as an important component of key decisions. Considerations of environment, economy and community all figure prominently in WisDOT's decisions about transportation investments.
- I WisDOT **informs the public** regarding potential identifiable environmental impacts of its actions, and engages the public in consideration of costs and trade-offs before making decisions.

WisDOT actively works to ensure that environmental needs are met in the most cost-effective way and with reasonable impacts on mobility

Providing high-quality transportation - safe, efficient, diverse and well-connected - is WisDOT's primary responsibility. The manner in which the department meets that responsibility affects the environment, communities and other aspects of Wisconsin life

WisDOT investment decisions reflect **consideration of direct and indirect benefits and costs**, including those related to the environment.

Fundamental value: Promoting economic development

Economic development, in simple terms, is the process by which the income generated in a region is increased. Income can be increased through expansion of existing regional resources or by increasing the efficiency in which those resources are used.

Economic development has been a top priority in Wisconsin for years, and **Translinks 21 places a high value on enhancing economic development across the state.**

The strong link between transportation and economic development has long been recognized by transportation experts and economists alike. The relationship works as follows: As Wisconsin's economy continues to expand and evolve, demands on the state's transportation system increase. Those demands - whether for increased system capacity, added access or improved maintenance - trigger the need for transportation improvements. These improvements can result in lower transportation costs to businesses - which may in turn stimulate further economic development.

In short, prudent transportation investments enhance economic development opportunities, and a growing economy produces additional demand for transportation,

The list of costs that transportation can reduce is impressive:

I Safety can be enhanced, reducing accident and insurance costs.

■ **Travel time** - and costs - can be reduced for people and goods,

Production costs can be lowered, particularly in just-in-time manufacturing, where on-time shipments keep inventories low and productivity high.

I Fuel and other vehicle operating costs can be cut when conditions are smooth and the most efficient mode(s) are used.

I Market competition among and between modes can cut transport rates.

I Logistic patterns can be improved, resulting in efficiencies,

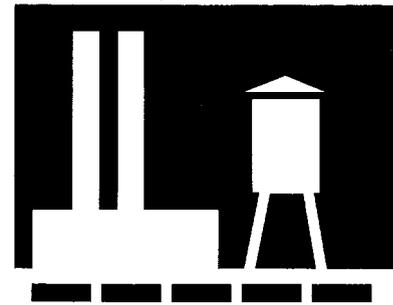
These cost reductions are only possible when communities, businesses and individuals have access to a first-rate transportation system. Quality system access is the key that starts the economic development engines running. Without that key, Wisconsin communities, businesses and individuals simply cannot compete in state, regional and global markets. Transportation costs are infinite for those without access to the system, and substandard access limits development in areas which otherwise have strong economic development potential.

Enhancing economic development through transportation investments involves a delicate balancing act. Among those resources that promote a region's economic competitiveness are its social and environmental assets. A transportation improvement that addresses an economic development need may result in no net benefit if it works to the detriment of the environment. As a result, using transportation to enhance economic development must consider not just the impacts on transportation, but the impacts on all aspects of competitiveness as well.

People and companies reap the benefits

A strong economic development agenda fosters a positive climate for business, allowing them to compete more effectively with out-of-state competitors and expand.

For citizens, economic development means more jobs, a better quality of life and lower prices for consumer goods. With population levels growing each year, job creation is becoming an increasing priority statewide,



Prudent transportation investments enhance economic development opportunities - and a growing economy produces additional demand for transportation

Economic development also offers many indirect benefits to citizens. With new and expanded business comes vital support for our schools and universities, hospitals and health systems, services and infrastructure.

Using transportation as an economic development tool

Transportation can enhance economic development in several ways.

- I Preserve and enhance the highway infrastructure** to ensure safe, efficient transportation access. This is a top priority because most trips are run over the road, and nearly all modes require highways or local roads to complete a trip.
- I Provide and sustain easy access** between workers and jobs, including quality highways and public transportation.
- I Improve the infrastructure and respond to changing business needs** in support of job creation/retention, business competitiveness and lower transportation bills.
- I Improve intermodal connectivity** so the efficiencies of individual modes can be better utilized.
- I Improve transportation choices** to promote modal competition, lower transportation costs and improve efficiency.
- I In coordination with communities, provide or enhance local access** to evolving regional, national and world transportation networks.
- I Use emerging technologies** to increase transportation efficiencies, safety, reliability, choice, environmental responsibility and connectivity.
- I Ensure that transportation preserves Wisconsin's environmental assets** that enhance economic development potential statewide.

METROPOLITAN PLANS

MPO plans a critical part of TransLinks 21



The federal ISTEA legislation significantly expands the transportation planning responsibilities of Metropolitan Planning Organizations (MPOs), as well as state DOTs. MPOs are public bodies that represent urbanized areas over 50,000 population. In Wisconsin, eleven MPOs represent fourteen metropolitan areas (Kenosha, Racine and Milwaukee are jointly represented by the Southeastern Wisconsin Regional Planning Commission. Appleton and Oshkosh are also jointly represented, by the East Central Wisconsin Regional Planning Commission).

Under federal law, each MPO is responsible for developing a long-range transportation plan for its area. These plans are to be developed in cooperation with the state and affected public transit operators, taking public input and review into close consideration.

Forging strong State-MPD partnerships

As noted above, ISTEA has helped forge a new and productive transportation planning partnership between WisDOT and MPOs. Through this partnership, WisDOT is responsible for statewide (primarily intercity) planning, while MPOs handle urban transportation planning.

As a result, neither WisDOT nor the MPO plan is by itself a whole. Statewide intercity plans are only of limited value, unless they are coordinated with complementary MPO urban plans. Similarly, urban vitality depends on the opportunity for businesses and people to efficiently access other communities, as well as national and international destinations,

WisDOT actively works with and supports MPO planning in many ways. Federal and state planning funds pay for most MPO costs. WisDOT is active on MPO advisory and technical committees, to help forge MPO plans that blend well with statewide plans and suit community objectives. And WisDOT provides multimodal travel forecasts and other technical assistance.

WisDOT also continues to work with MPOs to assist in the preparation of their long-range plans by defining “guidelines” for various plan components. The guidelines are designed to help ensure that MPO plans comply with ISTEA requirements and are consistent across metropolitan areas so that they can be easily coordinated with the overall statewide transportation plan.

WisDOT has prepared eleven MPO guidance documents to date. These guidance documents cover the full range of MPO planning needs and requirements, including long-range plan updates, needs assessments, environmental evaluations, TIP and financial plans, bicycle/pedestrian facilities, environmental evaluations and public participation.

A series of interim multimodal performance measures have also been developed by WisDOT to be used in evaluating how well the urban transportation system meets established goals and objectives. These interim measures are being tested in several MPO planning processes.

Perhaps the most important element of the WisDOT-MPO partnership may be found in the complementary content of the plans themselves. State objectives for urban transportation - which are significant and growing - will be realized only if MPO plans are sensitive to them and act to implement them. Similarly, MPO plans, for the most part, can be implemented only with a very substantial state helping hand. The urban elements of Translinks 21 - urban highways, transit initiatives, expanded assistance for elderly and disabled transportation, demand management and bicycle and pedestrian facilities - are critical for implementing MPO plans.

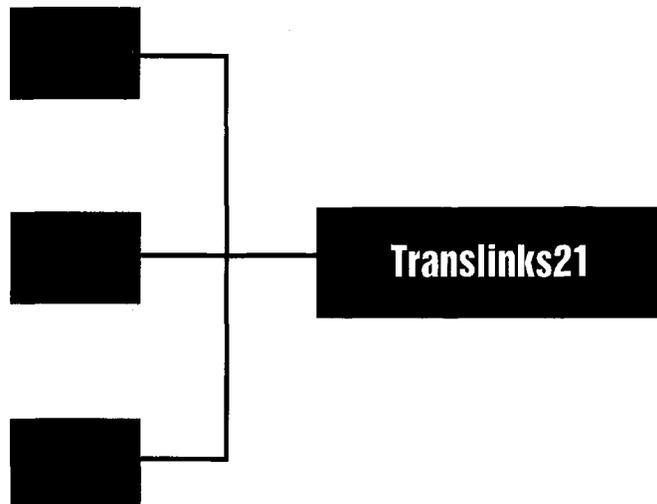
MPO planning requirements

ISTEA provides a new multimodal focus to metropolitan planning by emphasizing the evaluation of alternatives to drive-alone auto travel. Once a new, comprehensive, long-range metropolitan transportation plan is adopted, it must be updated every three years in areas that violate federal air quality standards, and every five years in other areas.

Each MPO annually develops a three-year list of projects that will be scheduled for funding, called a Transportation Improvement Program (TIP). The projects in the TIP must be consistent with the MPO’s long-range plan. Also, the TIP must be reviewed by WisDOT and approved by the WisDOT Secretary (as the Governor’s designee).

The MPO planning process must address many specific issues, including: land use, connections between modes, highway needs, transit service, congestion relief, pavement needs, safety needs, bicycle/pedestrian facilities and environmental and social impacts. The MPO plan, and the annual Transportation Improvement Programs produced from it, must be financially feasible.

Finally, MPO plans - which focus on detailed metro area improvements - are incorporated and synthesized with WisDOT’s intercity plan to form the comprehensive, statewide blueprint. This Translinks 21 plan incorporates much of the “Regional Transportation Plan for Southeast Wisconsin: 2010” as developed by SEWRPC. Future



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Among the issues to be addressed by the MPO planning process:

Among the issues to be addressed by the MPO planning process:

- Land use
- Connections between modes
- Highway needs
- Transit service
- Congestion relief
- Pavement needs
- Safety needs
- Bicycle/pedestrian facilities
- Environmental/social impacts

amendments to the Translinks 21 plan will incorporate relevant portions of other metropolitan transportation plans as they are completed.

MPO planning status report

As referenced immediately above, the Southeastern Wisconsin Regional Planning Commission has completed its comprehensive long-range plan update (“Regional Transportation Plan for Southeast Wisconsin: 2010”). Comprehensive long-range metropolitan plans are expected to be completed by mid-1995 for the Sheboygan, Superior and Wausau metropolitan areas. These will be followed in late 1995 by plans for the Appleton, Beloit, Green Bay (Brown County), Janesville and Oshkosh metropolitan areas. Comprehensive transportation plans for Eau Claire, La Crosse and Madison (Dane County) are expected to be completed in 1996.

In many of the metropolitan areas, interim plans were developed to meet the 1994 federal deadlines established in ISTEA. However, all metropolitan areas have completed bicycle and pedestrian transportation plan components, which are also required by ISTEA.

INTERCITY MODAL FORECASTS

In developing a long-range, intermodal transportation plan for Wisconsin, Translinks 21 developed and relied on comprehensive new multimodal models to analyze travel and investment needs - and to make sure that the initiatives included in the plan responded to Wisconsin realities.

Specifically, these travel models analyzed and forecasted intercity movements of people and goods via all modes of transportation - highways, airports, rail, harbors and transit - and how those travel modes work together as part of an intermodal system. The level of detail used to shape these models, and their ability to forecast future travel, are both unprecedented.

For passenger travel, the model analyzed how the transportation improvements in Translinks 21 will affect mobility and investment needs when compared with the current transportation system continued. How many people will choose to take new high speed rail instead of driving, and how this will affect the need to invest in Wisconsin’s highway system, is one model example.

On the freight side, WisDOT’s models looked at current commodity shipments via all transportation modes on a detailed county-by county basis, and then forecasted how goods would move in the future based on industry trends and Translinks 21 initiatives. The Freight Expert Panel, comprised of private sector transportation leaders and experts from throughout the state, helped shape and analyze the modelling results, providing “real world” experience and input.

Models are one part of a big picture

A key finding of the Translinks 21 intercity passenger and freight models is that in virtually every case, providing new or improved transportation alternatives does relatively little in terms of reducing forecasted intercity automobile and truck traffic growth.

This fact points to the need for a continued, strong and growing highway investment program in Wisconsin. Automobiles carry more than 99% of all intercity passenger trips made in Wisconsin today, and will continue to carry the vast majority of trips in 2020, even with the ambitious investment program for alternative modes included in Translinks 21. The findings are similar on the freight side, where trucks will continue to

Travel models analyzed and forecasted Intercity movements of people and goods via all modes - highways, airports, rail, harbors and transit - and how they work together as part of an Intermodal system



be a dominant mode. As a result, a high-quality intercity highway network is absolutely vital for mobility and commerce.

But travel models, while they are an essential tool for charting an appropriate transportation investment strategy, are one part of a broader mobility picture. The models consider only tangible, immediately visible factors such as how many people ride a bus or how many cars pass a point on the highway. But transportation must do more than just move people and vehicles.

Translinks 21 also places a high value on other “intangible” benefits of transportation, such as connecting people without automobile access to jobs, services and medical appointments, or the benefits of providing travelers and shippers with more viable choices. While non-auto modes do little, in most cases, to reduce auto travel or the need for highway investments, they do offer key social, environmental and economic benefits not revealed through travel models that justify appropriate investments in them. Those benefits are discussed elsewhere in this report.

Intercity passenger travel forecasts

WisDOT’s intercity passenger travel model can be used to predict and illustrate the impacts of providing new passenger transportation services (such as high speed rail) or improvements to existing facilities and services (such as an expanded highway or more frequent intercity bus service). In this analysis, WisDOT used the model to compare a set of “plan forecasts,” reflecting the recommendations of its Translinks 21 plan, with a set of “trend forecasts,” where the existing transportation system and programs are maintained during the next 25 years.

The Translinks 21 plan calls for a wide range of transportation improvements that will benefit passenger travel. These improvements include the completion of the Corridors 2020 highway network, implementation of new 125 mph high speed rail service linking Chicago-Milwaukee-Madison-Twin Cities, conventional rail service to Madison and Green Bay, feeder bus service to the above rail service, and intercity bus service to all communities over 5,000 population. In addition, the Translinks 21 plan improves the state’s air passenger program and system.

The trend forecasts, meanwhile, assume the completion of the Corridors 2020 highway system and maintenance of the fairly limited current system of rail, intercity bus and air services.

Traveler surveys provide the foundation

The intercity travel forecasting model is supported by information obtained through an extensive statewide travel preference survey. In this survey, Wisconsin travelers were asked which mode of transportation they prefer given various travel time, cost and service frequency scenarios.

Focus on links within Wisconsin and to neighboring states

It must be emphasized that the model predicts intercity passenger trips only - generally those trips that cross county lines. For example, intercity auto forecasts do not include local trips, and intercity bus forecasts do not include bus transit trips within urban areas.

Also, the intercity forecasts provided by the model relate only to trips within the state and to adjoining counties in other states, such as the Chicago and Twin Cities metropolitan areas. For example, an air trip from Milwaukee to Kansas City is not included in the model forecasts.

Models forecast increase in passenger travel

If the Translinks 21 plan is implemented, the model predicts that total intercity passenger travel will be 24.1% higher in 2020 compared to 1995 levels. If the current transportation system is simply maintained - without the Translinks 21 improvements - travel would increase 23.6%.

In terms of total trips, implementation of the Translinks 21 would produce 1.8 million more intercity passenger trips annually by 2020 compared with maintaining the current system.

Translinks 21 Travel Demand Forecasts
(Year 2020 Intercity Passenger Trips)

Mode	2020 Trend				2020 Plan		
	1995	Trips	Difference	% Increase	Trips	Difference	% Increase
Auto	327,832,000	405,063,000	77,231,000	23.6%	402,365,000	74,533,000	22.7%
Air		1,580,000	294,000	27.6%	557,000	(203,000)	-47.9%
High speed Rail	0	0	0	0.0%	0	0	0.0%
Conventional Rail	421,000	22,000	101,000	24.0%	400,000	(21,000)	-5.0%
Feeder Bus/Rail	0	0	0	0.0%	52,000	52,000	100.0%
Intercity Bus	46%	550,000	90,000	19.6%	527,000	67,000	14.6%
Total	329,777,000	407,493,000	77,716,000	23.6%	409,301,000	79,524,000	24.1%

* New Service

The growth in intercity passenger travel that results from implementing Translinks 21 is almost entirely produced because of the new and improved facilities and services included in the plan. As an example, new high speed rail service will encourage people to take trips that they would not have previously made. New and improved Amtrak and intercity bus services will also encourage people to travel more, but they will not have as large of an impact as high speed rail.

Autos remain the dominant Intercity mode

According to the model, there will be 2.7 million fewer intercity auto trips in 2020 with the Translinks 21 plan in place, compared with the current system maintained. As mentioned above, this reduction in auto trips will occur because of the new Translinks rail and intercity bus initiatives.

Overall, however, this reduction in auto trips is less than 1% of the total. Both today and under the current system forecast, auto travel carries over 99% of all intercity trips. With the implementation of Translinks 21, intercity auto travel maintains its dominance with 98.3% of all intercity trips in 2020. Other modes each have shares of less than 1.3% of total travel.

High speed rail produces the largest difference

In comparing Translinks 21 and current system forecasts, the most notable change is the relatively high level of ridership associated with the addition of high speed rail (HSR) service between Chicago and the Twin Cities through southern and western Wisconsin. HSR, as outlined in the Translinks 21 plan, will carry 5.4 million riders in the year 2020.

Air passenger levels drop due to high speed rail

When compared to the current system continued, the Translinks 21 plan forecast shows 801,000 fewer air passenger trips, or a 59% reduction, in 2020. This reduction in air travel is largely the result of passengers in the Chicago-Twin Cities corridor moving

Both today and under the current system forecast, auto travel carries over 99% of all intercity trips. The implementation of Translinks 21 initiatives is projected to reduce that share of intercity auto travel to 98.3% by 2020

from air to high speed rail in response to fare savings, more competitive trips times, and easier single-trip access to downtown terminals in Milwaukee, Chicago, Madison and the Twin Cities.

Conventional rail ridership drops

Amtrak ridership is also lower in the Translinks 21 forecast compared to current trends. This is a result of upgrading existing passenger rail in the Chicago-Milwaukee corridor - by far the state's busiest - to high speed service under the Translinks 21 plan. Some, but not all, of this reduction is offset by new Amtrak rail service provided in the Milwaukee-Green Bay corridor.

Intercity bus service rises, ridership remains unchanged

Intercity bus ridership increases over 1995 levels with both the Translinks 21 plan in place and the current system continued. Overall bus ridership is lower in the Translinks 21 forecast, however, which ensures state-funded intercity bus service for all communities with populations greater than 5,000 residents. This smaller ridership increase is the result of more intercity bus passengers choosing to travel via new rail services on the most heavily-traveled routes.

Key Interstate corridors show most auto reduction potential

Using its comprehensive new travel models, WisDOT also was able to predict how the new and improved intercity passenger rail and bus services included in Translinks 21 would affect automobile travel on Corridors 2020 highways. The simple question asked by the model is this: How much will traffic growth be reduced where new intercity bus or rail service is provided, and how will this change in traffic growth affect the need to invest in highway improvements?

Two key findings illustrate what will happen to auto travel if Translinks 21 is implemented:

I State Highway 29 from Wausau to Green Bay. Near Wittenberg, intercity auto traffic will be reduced by 0.3% below 2020 forecasted levels. Total auto and truck traffic is reduced 0.1%.

I Interstate 90/94 from Madison to the Twin Cities. Near Mauston, intercity auto traffic will be reduced by 12.5% below 2020 forecasted levels. Total auto and truck traffic is reduced 6.5%. This corridor would see major passenger rail and intercity bus improvements under Translinks 21.

While they offer important benefits for mobility and economic development, intercity passenger transportation services such as conventional rail, high speed rail or intercity buses will have limited potential to significantly reduce intercity auto traffic on most highway routes.

The reasons why other intercity public transportation modes have a limited ability to attract auto users are fairly clear. For these other modes, the perceived "out-of-pocket" costs are higher, there is less frequency than auto travel, and there is less flexibility at the point of departure or arrival (requiring a taxi or municipal bus to complete the trip). Further, public intercity modes offer limited stops and longer distance trips, while many intercity trips require multiple stops.

Still, intercity public transportation can offer benefits not available with auto travel, and as a result, can convince some drivers to leave their cars at home. For example, high speed rail offers faster and more convenient downtown-to-downtown connections. On rail or a bus, people can sleep, work or socialize in ways they cannot if they choose

With a projected ridership of 5.4 million passengers in 2020, high-speed rail has the most notable impact on future travel of the Translinks 21 alternatives

While offering important mobility and economic development benefits, intercity services such as conventional and high speed rail or intercity buses will have limited potential to greatly reduce intercity auto traffic on most highway routes

to drive. And when the costs of parking, gas and tolls are taken into account - especially for trips to large urban areas such as Chicago or Minneapolis - it may be less expensive to take the bus or train than to drive.

Further, quality alternatives can provide economic access and mobility for people without automobiles - providing an important social and economic development benefit for the state.

Urban findings are similar

The Southeastern Wisconsin Regional Planning Commission (SEWRPC), which serves as the MPO for the seven-county Milwaukee-Racine-Kenosha metro area, has similarly analyzed the impacts of its regional transportation plan on urban auto and transit travel through 2010.

The SEWRPC plan includes a 75% increase in transit service, as well as highway improvements and the implementation of the regional land use plan. When compared to maintaining the current system through 2010, however, the SEWRPC plan only reduces auto travel by 4%.

As in the case with intercity transportation forecasts, the impact of providing a substantial increase in urban transit service in the state's largest metropolitan area - and the one where transit service carries the most transit riders - has a relatively small impact on auto travel.

intercity freight travel forecasts

The intercity freight transportation forecasts used in Translinks 21 are market-driven to reflect the realities of Wisconsin's growing economy and changing freight scene. With global trade agreements, growing exports and trends such as "Just-in-Time" manufacturing changing the face of business, the Translinks 21 plan relied heavily on input from private sector experts and industry trends to shape a market-responsive 21st century freight transportation system.

As a result, the Translinks 21 models provide the most comprehensive, information-based analysis of the entire statewide freight transportation system ever used by WisDOT. These models included and analyzed a wide range of factors that will affect freight shipments. State, county and industry growth and employment projections were analyzed, along with projections of what kinds of commodities would be shipped to various locations from each county in the state, to determine future freight volumes and the transportation systems needed to carry them.

The freight trend forecasts were then further analyzed and refined with the advice of the Translinks 21 Expert Panel - which included private sector leaders such as the presidents of Wisconsin Central and Schneider National - to reflect emerging multimodal transportation issues that affect industries every day. Finally, the resulting "plan" forecasts were then used in the development of specific freight transportation plans for each individual mode, as well as to chart strategies to improve the emerging opportunities for intermodal freight movements.

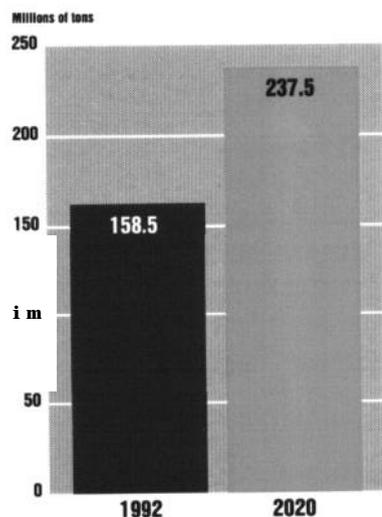
Freight forecasts show significant increase

The Translinks 21 plan forecasts that over all modes, 485.3 million tons of freight will be shipped to, from and through Wisconsin in the year 2020 - a 58.4% increase over 1992 levels.

Trucking continues to carry the largest share of total commodity shipments according to the forecast models, with shipments in 2020 of 237.5 million tons. This represents an increase of 49.8% in total truck shipments during the period from 1992-2020.

SEWRPC's plan - including a 75% increase in transit service, highway improvements and implementation of a regional land use plan - will reduce projected auto travel by only 4%

Truck shipments to increase 50% by 2020



Translinks 21 Freight Tonnage Forecasts by Mode
(Year 2020 Tonnage)

Mode	1992	2020 Trend	% Increase	2020 Plan	% Increase
Truck	158,512,000	242,664,000	53.1%	237,515,000	49.8%
Rail	113,463,000	190,910,000	68.3%	196,059,000	72.8%
Water	34,254,000	51,363,000	49.9%	51,363,000	49.9%
Air	123,000	225,000	82.9%	387,000	214.6%
Total	306,352,000	485,162,000	58.4%	485,324,000	58.4%

Freight rail has the second highest share of total shipments, but a higher forecast growth rate of 72.8% during 1992-2020. The waterborne mode - ships and barges via ports and harbors - is a distant third with forecast shipments of 5.14 million tons shipped in 2020.

The high-value cargo shipped via air is the smallest in tonnage, but shows the highest growth rate at 214.6%.

intermodal shipments become more important

Intermodalism - using more than one mode for a single shipment - is fast-becoming the way of doing business for key Wisconsin companies. In fact, two Wisconsin-based companies that provided leadership on the Translinks 21 Expert Panel - Schneider National Trucking Co. and Wisconsin Central Railroad - are teaming up as national leaders in the growing area of intermodal shipping.

As a result, the Translinks 21 plan forecasts were refined to specifically address rapidly-emerging truck/rail intermodal partnerships, in an effort to make the forecasts truly reflective of market realities. Through these partnerships, state and national rail and trucking companies have entered into agreements to shift their long-distance shipments onto rail, utilizing intermodal containers, trailers-on-flat-cars and new "RoadRailer" technologies. This practice takes advantage of the efficiencies of each mode working together, since trucks are often essential for short-hauls between the factory and the rail terminal, while rail can offer more cost-effective long-distance shipment for bulk commodities such as coal and ores that are not time-sensitive.

If the current freight transportation system in Wisconsin were maintained - without the improvements in Translinks 21 - growth rates for trucking and freight rail are forecasted at 53.1% and 68.3% respectively through the year 2020. But when these forecasts are adjusted to account for the increasing use of intermodal moves, the growth rates change to 49.8% for trucking and 72.8% for rail. These updated figures were endorsed by the Expert Panel.

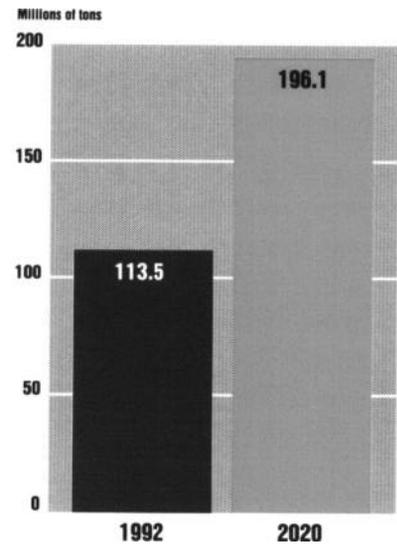
While it is increasingly important from an industry perspective - in terms of time and cost savings by making long-distance shipping more efficient - intermodalism has a relatively modest impact on truck and rail traffic. By 2020, truck/rail intermodal moves, aided by the improved facilities called for in Translinks 21, will capture only 2.1% of shipments that are now made via trucks only. This is because truck/rail moves are best-suited for long-distance shipments, while the majority of freight in Wisconsin continues to move over shorter local or regional distances.

intermodal improvements have the greatest impact in key corridors

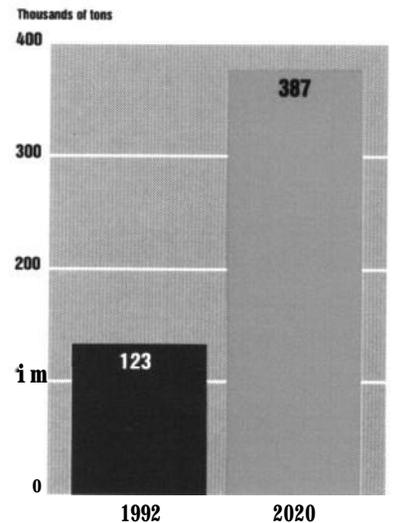
The Translinks 21 models also identified those specific corridors where intermodal activity is most likely to increase through 2020. The impact is concentrated on key interstate highway corridors that provide access to Chicago-area inter-modal "gateway"

it is forecast that by 2020 485.3 million tons of freight will be shipped to, from and through Wisconsin - a 58.4% increase of 1992

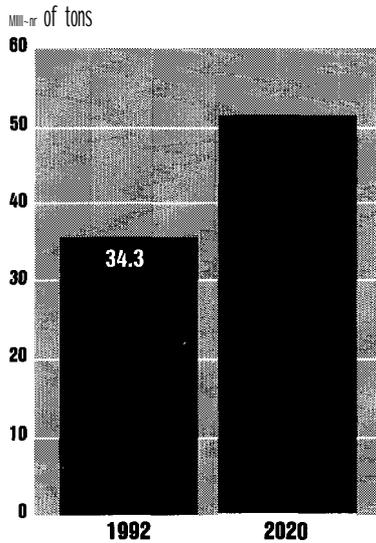
Rail freight shipments to increase 73% by 2020



Air shipments to Increase 215X by 2020



Water shipments to increase
50% by 2020



I-94 between Kenosha & Milwaukee: Maintaining current system would produce 61% increase in vehicle miles of travel (VMT) by 2020. Translinks 21 initiatives would reduce VMT growth in the corridor by only 5%

terminals, These include corridors from Green Bay, the Fox Cities and Milwaukee to the Chicago metropolitan area.

Here are a few key findings that illustrate how the Translinks 21 improvements to Wisconsin's intermodal freight transportation system would impact truck traffic:

I Highway 26 from Janesville to Waupun. The number of intercity trucks would be reduced by 6.9%, and total auto and truck traffic combined would fall 0.7%.

I Interstate 43 from Beloit to Milwaukee. The number of intercity trucks would be reduced by 14.1%, and total auto and truck traffic would be reduced by 1.5%.

Even on major Wisconsin highways, trucks account for only 10-20% of all traffic. As a result, using intermodal moves to take some trucks off the highways has a small impact on total traffic.

Air and water shipments also show solid growth

According to the Translinks 21 freight models, ships and barges will carry 10.6% of all freight moved in Wisconsin by the year 2020 - a 49.9% increase over current levels.

For air cargo, shipments are expected to increase 214.6% by 2020. But despite this tremendously high growth rate, air will still carry less than 1% of all Wisconsin cargo.

Freight and passenger plans: The combined impacts

As indicated in the passenger and freight sections of this chapter, the impact of planned transportation improvements has a modest impact statewide on intercity auto and truck traffic levels - and underscores the need for an adequate and growing highway investment program.

A key example is in the I-94 corridor from Kenosha to Milwaukee - one of the state's busiest for freight and passenger travel. Overall, maintaining the current transportation system in that corridor would produce a 61% increase in vehicle miles of travel by 2020. Implementation of Translinks 21, with its new high speed rail and commuter transit services and improved intermodal freight facilities, would still produce a 56% increase in vehicle travel by 2020. That is not a noticeable difference, given the tremendously high traffic volumes in the corridor.

PRICING IMPACTS ON TRAVEL

Pricing strategies - raising the fees motorists pay in order to cover more of the real or perceived costs of driving on highways - are often mentioned as potential ways to reduce traffic congestion and the environmental impacts of travel. It has been argued that if motorists were required to pay all the direct and indirect costs that result from driving - such as road construction and maintenance, loss of taxable land and environmental impacts - they would change their travel habits and possibly make more use of alternative transportation modes,

The federal ISTEA legislation and growing interest in the subject both require a comprehensive study of the potential use and impact of highway pricing measures as part of Wisconsin's long-range transportation planning process. As a result, WisDOT hired a private consultant, Cambridge Systematics, to perform a far-reaching, unbiased analysis of pricing strategies,

Pricing study enlists expert input

A 13-member review panel of environmental, auto user, trucking, local government, economic and transportation representatives convened throughout the Summer of 1994 to design, direct and review the Cambridge Systematics study of pricing mechanisms and their potential impacts.

The discussions were not intended to analyze Wisconsin's current highway pricing policies or make recommendations for a future policy, but rather to develop a general understanding of the available pricing alternatives and their likely impacts in reducing highway travel.

Pricing study focuses on four areas

Designed to serve as a resource for future pricing policy evaluations, the Cambridge Systematics study examined four areas. Those topics, and the study's major findings in each, follow.

Study area #1: Range of pricing mechanisms and likely impacts

This initial study phase included a review of literature discussing various pricing policies in place around the world, and the likely impact they would have on vehicle use in Wisconsin.

The study found that available pricing systems include both highway user and non-user fees. Non-user fees are those obtained from general sources such as the property, income or sales taxes, and they have no relationship to vehicle ownership or use. As a result, changes in those fees would likely have no impact on how people choose to travel.

Although there is limited information on the actual impacts of changes in user fees - such as fuel taxes, vehicle registrations and other fees paid by highway users - the study found that adjustments in these fees could impact how people choose to travel.

The extent of these impacts depends upon how much and what type of fee is increased:

- I Increasing state vehicle registration fees would likely have little impact on travel behavior unless the increases were dramatic.
- I Fees likely to change the way people choose to travel include increased motor fuel taxes, parking fees, vehicle charges based on miles driven, emission fees, highway tolls, and areawide or network-based supplemental licenses (which charge motorists an admission fee to operate their vehicle in a designated area).

Study area #2: Current status of the costs of highway travel in Wisconsin

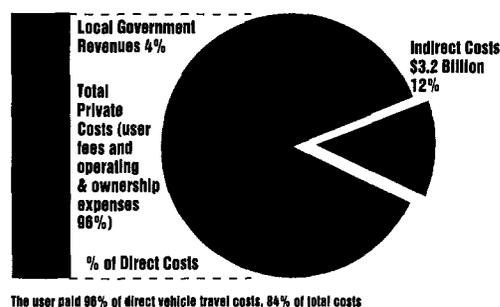
This portion of the study examined the current cost of highway travel in Wisconsin, and the degree to which these costs are paid for by highway users. It attempted to account for all highway-related costs, dividing them into categories of direct and indirect costs.

The study estimates that in 1992, the annual direct costs associated with highway travel in Wisconsin were \$22.5 billion. Direct costs - actual spending for highway transportation - includes both public spending by federal, state and local governments, as well as the much larger private spending of highway users, including such costs as vehicle purchase and maintenance, insurance, fuel and user fees. Wisconsin motorists pay 96% of these direct costs through user fees and personal expenses, the study found. Direct costs not covered by highway users - totalling 4%, or \$880 million - were paid for with local government general revenues.

Pricing study findings:

- State motorists pay 96% of direct costs for highway travel through user fees and personal expenses. The other 4% are paid by local government revenues
- Highway users pay 64% of the direct and indirect costs of highway travel in Wisconsin, or \$25.7 billion in 1992

1992 Total Vehicle Travel Costs
\$25.7 billion



Some argue that highway travel also involves indirect costs - the costs to society for which either full payment has not been made, or the payment was not perceived or intended to be related to highway travel. Identifying and quantifying these costs is often complicated. The line that separates benefits and costs is not always clear, making it difficult to achieve agreement on a list of indirect costs. Even when a partial list is agreed upon, it is difficult or even impossible to place a specific dollar value on many of these indirect costs.

Using the most complete and accurate method available to them, Cambridge Systematics estimated the indirect costs of highway travel in Wisconsin. Their estimate - \$3.2 billion for 1992 - included such costs as air pollution, personal injury, road salt damage, petroleum subsidies and the loss of revenue from non-taxed land used for highways and roads. Costs that could not have a specific dollar figure attached to them, and therefore were not included in the \$3.2 billion figure, include such items as noise and neighborhood disruption.

Overall, Cambridge Systematics found that highway users paid 84% of the combined direct and indirect costs of highway travel in Wisconsin, which totalled \$25.7 billion during 1992. The remaining 16% of total highway-related costs were covered by sources other than auto users.

Study area #3: Relationship between travel and the cost of auto use

This phase, the primary focus of the study, estimated how vehicle travel would be impacted by different levels of auto operating costs - whether higher fees would result in less driving.

The study found that in order to substantially reduce vehicle travel, very significant out-of-pocket operating costs - well beyond those experienced or even seriously considered to date in this country - would be required.

For example, doubling the cost of each vehicle trip made daily - equivalent to an additional \$1 parking fee - would likely result in about a 1% drop in vehicle use for traveling to work in urban areas and a 1.8% reduction in urban non-work trips,

In order to achieve a meaningful reduction in urban vehicle travel - a 10% cut - the study estimated that the per mile cost of driving would have to be doubled. This would be roughly equivalent to increasing the motor fuel tax, currently 23 cents in Wisconsin, by \$1 per gallon. Such an increase would cost the average one-vehicle household an additional \$493 annually.

If fees were increased on a per trip basis, rather than on a per mile basis, reducing total work trips in urban areas by 10% would require an additional \$6 parking fee for each daily trip to work. Assuming that each person makes 250 trips to work per year, this would be equal to a \$1,500 increase in the annual cost of driving to work.

Through its separate study and planning process, the Southeastern Wisconsin Regional Planning Commission found that it would require effectively doubling the price of motor fuel through the equivalent of a \$1.10 per gallon gas tax increase, coupled with a 72% increase in public transit service, to achieve a 10-12% reduction in urban vehicle travel. Most

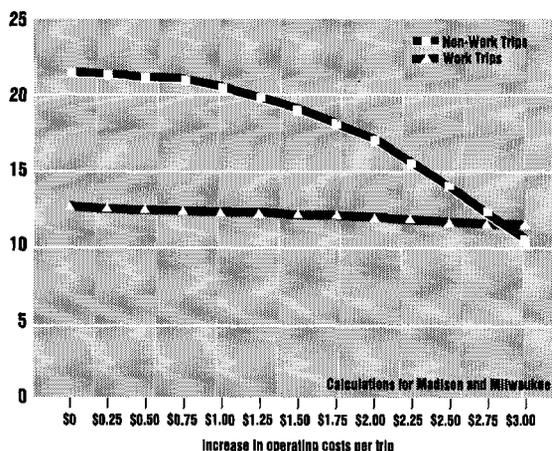
notably, however, the reduction in vehicle travel would come almost entirely from shorter, not fewer, auto trips.

Study area #4: Evaluate pricing measures

The final portion of the Cambridge Systematics study evaluated potential pricing mechanisms according to their feasibility and ease of implementation, ability to

Impact of pricing on urban travel

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generate revenues, compliance and administrative costs, evasion potential, and equity of the fee distribution.

The study concluded that while motor fuel taxes currently provide the highest yield of any of the pricing measures, charging fees based on vehicle emissions or miles traveled hold the greatest promise for delivering substantial yields in the future. It also found that increasing fees currently being collected - such as fuel taxes and registration fees - would carry much lower compliance and administrative costs than implementing completely new pricing measures.

Study conclusions: Pricing impacts do not justify the benefits

Based in part on the results of the Cambridge Systematics study, WisDOT did not include highway pricing strategies as part of its Translinks 21 long-range transportation plan.

The results of the Cambridge and SEWRPC studies demonstrate that drivers pay the vast majority of the costs of highway programs, and that automobile use in Wisconsin is not as heavily subsidized as assumed. If highway fees were increased to replace direct local government spending on highway transportation, it would require a 29 cent per gallon increase in the state motor fuel tax rate - **without providing any additional transportation improvements.**

At the same time, a 29 cent per gallon motor fuel tax increase would result in only a 3% reduction in urban vehicle travel - a limited benefit given the very high costs,

Additionally, a policy shifting all local road costs to road users would ignore the benefits that all members of a community receive from a road system, including increased mobility, economic development opportunities and welfare distribution. Other benefits include increased safety (providing access for police and fire vehicles), higher property values (by providing mobility and access to property), and greater convenience for residents and businesses. WisDOT concluded that since all citizens benefit from local roads, highway users alone should not pay for them.

Curbing the growth in vehicle traffic in urban areas would require fee increases well beyond those ever considered or experienced in the United States. The Southeastern Wisconsin Regional Planning Commission study suggests that individuals would respond to price increases by either traveling fewer miles or not at all, rather than switching to other transportation modes such as transit, walking, biking or carpooling.

Participants throughout the Translinks 21 process have also rejected extensive pricing strategies - and it is highly unlikely that they would be supported by the state's citizens or Legislature.

Unless it is implemented on a regional or national level, pricing strategies would simply raise the costs of transportation in Wisconsin - perhaps to unacceptable levels - resulting in a negative impact on the state's citizens and economy without comparable benefits for mobility and the environment. Low-income residents who rely on their automobiles for traveling to jobs and services would be particularly hardest-hit by a massive hike in state motor fuel taxes.

This does not suggest that Translinks 21 abandons the concept of transportation pricing. WisDOT recognizes that pricing is currently not a viable method for curbing travel growth in urban areas. Pricing in limited corridors or for the purposes of enhancing equity among transportation users in the fees they pay, however, are still potential highway pricing mechanisms that need further consideration.

If highway fees were increased to replace direct local government spending on highway transportation, a 29. cent increase in the state motor fuel tax would be required. That increase is projected to result in a 3% reduction in urban vehicle travel

Unless implemented regionally or nationally, pricing strategies would simply raise Wisconsin's transportation costs - resulting in negative impacts on our citizens and economy without comparable benefits for mobility and the environment



CHAPTER THREE THE 25-YEAR TRANSLINKS PLAN

3

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The first key component of WisDOT's comprehensive Translinks 21 plan is its Intermodal Passenger Transportation Plan. This component focuses on moving people between communities, and in coordination with MPO plans, within communities all across Wisconsin.

The Intermodal Passenger Transportation Plan includes three integrated elements:

- Intercity passenger transportation plan.
- I Urban passenger transportation plan, to be coordinated with MPO efforts,
- I Rural and specialized elderly and disabled transportation plan.

3 Integrated elements:
W intercity passenger plan
H Urban passenger plan
a Elderly and disabled plan

INTERCITY PASSENGER TRANSPORTATION PLAN

For intercity passenger transportation, Translinks 21 outlines an innovative, ambitious and interconnected mobility network that provides the opportunity for people to conveniently access the state, nation and world using either private automobiles, public transportation, or some combination. This network makes travel between cities, and then from point to point within cities, easy and seamless, with a wide range of available travel choices.

WisDOT, since it is primarily responsible for intercity passenger travel, will invest in a series of improvements and expansions to the transportation system. Quality highways - which anchor that system - will be complemented by more Amtrak and intercity bus services, new high speed rail services on key routes, and more specialized transportation for elderly and disabled persons.

These various intercity transportation modes will then fuse together at intermodal connection points within communities. WisDOT will help finance passenger stations where intercity travelers arriving via car, train, bus or plane could easily connect with another intercity mode to complete their trip, or with urban buses or taxis to reach a more local destination.

What the Translinks 21 intercity passenger plan provides is a range of choices for reaching all corners of the state, through a truly interconnected public-private transportation network.

State highway plan element

Highways anchor Wisconsin's multimodal transportation network

Wisconsin's multimodal transportation system - and the Translinks 21 plan - are anchored by the 12,000-mile State Trunk Highway System. This system includes all state and Interstate highways, and serves communities in all parts of Wisconsin.

WisDOT is responsible for constructing, repairing, improving and signing all state trunk highways.

In 1988, Governor Tommy Thompson unveiled Corridors 2020 - a 3,400-mile network of key two- and multilane state and Interstate highways connecting all communities over 5,000 population. Corridors 2020 includes two subsystems. The Backbone network consists of 1,550 miles of all Interstates and key current or prospective multilane highways such as 10, 29, 41, 51, 53 and 151. The Connector network encompasses 1,850 miles of other key state highways, some two-lane and some multi-lane routes, that connect key communities with the Backbone.

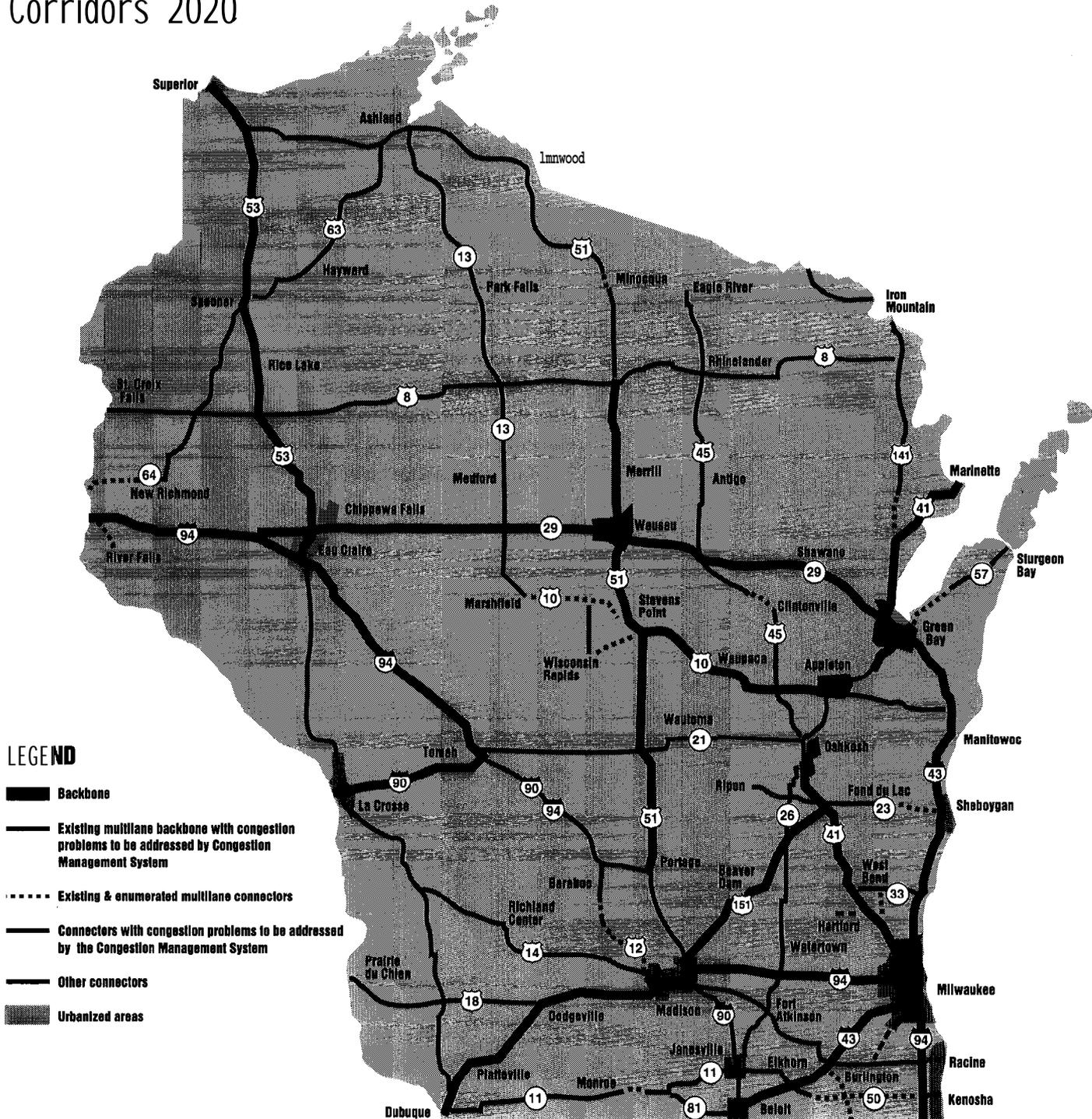
For the first time ever, Corridors 2020 set criteria for selecting routes that go beyond traditional highway planning. Daily truck and automobile traffic, demonstrating the need for highway expansions to maintain safe and efficient service, were key factors,

But Corridors 2020 also selected routes based on their ability to serve key trade, manufacturing, agriculture, forestry, tourism and recreation centers that provide the heartbeat for Wisconsin's thriving economy.

As an example of its potential economic benefits; the expansion of Highway 29 is expected to create more than 1,500 new jobs and generate \$300 million annually in new sales statewide.

The state Transportation Projects Commission and the State Legislature have strongly endorsed Corridors 2020. Its expansion elements are funded through the Major Highway Program, which addresses significant and high-cost projects that add new lanes or convert highways to freeways.

Corridors 2020



Planning reconfirms the need for Corridors 2020

As part of its research and analysis to develop a comprehensive transportation blueprint for Wisconsin, Translinks 21 undertook a complete review and update of Corridors 2020.

The findings of WisDOT's review and update of Corridors 2020 were clear. Corridors 2020 will continue to be an essential part of Wisconsin's transportation system in the 21st century. In fact, all of the factors that shaped Corridors 2020 in 1988 are even more compelling today.

Growth in traffic on Corridors 2020 routes is expected to continue. Even the significant new investments in non-highway modes such as freight and passenger rail, intercity bus and urban transit called for in the adopted Translinks 21 plan will have only a slight impact on Corridors 2020 traffic and not replace the need for continuing investments in this highway network.

Specifically, use of travel models to examine the impact of substantial expansions of high speed and conventional rail and intercity bus service showed that total auto travel on Corridors 2020 routes would be reduced less than 1% by 2020 compared to current system trends - an amount that would be overtaken by traffic growth in less than one year. Similarly, a market-driven analysis of increased truck-rail intermodal activity for freight shipments showed that only 2.1% of tons shipped by truck-only would move to truck-rail intermodal on a statewide basis.

The Corridors 2020 plan update also adds U.S. Highway 8 across northern Wisconsin and State Highway 11 from Monroe to U.S. 151 as two-lane Connectors, since these routes now meet the criteria for route selection. The additions of U.S. Highway 8 and State Highway 11 also provide consistency with federal policies, since they are included on the National Highway System. This brings the total Corridors 2020 network mileage to 3,650, with a 2,100-mile Connector portion.

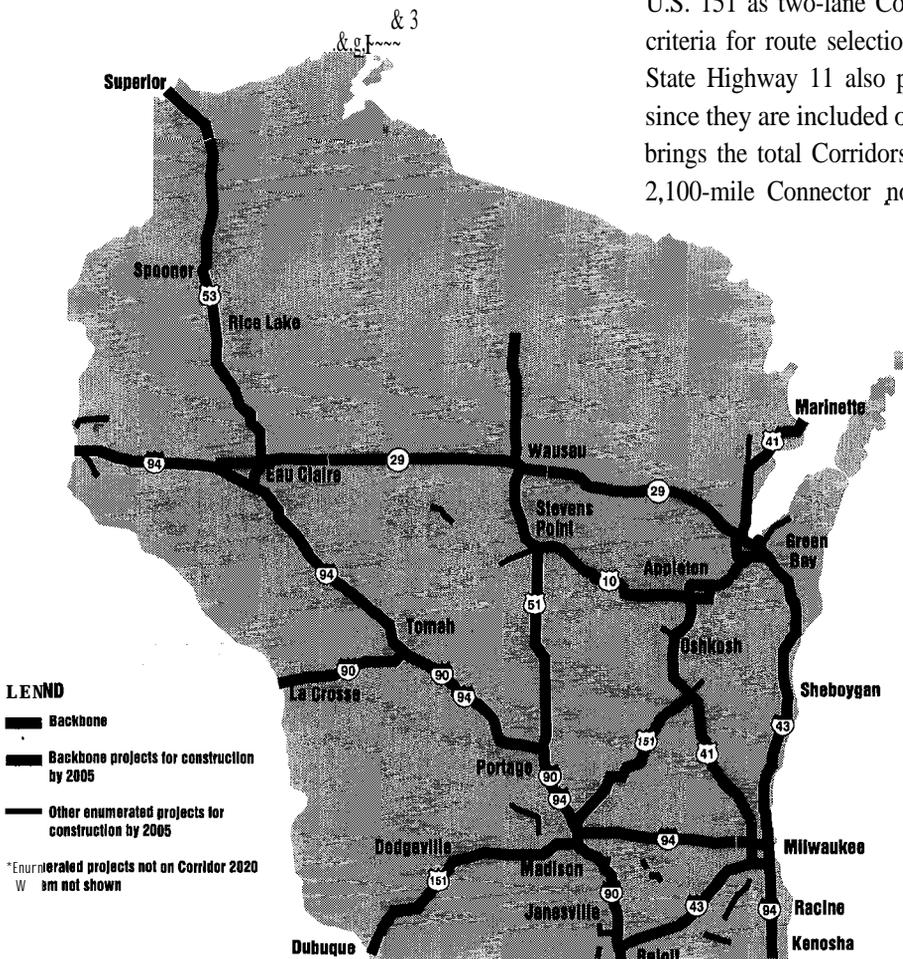
Translinks 21 completes Corridors 2020, studies other expansions

A key focus of the state highway proposal in the adopted Translinks 21 plan is the completion, as planned and on schedule, of Corridors 2020 multilane Backbone routes.

WisDOT will continue the current level of Major Highway Program funding at \$161 million annually (adjusted for inflation and other new costs) through 2005 in order to complete all Corridors 2020 multilane Backbone routes and other major highway projects with current legislative approval. No additional major expansion projects will begin construction before 2005, although the biennial enumeration process for major highway projects will continue.

- Corridors 2020 will continue to be an essential part of Wisconsin's transportation system in the 21st century
- Models examining the impacts of substantially expanding intercity rail and bus options found total auto travel on Corridors 2020 would be reduced less than 1% by 2020 compared to current system trends

Corridors 2020 Routes Awaiting Construction



Completing Corridors 2020 will offer significant safety benefits for intercity travelers, resulting in a projected 14% reduction in crashes, injuries and fatalities on Corridors 2020 routes. Travel efficiency, in terms of the time and costs required to reach a destination, will also improve.

On about 1,000 miles of state highways - including existing and planned Corridors 2020 routes - projections show emerging congestion issues after 2005. To find the most cost-effective ways of addressing future problems, WisDOT will initiate a Congestion Management System (CMS) during 1995, to be completed in 1996.

WisDOT will perform a CMS analysis on each state and Interstate highway with emerging congestion in rural and smaller urban areas; while metropolitan planning organizations (MPOs) will analyze congested routes, with WisDOT assistance, in their areas over 50,000 population.

Through the CMS, WisDOT and MPOs will reevaluate the definition of what is an "acceptable" level of congestion; study the potential of other modes (such as rail or bus service) for reducing congestion; and analyze lower-cost highway solutions for reducing congestion (such as passing lanes, paved shoulders or high-occupancy vehicle lanes) short of adding new unrestricted lanes. Non-highway options for reducing congestion and the need for highway expansions, such as transportation demand management programs, will also be explored in larger urbanized areas.

The CMS analysis will then provide recommendations of where emerging congestion issues can only be handled through additional major highway expansions, beyond those planned to be completed by 2005. The highway expansion needs after 2005 could be less, more or the same as current levels. After the CMS is complete, WisDOT will amend its Translinks 21 plan and Major Highway Program to an appropriate funding level.

All major highway expansion projects must undergo an environmental analysis, Transportation Projects Commission review and receive legislative approval before proceeding.

Translinks 21 addresses all rehabilitation and bridge needs on multilane Backbone routes

Aside from Corridors 2020 expansions, many existing multilane Backbone routes were built in the 1950s and 1960s. They are aging and in need of reconstruction - simple, less-costly resurfacing is no longer sufficient because the roadbed beneath the pavement is wearing out.

Ensuring that Corridors 2020 multilane Backbone routes continue to provide safe, efficient, cost-effective and high-quality service is critical. Corridors 2020 highways comprise only 4% of all road miles in Wisconsin, but nationally, these kinds of routes typically carry up to 70% of commercial truck and 40% of passenger auto traffic. The Corridors 2020 network is also the foundation of Wisconsin's mileage in the National Highway System - serving as a key window to the world, and a key link to the national transportation network, for businesses and citizens.

Wisconsin's ability to ship products to market, foster economic growth and job creation, remain competitive in the world marketplace, and enhance the quality of life of its citizens all depend, as a result, on quality Backbone links - complemented by other modes as appropriate.

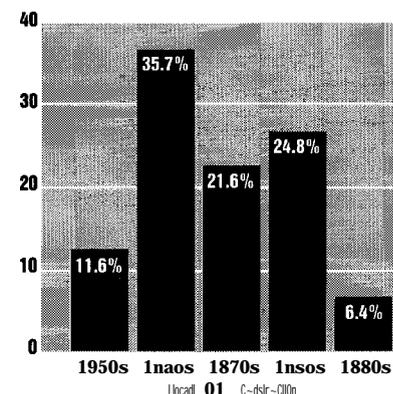
While some pavement reconstruction has already taken place on multilane Backbone routes, the need for reconstruction is increasing statewide as the system ages. Specifically, about 60 miles of Corridors 2020 multilane Backbone routes have unacceptably

On about 1,000 miles of state highways where congestion is expected after 2005, a Congestion Management System will identify cost-effective ways to address future problems

Key highway initiatives

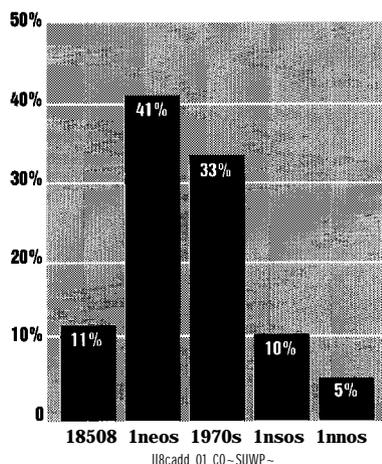
- In addition to completing previously approved Major Highway Projects using existing funding levels, Translinks 21 provides the following program expansions:
- \$1.54 billion to rehabilitate aging Corridors 2020 Backbone routes
- \$520 million to rehabilitate non-Backbone state highways
- \$250 million for improved interchange access
- \$175 million to initiate a Country Roads Program on lower-volume state highways

Majority of Corridors 2020 Multilane Backbone Pavements Built in 1960s



Corridors 2020 routes comprise 4% of Wisconsin road miles, but typically carry up to 70% of commercial truck and 40% of passenger auto traffic

Many bridge decks on C2020 backbone will need replacement



interchanges and intersections must function well in order to link communities and businesses with the state highway network. inadequate interchanges can slow or prevent economic activity in communities

rough pavement today. Without increased investments, areas of rough pavement could increase five-fold, to 300 miles by 2005.

Reconstruction also carries significant costs - up to five times more than simple resurfacing.

The situation is similar with bridges on the existing multilane Backbone system, with many bridges reaching an age where major rehabilitation and deck replacement - instead of less-costly and less-permanent “band-aid” solutions - are essential to preserve mobility. A bridge deck is typically replaced once during the service life of a bridge, usually when the facility is about 35 years old. Within the next ten years, 50% of the bridges on the multilane Backbone system that have not already been replaced in recent years will require deck replacement.

In order to address these critical highway needs, the adopted Translinks 21 plan calls for increased funding to complete the appropriate levels of rehabilitation and reconstruction on the pavements and bridges that make up the existing Corridors 2020 multilane Backbone system.

By 2020, current investment levels would provide approximately \$1.5 billion for pavement rehabilitation and bridges on the multilane Backbone network. This figure does not include the \$161 million annually for highway expansions, provided through the Major Highway Program.

Translinks 21 provides an additional \$1.54 billion over 25 years for additional rehabilitation and bridge work on the multilane Backbone system. These additional resources will enable WisDOT to resurface and reconstruct all existing and emerging areas of rough pavements on the system, and to address other problems such as unsafe hills and curves. WisDOT will also replace all deteriorated bridge decks and reconstruct all outdated bridges on multilane Backbone highways.

The increased investment in the multilane Backbone system identified above is justified by the benefits of the improvements it will buy, and by the emerging problems that will be avoided.

For example, unacceptably rough pavements, if left unaddressed, would result in less comfortable rides, more wear and tear on vehicles (and therefore higher vehicle operating costs), longer travel times, lower fuel economy and a greater risk of being involved in a crash. A failure to replace bridge decks when needed would lead to weight restrictions, meaning that truck traffic would have to be diverted to longer and less-efficient routes.

Backbone investments also respond to interchange needs

The additional \$1.54 billion investment in the Corridors 2020 multilane Backbone network also will enable WisDOT to respond to growing interchange modernization needs on those routes.

Interchanges and intersections - where highways and streets meet - must function well in order to link communities and businesses with the state highway network. But in some parts of Wisconsin - for example, where Highways 41 and 441 meet in the Fox Valley - a boom of new economic activity is generating traffic at levels well beyond what intersections and interchanges can handle safely and efficiently. If a response is not made, the interchange and state highway can be overwhelmed by traffic and crashes - and the community can be inundated with traffic that elects local streets instead of state highways in order to avoid problem interchanges. Inadequate interchanges can even slow or prevent economic activity in communities they serve.

As a result, a portion of the additional Corridors 2020 multilane Backbone rehabilitation investments will be made available to improve and modernize existing inter-

changes as needed statewide. This could include providing wider turn lanes at intersections, upgrading intersections to interchanges with on and off ramps, or expanding or redesigning existing interchanges.

Translinks 21 will stay even on non-Backbone routes

Pavement preservation on Corridors 2020 Connector routes and all other state highways will also be a significant and growing need during the next 25 years, requiring increased levels of investment. These routes make up over 85% of all miles on the state highway system. About 800 miles of Connector and non-Corridors 2020 state highways now have unacceptably rough pavement. Without additional investments, this number will double within ten years.

Unlike Backbone routes, however, the needs on non-Backbone routes require less reconstruction and can often be addressed through resurfacing and reconditioning measures at lower costs. This is true because lower traffic volumes on non-Backbone routes extend the timeframe over which resurfacing is effective. With less traffic, there is less wear and tear on the surface and roadbed.

The adopted Translinks 21 plan includes an additional \$520 million over the next 25 years - above current investment levels and inflation - for pavement work on Connector and non-Corridors 2020 state highways. Again, this does not provide for highway expansions. With this increased level of investment, WisDOT will address the most critical needs on those highways in priority order to prevent the total number of rough pavement miles from increasing. There would still be, however, about 800 miles with rough pavement on these routes by 2020.

Improved highway access will boost economic activity

Wisconsin's economy is dynamic and growing, attracting new businesses and creating new jobs on almost a daily basis. As our economy grows, new business and residential areas are developed and create the need for new and improved access to the state trunk highway system. Without improved access, the highway traffic, community development and economic problems discussed in the above section on interchange modernization can result.

If traffic volumes are high, the safest and most efficient method of providing improved access to the highway system is through the construction of a grade-separated interchange - a facility through which the highway can only be reached by using on and off ramps.

The need for a new interchange frequently arises over a relatively short time period - a business does not give six years notice of its plan to locate in a given area, for example - so budgeting funds for these projects often requires other needed improvements to be delayed. The cost of a new interchange is at least \$2 million and figures as high as \$10 million are not uncommon.

Funding new interchanges takes resources away from preserving existing highway pavements and bridges unless increased highway funding or a separate interchange program is available. This poses a two-edged sword: Either highway improvements are delayed; with safety and traffic problems, or interchanges are not built, sacrificing economic growth and creating safety hazards.

In response, Translinks 21 earmarks \$250 million over the 25-year period for the construction of new interchanges (but not new capacity) as needed, so that the twin goals of highway system preservation and safe and efficient access to business through new interchanges can be achieved.

Preserving pavements on Corridors 2020 connectors and other state highways will require increased investment levels over the next 25 years



With a growing economy, new business and residential areas are developed and create the need for new and improved access to the state trunk highway system

The goal of Wisconsin Country Roads is to provide scenic, rural highways that are part of their surroundings and destinations in themselves

Wisconsin Country Roads program will make driving more pleasant

The adopted Translinks 21 plan includes a new program, called Wisconsin Country Roads, that focuses on making the drive more pleasant and memorable for travelers. The goal is to provide scenic, rural highways that are part of their surroundings and destinations in themselves.

A 1,200-mile system of primarily rural, low-volume state highways will be selected for Wisconsin Country Roads based on their scenic, historic, cultural, archeological or environmental features. Projects that will be funded through the program - at a total 25-year cost of \$175 million - will include regular resurfacing, better pavement markings, improved safety features, prairie restoration, selective clearing and other landscaping improvements.

Wisconsin Country Roads will foster partnerships between WisDOT and local citizen groups, giving highway users a voice in what type of beautification improvements are performed. The focus is to maintain a well-marked and smooth driving surface while adding visual enhancements determined through the involvement of people who use or live along the highway.

local road and street plan element

WisDOT finances local roads and streets through a series of programs

WisDOT currently provides financial assistance to local units of government - including counties, cities, villages and towns - to support the construction, improvement and maintenance of locally-owned highways, roads, streets and bridges through a number of programs.

The largest state program for local roads and streets is General Transportation Aids (GTA), which provides assistance to all local governments through a formula based either on total mileage or the relative share of costs incurred by a local government over a six-year period.

In recent years, GTA increases provided by the Legislature have exceeded the general rate of inflation but trailed the steeper increases in local road and street costs. At the same time, the Legislature has substantially increased the per-mile aid rate, by which most towns receive aids, leaving smaller increases available in the cost formulas for counties and some municipalities.

Another significant state funding source is the Local Road Improvement Program (LRIP), initiated in 1991, LRIP, which has county, town and municipal components, pays 50% of the costs of making long-lasting capital improvements to key local routes. Modest levels of federal support for local roads and streets are also provided through various federal programs.

Despite somewhat erratic financing trends over the past several years, WisDOT remains very strongly committed to the maintenance and improvement of an efficient local road and street system as a key element of a statewide multimodal transportation network.

Industrial, agricultural, recreational and residential interests are all dependent upon quality local roads and streets to provide regional transportation and access to property. Without safe and efficient local roads and streets, shippers and farmers would experience the additional costs and delays of reloading for longer hauls as they came to routes that would not support larger loads. Homeowners and tourists would suffer from the reduced safety and increased deterioration of vital local routes.

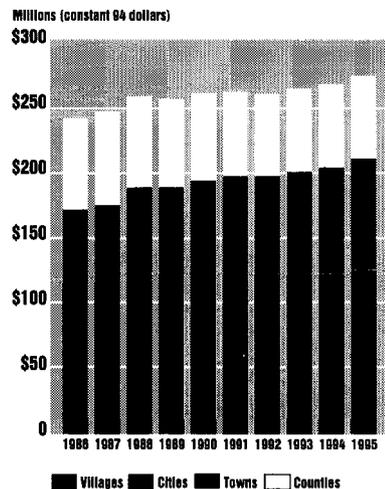
WisDOT recognizes the need for a strong partnership between the state and local governments in providing quality local roads and streets that interconnect with state

\$2 billion provided for key local road and street programs:

w General Transportation Aids - \$500 million

w local Road Improvement Program - \$1.5 billion

General transportation aids growth exceeds inflation, but not local costs



highways and other transportation facilities. The key components of that partnership are for the state to be a dependable funding source for the maintenance and improvement of local roads and streets, and for local governments to maintain and improve their routes efficiently and cost-effectively.

General Transportation Aids will reach “target” cost-share levels

At the time of the last major change to the GTA funding formula, WisDOT set a policy goal of covering 30% of eligible county road costs and 24% of eligible municipal costs. The state share of local road costs in 1994 was about 27.7% for counties and 22.2% for municipalities.

In responding to the four plan alternatives presented during the Summer of 1994, there was very strong support among local government officials and the public for WisDOT to maintain the buying power of GTA by meeting its 30% and 24% share of local road and street costs.

As a result, the adopted Translinks 21 plan includes funding levels that will return counties and municipalities to the respective 30% and 24% cost-sharing levels for GTA. This will require a GTA funding increase of \$500 million - in addition to the present 25-year level of approximately \$7.1 billion, plus inflation - to be phased-in over the next eight years.

With this significant increase in GTA funds, local governments should maintain at least their current spending level of local dollars for local systems. Local governments should also keep their road and street costs at or below the rate of inflation, in order to make a more productive use of increased state aids and provide more cost-effective local road and street services.

Local Road Improvement Program (LRIP) uses more dollars to buy better roads

Wisconsin’s healthy economy has brought with it increased commercial and commuter traffic that challenges local roads and streets. Larger vehicles and unanticipated traffic patterns are straining both the roads and streets themselves, and the ability of local governments to make the needed, long-lasting improvements that help those routes keep pace with community needs.

An existing study of major county roads and municipal streets in Wisconsin revealed nearly 3,000 miles that are seriously in need of major capital improvements -beyond just routine maintenance and minor repairs. Another study points out that town roads face similar levels of need - and all local routes thirst for more investments in improvements. This fact is confirmed by public input received throughout Translinks 21 from local officials statewide.

WisDOT’s response, through its adopted Translinks 21 plan, is to complement more stable and predictable GTA funding with significant increases in its Local Road Improvement Program.

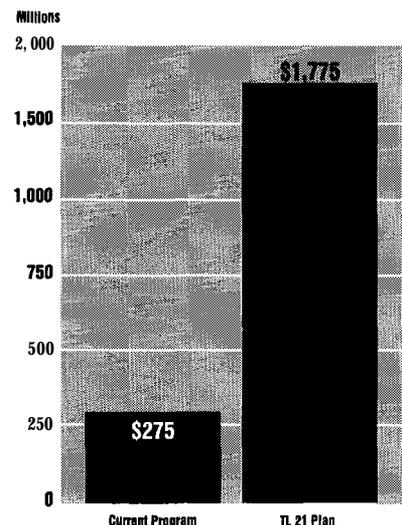
Overall funding available for LRIP will be increased so that, when combined with the GTA program increases outlined above, a total of \$2 billion will be invested in local roads over the 25-year period, above current levels. Given that the GTA recommendation will increase its funding level by \$500 million, the remaining \$1.5 billion will be invested in LRIP by 2020.

The reason for a sizeable LRIP increase is clear. WisDOT’s policy is that new state funding should be invested in improved transportation facilities. Given that LRIP is available only for long-lasting capital road improvements, an emphasis on LRIP serves state mobility goals.

Translinks 21 includes funding to restore counties and municipalities to 30% and 24% of cost-sharing levels for General Transportation Aids

The state’s healthy economy brings challenges for local roads and streets: larger vehicles and unanticipated traffic patterns strain the facilities and local governments are often unable to make long-term improvements

Major increases in local Road Improvement Program funding



As GTA cost-sharing levels are restored, the remaining \$1.5 billion will be invested in the local Road Improvement Program

A new Council on local Roads is created to help develop a detailed assessment of local road needs and development appropriate investment strategies



Reaction from local government officials since the beginning of LRIP in 1991 indicates tremendous support for the program. With very limited funding sources available for road improvements from federal and local sources - and with very sizeable improvement needs on the nearly 100,000 miles of local roads in Wisconsin - significant LRIP funding increases are required. For one LRIP component - the Town Road Improvement Program discretionary portion - funding requests recently exceeded available resources by a 16-to- 1 ratio.

New needs assessment, partnerships will guide local road investments

The adopted Translinks 21 plan also establishes a new Council on Local Roads, to include WisDOT, county, town, city, village, MPO and RPC representatives. The council will be charged with reviewing local road and street financing policies, establishing better data collection systems, and identifying the most cost-effective ways to provide local road and street services.

In order to guide the council's efforts and better target increased local road funding to the highest-priority needs, WisDOT will work with local governments to collect and analyze data on the condition of the entire local road and street system in Wisconsin. A process to develop specific, updated, long-term needs assessments for all local roads systems will be established as part of this effort - a critical tool, given that the last partial needs assessment was completed nearly ten years ago. Since information on bridge conditions and local road and street expansion needs already exists, the focus of this data-driven needs assessment will be on pavements.

Intercity passenger rail plan element

Maintaining rail service is the first priority

After losing most of its service in the two decades following World War II, passenger rail has been making a comeback in Wisconsin. The state is served by two Amtrak routes - both with top speeds of 79 miles per hour. Those routes include the Hiawatha, which links downtown Milwaukee and downtown Chicago with stops in Sturtevant (WI) and Glenview (IL); and the Empire Builder, a Chicago-Milwaukee-West Coast train with six Wisconsin stops.

In 1993, about 470,000 trips were made to and from Wisconsin via Amtrak. From a regional perspective, about 550,000 trips were made in 1993 by train within the Chicago-Milwaukee- Twin Cities corridor, though not all of them either originated or terminated at a Wisconsin stop.

Train ridership has been growing steadily in Wisconsin in recent years, and this increase is driven by the state-sponsored expansion of the Hiawatha Service. In 1989, Illinois and Wisconsin joined with Amtrak to expand the service from three daily round trips to the present seven. Over the past five years, ridership in the corridor has doubled in response. The Hiawatha ranks first among all 43 Amtrak routes nationwide in terms of ridership growth during 1989-94, and third for both its percentage increase in ridership and overall revenues.

WisDOT now budgets approximately \$700,000 annually to support the Hiawatha service. In fact, due to the tremendous surge in ridership, and the increased revenues from fares that result, state support for the Hiawatha decreased to only \$1.42 per passenger trip in 1993.

Despite this success, Wisconsin's rail service may be in jeopardy. Given that Amtrak is caught in a difficult and worsening financial situation, Wisconsin will be increasingly challenged to maintain and perhaps even need to restore its current level of service. As

a result, a key priority of Translinks 21 will be first to maintain, then gradually build upon, existing Amtrak service.

(Note: At the time of this writing, Amtrak had announced that the Milwaukee-Chicago Hiawatha Service would be completely eliminated, and the Empire Builder service greatly reduced, effective April 1, 1995. Wisconsin is now working aggressively to prevent that action.)

WisDOT finds that passenger rail service in Wisconsin offers many benefits, including providing an attractive mobility choice, boosting economic development by bringing more business and leisure travelers to the state, and stimulating attractive community development.

Passenger rail will reach more Wisconsin communities

With the continued and highly successful Milwaukee-Chicago corridor as its basis, the adopted Translinks 21 plan calls for the improvement and expansion of conventional rail service - with top speeds of 79 miles per hour - as a first step for passenger rail.

If and when Amtrak provides the train sets, with existing state funding financing track upgrades (as detailed below), new conventional service will be started in the Chicago-Milwaukee-Green Bay and Chicago-Milwaukee-Madison corridors, with two daily round trips in each.

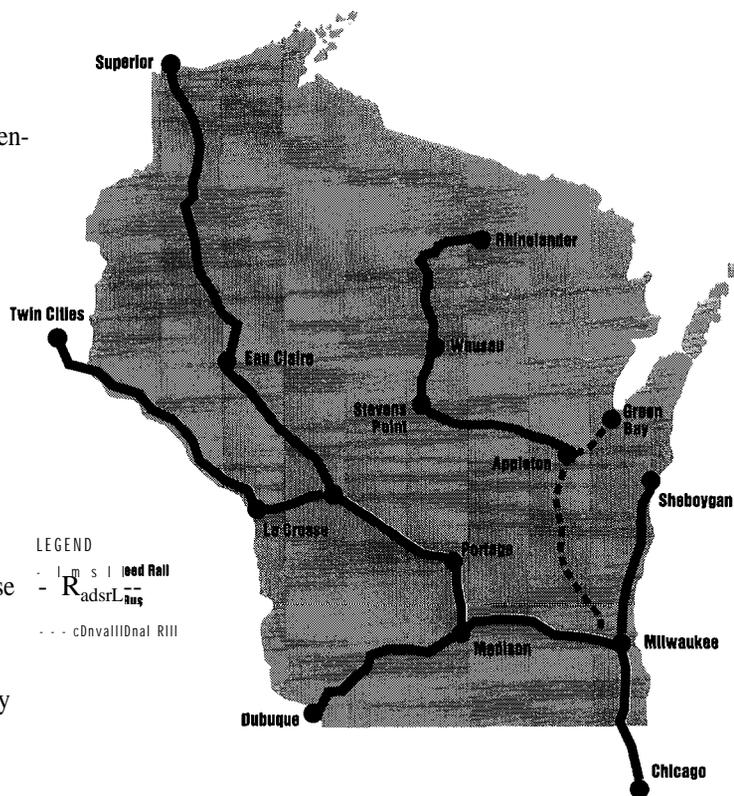
Existing services will also be improved. One additional daily Amtrak round trip will be provided in the current Chicago-Milwaukee-Twin Cities corridor, with a Madison bus/van shuttle connection. For the Chicago-Milwaukee Hiawatha, daily service will increase from seven to eleven round trips (contingent upon the potential need to maintain and/or restore existing service in light of federal actions). Some Hiawatha trains will continue to Madison, Green Bay and the Twin Cities, and new stops will be added at General Mitchell International and Kenosha.

Feeder bus services will also be provided in four key corridors to provide a direct link with expanded rail services. The corridors include Superior-Eau Claire-Tomah; Rhinelander-Wausau-Stevens Point-Appleton; Manitowoc-Sheboygan-Milwaukee; and Dubuque-Platteville-Madison.

To ensure wider access to the new rail services, all passenger trains will be encouraged to accommodate bicycles. Services must also connect easily with local transit and specialized transportation services for elderly and disabled persons at the local, county and regional level.

About \$126 million will be required from the State of Wisconsin for operating assistance and capital improvements, such as upgrading tracks, acquiring train sets and making other improvements necessary for expanded and more frequent conventional rail services. This is in addition to \$50 million in bonding authority (with the debt service to be financed by General Purpose Revenues, and not Transportation Funds) Wisconsin has already committed for the Green Bay and Madison service extensions. Additional funding of \$152 million provided by the federal government and the states of Illinois and

Translinks maintains, builds upon Amtrak service



- I Amtrak services must be preserved and then gradually expanded to Madison and Green Bay
- 4 More frequent passenger rail service will be provided in the existing Milwaukee-Twin Cities and Milwaukee-Chicago corridors, with new stops at General Mitchell International Airport and Kenosha
- W Conventional passenger rail service initiatives will require \$128 million in new state funding, with Illinois, Minnesota and the federal government providing a combined \$152 million for the shared multistate effort
- High speed rail is expected to have the most significant impact on intercity travel - attracting more than 5 million passengers by 2020

Minnesota for service with multistate benefits is also assumed.

The expansions and improvements to passenger rail service outlined above are expected to generate a total of 800,000 annual trips by 2005 - an increase of about 42% over current levels.

Moving to high speed rail, even better service

Following the maintenance/restoration, expansion and improvement of conventional rail services - and the increased ridership that will result - WisDOT will move toward implementing attractive, innovative high speed rail (HSR) services. HSR - at the maximum speeds enabled by diesel technology, up to 125 150 miles per hour - will provide a new and exciting travel option with faster travel times than autos, at a lower cost than air for short-distance trips.

Future HSR service will offer many important benefits. Along with providing an appealing new travel choice, HSR will serve as a state-of-the-art public transportation link between Wisconsin and the Midwest's dominant economic centers in Chicago and Minneapolis/St. Paul - making HSR a key component in the Translinks 21 economic development-transportation strategy.

WisDOT's intercity passenger travel forecasts show that with HSR, more than five million trips will be made via rail every year by 2020. Air and auto travelers, and people who may not have made their intercity trip at all, would be among those attracted to travel via high speed rail.

But for many reasons, the implementation of high speed rail cannot be a short-term or Wisconsin-only initiative. HSR carries a high cost and is characterized by rapidly-emerging technologies that call for careful studies of the best option. Further, HSR cannot provide service just within Wisconsin - it can only be effective if it links our communities with neighboring states and the national transportation network. As a result, HSR must be a partnership effort between Wisconsin, Illinois, Minnesota, the federal government and the private sector.

HSR will begin in the Chicago-Milwaukee corridor, with as many as sixteen daily round trips. With the Chicago-Milwaukee service in place, HSR will then be expanded to the Twin Cities, with direct service to Madison and as many as twelve daily round trips in the corridor.

To complement HSR, conventional Amtrak service will be expanded from two to four daily round trips in the Milwaukee-Green Bay corridor. Feeder buses will also continue to provide a direct link to conventional or high speed rail services from many Wisconsin communities.

Since many of the passenger rail service improvements in the proposal are interstate in nature and cannot be implemented unilaterally by Wisconsin, Translinks 21 assumes that appropriate federal/state and multistate cost-sharing arrangements will be developed as needed.

Wisconsin will need to contribute approximately \$462 million for HSR capital costs, with \$1.5 billion to be financed by Illinois, Minnesota and the federal government combined. With the vastly improved services attracting more riders and producing more revenue, Wisconsin's operating support for all passenger rail service statewide will fall to \$3-4 million annually.

Intercity bus service plan element

Intercity bus service has been declining

Intercity bus service - which provides travel between communities - plays an essential mobility role in Wisconsin. Surveys conducted by WisDOT and the Southeast-

R High speed rail will begin in the Milwaukee-Chicago corridor before expanding to Madison and the Twin Cities

n Wisconsin will need to contribute \$462 million for capital and operating costs for high speed rail service through 2020, with the remaining \$1.5 billion coming from the Illinois, Minnesota and the federal government share



ern Wisconsin Regional Planning Commission show that 50% of all intercity bus passengers are either under age 24 or over age 65, and 33% have no other mode of transportation available for their intercity trips.

But despite its critical role in connecting transit-dependent people to other cities, universities and medical centers, intercity bus service continues to decline in Wisconsin. Only ten companies provided service in 1993 - down from 75 carriers in 1944 - and 74 Wisconsin communities lost intercity bus service within three years of industry deregulation in 1982. Where it does operate, the service is at times inconvenient, taking out-of-the-way routes or running just once a day.

Currently, the ten intercity bus companies operating in Wisconsin provide service over a network of about 2,100 miles statewide. Nearly 900,000 passengers traveled via intercity bus in 1992.

Only one public program in Wisconsin now provides financial assistance to intercity bus companies, using federal funding authorized under Section 18 of the Federal Transit Act.

Under Section 18, federal funds provide 50% of the operating costs not covered by fares for an intercity bus route, if enough funds are available to meet the demand statewide. ISTEA requires states to set-aside 15% of their Section 18 funding to support intercity bus service.

Translinks 21 provides more regular, convenient intercity bus service

To address the mobility gaps for people throughout Wisconsin, the adopted Translinks 21 plan includes state funding to provide new or improved service in seventeen travel corridors statewide (see map) - many of which have no service today.

The intercity bus service - with a total cost of \$160 million over 25 years -will be phased-in. Demonstration routes will test its cost-effectiveness in areas of greatest need (such as central, northwestern and southwestern Wisconsin) before implementation statewide.

Through the intercity bus initiative, at least two daily round trip connections will be available to every Wisconsin community with a population over 5,000. The network will parallel Corridors 2020, since similar criteria are used to establish needs and select routes in both cases.

Direct intercity bus access will also be provided to universities, technical institutions and major medical facilities in Wisconsin - some of which may not be on Corridors 2020 routes. Such facilities are major - and often essential - trip origins and destinations, especially for persons who most frequently rely on public transportation.

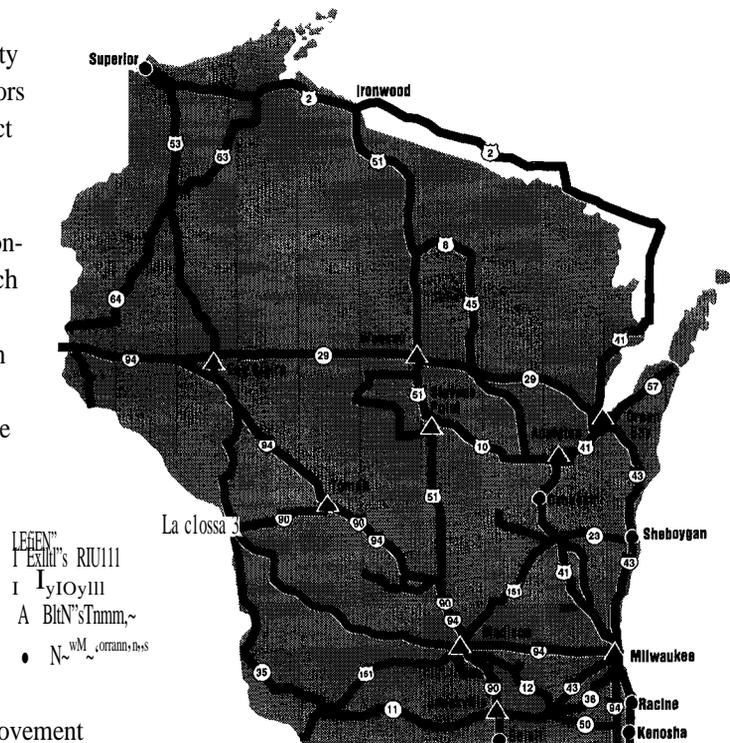
In order to ensure that the identified intercity bus services are initiated and maintained - and that they are operated with maximum efficiency and cost-effectiveness - WisDOT will award routes to private carriers through competitive purchase of service contracts. The state will then purchase buses for use by the carriers selected.

Facilities to accommodate intercity bus services in communities where scheduled stops are planned will be funded through the new Translinks 21 intercity passenger station improvement program (next page), which provides up to 80% of the costs for those

Despite its critical role in providing connections for the transit-dependent, intercity bus service continues to decline. Existing service is often either inconvenient or inadequate

Existing intercity bus service will be maintained and new or improved service provided to all communities over 5,000 population through a \$160 million investment over 25 years

Intercity bus service expanded to all communities over 5,000



Declining intercity bus service, ridership:

	1965	1992
Passengers	2.7 MR.	900,000
Route Miles	5,925	2,100

The passenger station plan will provide local public bodies with 60% of station costs [up to \$600,000] for projects that connect intercity, urban and specialized transportation services

facilities. An emphasis will be on providing stations that are served by more than one intercity bus carrier, and that connect with intercity rail, local bus or specialized elderly and disabled services.

WisDOT will also promote intercity bus services through various marketing efforts, such as preparing promotional materials and placing informational signs on highways that direct travelers to bus terminals and stops. These efforts will take place in partnership with bus carriers.

To ensure wider access to the new services, all intercity buses will be encouraged to accommodate bicycles. Services must also connect easily with local transit and specialized transportation services for elderly and disabled persons at the local, county and regional level.

Intercity passenger station plan element

New bus and rail service require better stations

Translinks 21 includes a number of ambitious initiatives to expand intercity bus and passenger rail services in Wisconsin. Implicit in these initiatives is the need for safe, attractive, efficient stations, which provide the essential link to public transportation services.

Translinks 21 includes a separate passenger station program

While it was not part of any of the four plan alternatives presented for public review during the Summer of 1994, the adopted Translinks 21 plan includes a separate state program to help pay the costs of constructing and improving intermodal passenger transportation stations.

The reason: Providing passenger stations can offer many benefits, and respond to many key values, of Translinks 21. Quality stations enable and encourage people to take advantage of different transportation modes - expanding their access to more choices. These facilities also help boost economic and community development by anchoring business and social activity.

The Translinks 21 passenger station plan will provide local public bodies (such as county or city governments) with 80% of the costs of station projects - up to \$800,000 - that connect intercity bus and rail with local bus, taxi, auto and specialized elderly and disabled services. Only intercity surface stations - and not air-only or city bus-only terminals - are eligible. To accommodate station projects in smaller communities, there is no minimum cost for eligibility.

Currently, there are 75 existing or planned stations in Wisconsin that could be eligible for program funding, including 16 passenger rail stations and 59 intercity bus stations.

Funded at \$25 million through 2005, program dollars would be used to improve existing stations or develop new stations in communities served by expanded intercity bus or rail networks. Establishing parking facilities, building pedestrian overpasses or underpasses to serve the station, improving rail or bus access to a station, and providing amenities such as automated ticketing systems or computerized travel information kiosks would also be eligible for state funding.

After 2005, program needs and funding levels will be reevaluated by WisDOT.

New interstate corridor study element

In several outreach meetings with business groups, citizens and local officials in southeastern and south central Wisconsin, WisDOT was told that the Translinks 21 draft plan overlooked a key travel corridor where commuter rail or bus transit may prove to be an appropriate solution.

Specifically, there was significant interest in studying potential rail and bus transit options in the broad intercity corridor linking Janesville-Beloit-Walworth County-northern Illinois. Two-way interstate commuting is rising in that corridor, and without viable regional transit options, many commuters are left with drive-alone auto travel as their only way to work.

As a result, Translinks 21 includes a new, comprehensive commuting study in the Rock-Walworth county corridor, focusing on potential new commuter bus or rail links to Metra rapid transit stations in northern Illinois.

The Rock-Walworth-northern Illinois corridor study will be performed in close cooperation with the appropriate regional planning commissions and metropolitan planning organizations, with an 80% state or federal, 20% local share of the study costs. This will be a comprehensive, preliminary study, with a full-fledged major investment study to follow if the results are positive.

Improved transportation links between south central/southeastern Wisconsin and northern Illinois were not the only interstate travel issues raised during the Translinks 21 outreach process. In other parts of the state, a growing number of people and businesses depend upon quality connections to cross-border metropolitan areas and economic centers for their livelihood.

These border areas should feel fully represented and fully served by the Translinks 21 plan. In partnership with other state DOTs and appropriate regional planning commissions, WisDOT will, as part of the adopted Translinks 21 plan, initiate several new efforts to coordinate highway and transit planning across state lines, in an effort to improve mobility and travel choices.

Specifically, in response to public input, these interstate planning efforts will focus on:

- Chippewa Falls-Eau Claire-Menomonie-St. Croix County-St. Paul-Minneapolis (with a special emphasis on transit connections to job sites and air services);
 - Janesville-Beloit-Walworth County-Northern Illinois;
 - Kenosha County-Lake County (IL);
 - Superior-Duluth;
 - La Crosse-western Minnesota;
 - Northeastern Wisconsin-Michigan's Upper Peninsula; and
 - Southwestern Wisconsin-Dubuque (Iowa).
- Study scopes and completion schedules will vary and be determined on a case-by-case basis.

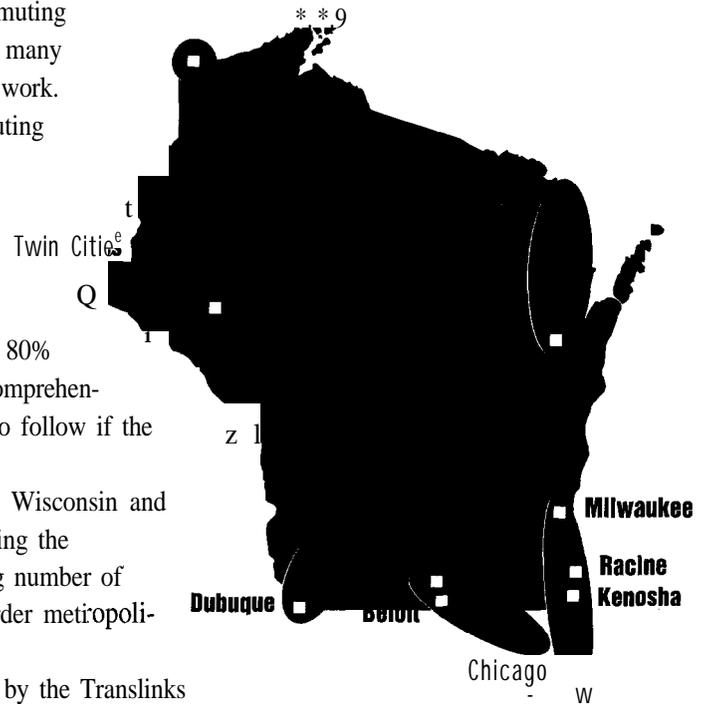
Air passenger transportation plan element

Air service carries most public intercity travel

Commercial air service is currently the dominant intercity public passenger transportation mode in Wisconsin. The state's system includes large airports and smaller general aviation facilities,

Nearly 400 commercial flights arrive in and depart from Wisconsin each day at the 13 airports with scheduled service. In 1993, nearly 3.6 million passengers boarded flights at state airports - a 2.2% increase over 1992. Milwaukee's General Mitchell International Airport dominates the commercial market, handling 54% of all commercial flights and 63% of passengers.

Potential Corridors for Highway/Transit Studies



WisDOT will initiate several new efforts to coordinate highway and transit planning across state lines in an effort to improve mobility and travel choices

WisDOT will initiate several new efforts to coordinate highway and transit planning across state lines in an effort to improve mobility and travel choices

Air travel is also served by corporate and personal aircraft which are based at over 700 landing facilities in Wisconsin. These aircraft and airports provide essential services to Wisconsin's business and recreation communities. In 1993, more than 2.5 million operations were serviced at non-commercial airports, which are referred to as general aviation facilities.

Commercial Airports



A major factor influencing airline service in Wisconsin - especially in the commercial market - is the practice of many air carriers to operate on the hub and spoke system. With this system, flights from smaller destinations are fed into a few major airports in large cities, such as Chicago and Minneapolis/St. Paul, where connecting flights can be accessed if needed.

Wisconsin's only hub is located at General Mitchell International Airport (GMIA) in Milwaukee, so many state communities must rely on access through Chicago or Minneapolis/St. Paul in order to reach national or international destinations.

Air passenger transportation plan promotes better service

The adopted Translinks 21 plan includes a number of airport improvement initiatives.

Specifically, WisDOT will provide an additional \$50 million in state funds over the 25-year period to replace anticipated shortfalls in the federal Airport Improvement Program (AIP). This additional funding is needed to continue maintaining, improving and expanding commercial and general aviation facilities in Wisconsin, and to accommodate future growth in air traffic,

Air service would be improved through an increased investment of \$90 million by 2020 and advocacy to provide more direct, non-stop flights

WisDOT will also invest an additional \$25 million to help airports purchase adjacent land in order to meet Federal Aviation Administration safety standards for instrument approaches. This need is caused by more airports utilizing satellites in the Global Positioning Systems - a new technology - for instrument landings. In Milwaukee County, an additional \$15 million in state funds will be provided to help implement the recently-approved GMIA Noise Study and Homeowner's Protection Plan. Other funding sources for this project include federal AIP entitlement funds, other special federal funds, local revenues or passenger taxes.

WisDOT will also take a number of other steps to ensure that adequate, quality airline service continues to provide a mobility option for passengers statewide, as part of an intermodal transportation system. These efforts will include:

- Improving connections between air and surface transportation modes - such as bus, rail and auto - at the state's major commercial airports;
- I Developing and promoting GMIA as a regional airport for the northern portion of the Chicago metropolitan area and northeastern Illinois;
- Preserving slots for commercial air passenger feeder service from appropriate Wisconsin airports at O'Hare, through intervention at the federal level; and
- I Increasing direct air connections between Wisconsin and national and international markets, through state lobbying efforts and promotional activities.

Passenger ferry service plan element

Private ferry service provides important transportation links

Private auto/truck ferry service is provided at several locations in Wisconsin, including the Lake Michigan Carferry Service linking Manitowoc-Ludington and other services connecting the mainland with Madeline and Washington Islands. The Lake Michigan Carferry serves primarily recreational travelers and some commercial truck traffic, while the Madeline Island and Washington Island services provide a public transit function for businesses and individuals.

Ferry plan studies the potential for better Lake Michigan service

The adopted Translinks 21 plan recommends undertaking a thorough analysis of the costs and benefits of improving the frequency of Manitowoc-Ludington ferry service and potentially adding new Milwaukee-Ludington service. This study, as envisioned in Translinks 21, would be co-sponsored by the Michigan and Wisconsin DOTs.

Translinks 21 recommends a study of the costs and benefits of improving the frequency of current ferry service and the potential of adding new service to Milwaukee

INTERMODAL URBAN PASSENGER TRANSPORTATION PLAN

During the past decade, WisDOT has dramatically increased its involvement in multimodal urban transportation. Far from being a rural highway agency, WisDOT now works very closely with MPOs, regional planning commissions and local government officials to find the most efficient and cost-effective ways of moving people from place to place within communities in Wisconsin. As noted earlier, MPOs are mainly responsible for urban transportation planning. The Translinks 21 plan will not itself propose any urban transportation plans as a result.

Urban mobility is challenged in several ways

Providing efficient urban mobility is by no means a simple undertaking. Several complex and interrelated factors influence state and local transportation policies in urban areas:

- **Urban mobility needs and options are diverse and complex.** Urban areas have more people needing to travel to more places - both in the city and to the surrounding metro-area - than any other part of Wisconsin. And since each trip need is different, a wide range of options - autos, carpools, buses, trains, bikes and walking - must all work together to provide efficient urban travel. Each mode serves a valuable role, but also has limits, as part of the overall picture.
- I Traffic congestion is on the rise.** Urban area residents and businesses must be able to interact with and reach other communities in the state and nation. With traffic congestion increasing and emerging limits to highway expansion in some areas, effective connections within and between urban areas must be maintained.
- I Land use and the environment are key factors.** Transportation has a significant impact on how land develops in urban areas, and on the quality of the urban environment. Sound decisions must be made to ensure that transportation complements both individual community development and environmental goals.
- I Technology is changing the face of urban transportation.** Telecommunication and information system advances will have a major impact on how people live, work and travel in urban areas. Many of these advances - such as "smart car, smart highway" systems - are best suited to densely-populated urban areas.

To meet the diversity of trip needs, a range of travel options must work together to provide efficient urban travel. Each mode serves a valuable role - but also has limits - as part of the overall picture

TranslInks 21 outlines efficient, integrated urban mobility networks

With this background, the adopted TranslInks 21 plan includes an intermodal urban passenger transportation component that truly fits its name. Utilizing a combination of highway improvements, potential expansion and technology measures, innovative transit programs, increased bicycle/pedestrian investments and expanded programs to promote ridesharing and vanpooling, WisDOT is charting an integrated, comprehensive, cost-effective course for working with local communities to improve their mobility and competitive position for the next century.

Urban highway plan element

Highways are the foundation for an intermodal urban transportation network

As described in the overview to the intermodal urban passenger transportation section, an extensive freeway, highway, road and street network serves as the anchor of all urban transportation systems in Wisconsin. Not only do highways carry automobile traffic - which comprises over 80% of all urban trips - but they are also essential for urban and intercity buses, carpools, vanpools, and even bicycle and pedestrian travel. As a result, urban highways must be maintained and improved for multiple uses in order for the urban mobility network to function efficiently. Highways also provide the critical link between cities and other statewide destinations.

In many Wisconsin communities, urban highways are facing significant challenges that must be addressed. Highways that were designed and built 30-plus years ago are reaching the end of their useful life and must be reconstructed, and they also must provide mobility to new economic and employment centers, developing in accordance with local objectives. Increasing traffic volumes are straining the ability of some highways to move people and goods. Environmental, social, community and financial factors set some limits on WisDOT's ability to expand highways to meet increasing travel demand - and expansion will not be the right answer in every case.

As a result, TranslInks 21 seeks to provide needed rehabilitation and improvements to urban highways, while complementing these efforts with new technologies that will maximize the existing capacity of highways and enable them to carry traffic more efficiently. The result will be benefits not only for auto travelers, but for all transportation modes that utilize highways as part of a comprehensive and interconnected urban transportation network.

Modernizing and reconstructing the Milwaukee Freeways is essential

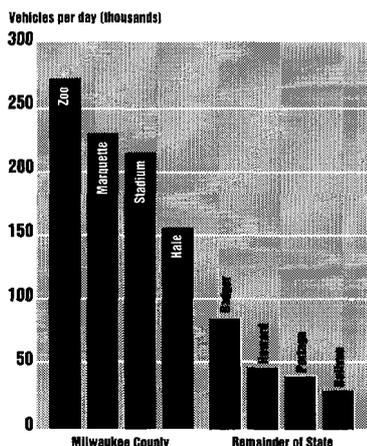
Freeways in Milwaukee County - including I-43, I-94, I-794, I-894, U.S. 45 and U.S. 41 - carry more people and goods per mile than any other highways in the state. The Milwaukee Freeways are also critical to the economy of southeastern Wisconsin and the entire state, providing an essential link for people and businesses to all areas of the nation.

As the busiest routes in Wisconsin, the Milwaukee Freeways are also some of the most deteriorated. When those freeways took shape in the 1960s WisDOT made decisions on how they would be designed and built using the best information and technology available at the time. It was impossible to predict the tremendous traffic volumes, and the weight of vehicles, that would utilize the system over the next 35 years. Although the system has been appropriately managed and maintained since then, the constant pounding of traffic is causing the system to wear out. Much of the system needs to be rebuilt in order to keep it functioning effectively.

Not only do highways carry auto traffic - which comprises over 80% of all urban trips - but they are essential for buses, carpools, vanpools, bicycling and walking

TranslInks 21 provides needed rehabilitation and improvements to urban highways, as well as new technologies to maximize the existing capacity of highways for more efficient operation

State's busiest interchanges are in Milwaukee County



Unless sizable investments are made to rebuild and modernize the Milwaukee Freeways over the next decade, traffic will be disrupted by extremely rough pavements, bridge weight restrictions and increasing accident rates - with devastating mobility, safety and economic impacts.

Two specific reasons call for a complete overhaul of the Milwaukee Freeways.

Deterioration. Pavements and bridges go through a predictable lifecycle. They can be resurfaced or rehabilitated after initial construction, but the extra life purchased by each repair gradually decreases as the underlying structures age. Eventually, complete reconstruction is required to minimize the costs of keeping a road open to traffic and avoiding more frequent disruptions of traffic. Otherwise, more frequent rehabilitation efforts are required.

Extensive field inspections show that many of the pavements and bridges on the Milwaukee Freeways are quickly reaching the end of their useful life, due to the tremendous loads of truck and auto traffic they carry, and that complete reconstruction is needed. Pursuing less costly options - such as more frequent resurfacing - will subject travellers and shippers to increasing inconvenience and delays without providing meaningful or long-term benefits.

Reconstruction of the Milwaukee Freeways will also carry a substantial cost. This is primarily because of the complexity of the bridge repairs that are needed. The design of some bridges in Milwaukee County does not allow for the surface alone to be removed and replaced, which would be less costly. Instead, the entire bridge structure has worn out and must be rebuilt. To enable the bridges to function efficiently well into the next century - for at least 35 more years - more advanced construction materials and techniques are required.

Safety. The Milwaukee Freeways are also experiencing safety problems, especially at key interchanges. The Marquette Interchange (where I-94, I-43 and I-794 meet) - which will need reconstruction beginning in 2000 - has an accident rate more than double the statewide average. The north leg of that interchange has an accident rate nearly five times the statewide average.

The cause of the large number of crashes at the interchange can be found in its dated design and the high traffic volumes using the facility. For example, left on and off ramps combine with entrance and exit ramps directly serving local streets to force many merging movements and acceleration/deceleration points for drivers. These hazardous maneuvers - which must be performed amidst through-traffic moving at 55 miles per hour - cause crashes. Left off ramps that are too short to accommodate exiting traffic also lead to bottlenecks, delays and hazards.

An updated design at the Marquette Interchange will remove all of the left on and off ramps to improve safety and traffic flow, provide easier right on and off access, and safely and efficiently accommodate both current and projected future traffic growth. A modern interchange design will, as a result, significantly reduce crashes at the Marquette. Updated designs will also be employed at several other key interchanges, including the Zoo and the Stadium.

To address the freeway problems in Milwaukee, the adopted Translinks 21 calls for an additional \$1.29 billion - above current investment levels of \$625 million, plus inflation - over 25 years to completely reconstruct and redesign the entire freeway system, without adding new, unrestricted lanes for vehicles carrying only a driver.

The only expansion work included in the proposed Milwaukee Freeway plan is on I-43 from Brown Deer Road to Bender Road (3.3 miles), which is planned to coincide with the need to replace the existing pavement. Freeway traffic management invest-



Unless sizable Investments are made to rebuild and modernize Milwaukee's freeways, the number of rough pavement miles, bridge weight restrictions and accidents will all likely increase - carrying significant mobility, safety and economic impacts

Translinks 21 provides:

- F** \$1.29 billion over 25 years to redesign, upgrade and reconstruct the freeways
- R** Citizen/local official involvement in planning to ensure facilities are good neighbors

ments are also planned, in order to allow existing freeway capacity to be used more efficiently.

Although comprehensive expansion needs are not included here, it must be recognized that traffic congestion is an ongoing and growing problem on the Milwaukee Freeways. A study of transportation alternatives in the I-94 East-West Corridor is attempting to find some solution to the congestion on that route. HOV lanes, busways and light rail are among the options being considered. The added cost to reconstruct interchanges to accommodate HOV lanes, at \$113 million, is NOT included in the adopted Translinks 21 plan, pending selection of the locally preferred alternative in the ongoing East-West Corridor study (see below for a full description).

Current projections indicate that much of the Zoo Freeway (U.S. 45) and large parts of the North-South Freeway (I-94/1-43) will become congested by the year 2010 and may require the consideration of similar options - again, at increased costs for those highway projects. In order to fully assess the need for HOV and major transit improvements to complement the Milwaukee Freeways, WisDOT will work closely with SEWRPC to initiate or complete ongoing Major Investment Studies and Congestion Management System Analyses of each proposal before it is included and funded in an amended Translinks 21 plan or metropolitan area plan.

Making urban highways “good neighbors” in Milwaukee and statewide

Highways play a key role -both positive and negative - in influencing the urban and neighborhood environment in which they are located. It is highly desirable to enhance the visual appearance, reduce the noise and reduce the intrusiveness of the highway in the urban environment. And it is just as important not to repeat a 1950s sense of freeway impact on the urban environment as it is not to repeat an obsolete highway design for 21st century traffic,

As a result, WisDOT will institute aggressive efforts to include citizens and local officials from the Milwaukee metropolitan area as partners in the effort to modernize and reconstruct the Milwaukee freeways. This expanded partnership will make sure that the freeways are “good neighbors” and have a positive, desirable impact on the community.

In keeping with its fundamental value of promoting stronger partnerships for community development, the Translinks 21 plan also includes a separate \$250 million program to fund a wide range of urban highway “amenities” statewide. These amenities could include such projects as lighting, noise barriers, landscaping and a range of other visual improvements.

Improving access on state highways in urban areas

As noted in the intercity passenger transportation section, the adopted Translinks 21 plan includes \$250 million to provide new interchanges and access to state highways in order to serve economic activity in both urban and rural areas of the state.

In urban areas, new highway access will be closely linked with local and regional land use plans and the proposed Transportation Impact Analysis process for large-scale, unplanned developments. New state highway access will also require local cost-sharing for new facilities.

Making use of state-of-the-art technology

The adopted Translinks 21 plan calls for the use of new technology to ease congestion without adding new highway lanes in key urban areas. One example is the \$9 million MONITOR system of on-freeway cameras, computerized traffic detectors and changeable message signs now being implemented in Milwaukee County, WisDOT will

also continue to work with neighboring states on “smart car, smart highway” projects in key interstate corridors.

In other cities statewide, WisDOT will help finance technology-related initiatives to improve traffic flow - such as coordinated traffic signals, intersection improvements and efforts to manage access points to highways - through its State Highway Rehabilitation Program.

Urban transit plan element

Finances, declining ridership and service reductions challenge transit

Public transit service - in the form of fixed-route bus or shared-ride taxi service - currently operates in 60 Wisconsin communities. While public transit provides the only available form of mobility for many young, elderly, disabled and low-income persons, both ridership and service levels have declined steadily since 1980.

From a high of 289 million passengers in 1950, total ridership on Wisconsin’s urban transit systems fell to 75 million by 1993 - a decrease of 75%. During the same period, revenue miles and revenue hours - two key measures of how much transit service is provided - dropped 38%.

Three important factors have contributed to the decline in transit service and ridership.

First, Wisconsin’s public transit systems are faced with unstable, unpredictable and steadily declining levels of federal financial support. While the State of Wisconsin now pays 42% of all transit system operating costs - and has increased its transit funding 70% over the past seven years - constant dollar federal transit operating assistance has been decreasing steadily for more than a decade, despite the strenuous efforts of Wisconsin’s Congressional delegation to reverse the trend.

Second, local property taxes are increasingly burdened and unable to cover the gap in transit operating assistance left by declining federal aids. In Wisconsin, property taxes are usually the only source of local revenue used for transit - but raising already high property taxes to increase transit support is an increasingly unattractive option for local officials and citizens.

Third, most transit systems are operated by municipal governments, and they operate only within a jurisdiction’s boundaries. But today, more Wisconsinites need to travel between communities within a metro area. Today’s fragmented transit services cannot meet those needs.

Increased fares, decreased service and a loss of transit ridership have been the overall result.

Translinks 21 seeks to stabilize, expand transit services

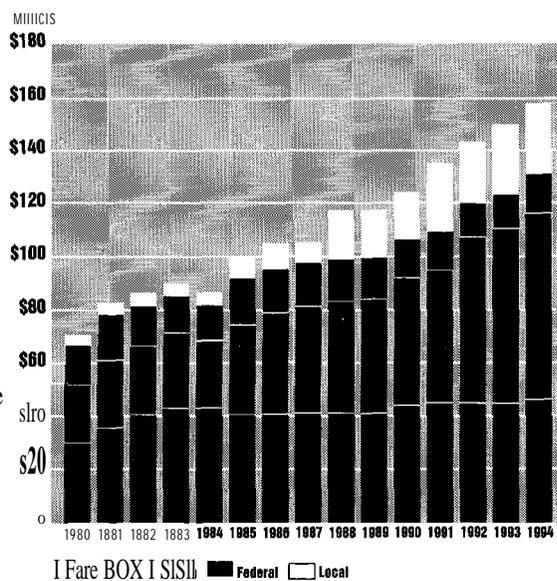
The urban transit component of the adopted Translinks 21 plan includes the resources necessary to support a basic level of transit service that provides mobility to all citizens - particularly those who have no other transportation choices - and to encourage the implementation of new services that make transit a viable and attractive transportation option. In the process, other key benefits of transit service - in terms of reducing traffic congestion, promoting environmental quality and boosting economic development by linking people with jobs and services - will be realized.

A five-part initiative is included in Translinks 21 - carrying a total 25-year cost of \$925 million above current investment levels, plus inflation - to achieve these key transit goals.

Key transit initiatives:

- \$300 million to stabilize external financial assistance. Provide 50% of operating costs for Milwaukee and Madison urbanized areas, 65% of costs in areas between 50,000-200,060 population, and 70% in areas under 50,000 population
- \$400 million to expand existing transit service
- \$200 million to develop regional transit service
- \$25 million for advertising and promotional campaigns
- Work with large metro areas in developing Metropolitan Transit Cooperatives, which would coordinate and manage metropolitan-area transit services across local jurisdictions and develop a non-property tax source of local revenues for transit

Declining federal aid, local cost pressures impact transit



Stabilizing external finances is the critical first step

First, the adopted Translinks 21 plan restructures the state transit operating assistance program - at a total 25-year cost of \$300 million -to provide a stable and dependable source of external financial support for transit operations. This, according to transit managers and operators, is absolutely the first critical step for maintaining existing service levels.

Under this initiative, WisDOT will modestly increase and then maintain the percentage of operating costs covered with state revenues, as federal operating assistance is phased out. The combined state/federal share of operating costs will be 50% for the Madison and Milwaukee urbanized areas, 65% for urbanized areas with populations between 50,000 and 200,000, and 70% for small urban areas with populations between 2,500 and 50,000 (this would include bus and shared-ride taxi systems). Federal operating assistance - as available - will help offset the state share of costs.

Expanding service requires even stronger partnerships

With external financial support for transit operations stabilized and made more predictable, the second Translinks 21 initiative for urban transit - which will be funded at \$400 million through 2020 - aims at increasing service statewide by 25% over current levels.

State funding will pay a large initial share of operating costs for new routes, route extensions, more frequent service, expanded evening and weekend service or non-traditional services (such as shuttles, vanpools or subscription services) - reaching 80% in the first year and 70% in the second year. This will enable transit systems to expand services - with minimal risk - and build up the needed ridership and support to make the service permanent.

After two years of operations for the expanded service, state financial assistance will return to the tiered 50%-65%-70% level of operating support outlined in the first initiative.

Regional transit services will respond to unmet travel needs

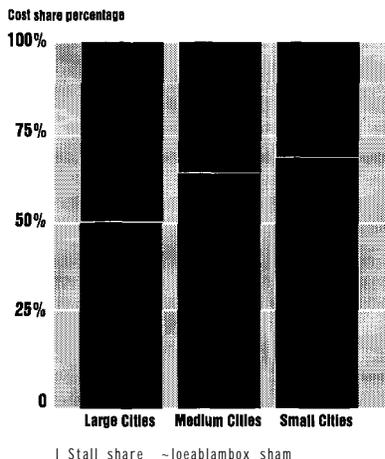
The third Translinks 21 urban transit initiative involves developing regional transit services, in partnership with local governments, at a 25-year cost of approximately \$200 million.

The regional transit initiative responds to new and growing mobility needs that have emerged due to the evolving character of urban and metropolitan areas. Since World War II, residential, employment, shopping and other activity centers have located with increasing frequency outside the boundaries of traditional central cities - resulting in a complex web of these centers throughout wider metropolitan areas. While people need to move between these metro-area centers each day, public transit systems often operate only within a single jurisdiction - making it very difficult and often impossible to take a bus to a neighboring community a few miles away. Auto travel becomes the only option for traveling between metro-area centers - at a time when metropolitan areas are increasingly looking to transit to help address congestion problems.

Through Translinks 21, state funding will be provided for local governments, or private companies under contract to local governments, to develop regional transit services across jurisdictions within metro areas. A mix of bus or rail, feeder buses, shuttles, vanpools, subscription services or other means could be used to carry passengers, with transfer connections at key transit hubs.

The regional transit initiative will be implemented in three phases: First in Milwaukee- Racine-Kenosha and Dane County, second in the Fox Valley, and third in smaller urban areas.

a-tier funding approach
erovldes stable transit funds



New partnerships will help start and fund regional transit service

Several metropolitan areas, as noted above, are struggling with the need to bring down the invisible lines that stop buses at city or county borders, and make it very difficult to establish truly regional transit services. Success in this area will be critical as more regional transit projects are developed.

Recognizing this challenge, WisDOT will work with local governments and MPOs in larger metropolitan areas - if they are interested, and at their request - to help develop new Metropolitan Transit Cooperatives (MTCs) that can more easily coordinate and manage shared transit services that cross several jurisdictional boundaries. South-eastern Wisconsin, Dane County and the Fox Valley could be likely areas for future MTCs, if they choose.

In the face of declining federal operating assistance, Wisconsin's urban transit systems are also living in an environment of constrained local property taxes that makes it very difficult to close the financial gap left at the federal level - without cutting service or raising fares.

In the largest urban areas with extensive transit services, this creates a pressing need for access to a viable non-property tax source of local revenues to pay for increasing transit services and costs. Wisconsin's constitution appears to limit widespread opportunity for new local revenue sources, but a discrete source of local revenue for transit in larger urban areas may be feasible.

Therefore, WisDOT will also work with these urban governments and/or MTCs - again, if they are interested, and at their request - to help develop access to non-property tax sources of local revenues dedicated to transit, to ensure adequate support for current and future service.

Marketing gets the word out

The fifth Translinks 21 urban transit initiative is marketing. Over the 25-year period, \$25 million will be provided for market research and multimedia advertising campaigns on a statewide or regional basis, in cooperation with transit system managers and operators. The focus will be on attracting new riders and boosting the image of transit.

Milwaukee East-West Corridor plan element

State, local officials team up to shape a transit vision

For the past two and a half years, WisDOT has been working closely with local officials represented by a Study Advisory Committee (SAC) to investigate major transit improvements in the East-West Corridor, which runs parallel to I-94 between Milwaukee and Waukesha.

In December 1993, the SAC issued a preliminary recommendation for an alternative package of transit improvements which includes the following three components:

- I A 16-mile light rail transit system from Glendale to the Milwaukee County Grounds, with a total estimated construction cost of \$540 million.
- I A 17-mile busway or high occupancy vehicle facility (for vehicles carrying more than just a driver), with an estimated construction cost of \$250-\$350 million.
- I A 30% increase in local bus service, with half of the improvements in Milwaukee County and the other half occurring in Waukesha County.

At a May 1994 meeting of the SAC, several concerns with the proposal were voiced. Specifically, Milwaukee County officials questioned the possibility of carpools using a busway facility, and City of Milwaukee officials objected to certain alignments for the proposed light rail transit facility and requested a study of potential additional locations for that facility.

Likely Areas for Future MTCs



WisDOT will work with interested local governments in developing Metropolitan Transit Cooperatives to coordinate and manage shared transit services across local government boundaries

Other transit initiatives:

- Reserves \$469 million of federal funding earmarked for East-West Corridor Study recommendations
- Commits \$70 million in grants to encourage more people to choose alternatives to driving alone
- Commits 60% state/federal funding for federally required major investment studies for potential transit initiatives

Translinks 21 will continue studies, but keep funding on band

Given the uncertainty and ongoing nature of the major transit improvement study in the East-West Corridor, Translinks 21 includes no specific recommendations for the corridor.

Instead, the federally-required Alternatives Analysis and Major Investment Study for the East-West Corridor will proceed to answer critical questions, such as what is the most cost-effective transit improvement package, where will it be constructed, what will it cost, who will pay, and whether there is sufficient public support. WisDOT, in cooperation with SEWRPC and local officials in the region, has initiated the first phase of preliminary engineering.

Once the studies are completed, and a locally-preferred transit alternative is selected for the East-West Corridor, the Translinks 21 plan will be amended to accommodate and fund the state's share of the selected transit improvement. This will allow for a recommendation now on the reconstruction/modernization of the Milwaukee freeways, while leaving the closely-related light rail/busway/high occupancy vehicle lane decisions to be made in a timely way by the appropriate local planning and public involvement processes now in progress.

Once a decision is made on a transit improvement for the East-West Corridor, the \$289 million in federal Interstate Cost Estimate funding earmarked for Wisconsin, and an additional \$200 million federal transit capital grant authorized for the state, will be committed to the project,

Commuter transit studies element

Major investments require careful study of the options

ISTEA and the U.S. DOT require state DOTs and MPOs to prepare comprehensive Major Investment Studies of key, major transportation investment proposals. These efforts are either to be part of the overall comprehensive transportation planning process itself, or conducted as separate studies before the projects are included and funded in state or MPO plans.

In addition to the Milwaukee-Waukesha East-West Corridor discussed above, the comprehensive regional transportation plan adopted by SEWRPC identifies a series of additional major transportation investments in the seven-county southeastern region that will require Major Investment Studies before they are formally adopted in either the regional plan or Translinks 21. Major Investment Studies may also be needed for other transportation investments that could be identified in other metropolitan planning processes, such as Vision 2020 in Dane County.

Several Major Investment Studies will be conducted

Specific proposals that will require Major Investment Studies include:

- I A consideration of whether new regional transit services extending from Milwaukee to Racine and Kenosha, to Oconomowoc, to West Bend and to Grafton should be provided by commuter rail passenger train or by commuter buses,
- I Potential additional busway facilities either within, or parallel to, congested freeways in the region other than the I-94 East-West Corridor. Those freeways include I-43 North, I-43/I-94 South, US. 45 North, and I-894.
- I A consideration of whether express transit service should be provided by light rail or a busway in the corridors extending from the Milwaukee central business district south to General Mitchell International Airport, southwest to the Southridge area, northwest to the Northridge area, and across town along 27th Street,

WisDOT provides a firm cost-sharing commitment

To ensure that needed MISs occur in a timely way, the adopted Translinks 21 plan specifically includes \$12.5 million to provide the standard 80% state or available federal funding for all MIS efforts. Local governments will be required to pay only 20% of study costs.

Major projects for study, such as those listed above, will be identified and prioritized collaboratively with the MPOs as new plans are developed and modified.

Milwaukee-Racine-Kenosha commuter rail is the top priority

As its first priority, the adopted Translinks 21 plan specifically commits to promptly undertaking and rapidly completing the pre-MIS feasibility study for the proposed Milwaukee-Racine-Kenosha commuter rail line, in cooperation with SEWRPC. WisDOT envisions that a complete MIS for this potential project, if the feasibility study warrants, will be finished during 1996.

Transportation Demand Management plan element

Transportation Demand Management helps systems work more efficiently

Transportation Demand Management (TDM) includes a wide range of strategies designed to eliminate or reduce the demand for travel. Increasing bicycle and pedestrian use, shifting travel to off-peak hours of the day, encouraging the use of transit or carpools, and even allowing people to work or shop from their homes are all examples of these strategies in action.

The goal of TDM is to enhance the use of many transportation options to reduce congestion and address broader environmental and air quality concerns related to auto and highway travel.

TDM will become increasingly important in many urban areas of Wisconsin, as communities face growing congestion, and as major employers in the southeastern part of the state face federal requirements to reduce drive-alone commuting by their workers. WisDOT is taking the lead in helping employers identify, develop and implement TDM strategies in many of the state's larger urban areas, with a commitment anchored by a \$300,000 annual TDM Grant Program.

Translinks 21 boosts WisDOT's demand management involvement

The adopted Translinks 21 plan includes a four-part TDM initiative carrying a total cost of \$70 million - above inflation and current investment levels - over 25 years.

First, WisDOT will increase its research and analysis of which TDM strategies may be most appropriate for Wisconsin, through joint studies with universities and other states. WisDOT will also serve as a clearinghouse for information and research on TDM options used nationally.

Second, WisDOT will continue to support and administer its existing TDM programs, and create new TDM programs at the regional, local and employer level. Expanded park and ride networks and rideshare matching programs, implementation of TDM activities at state government worksites, and support for tax incentives that encourage companies to form and participate in vanpools or provide employees with travel allowances instead of free parking will be pursued.

Third, funding for the TDM Grant Program will be increased by \$40 million over 25 years, with a focus on providing start-up and support resources for transportation management associations (TMAs). TMAs are partnerships between neighboring public and private sector employers designed to coordinate and maximize the efficiency of their TDM strategies. The Wisconsin Rideshare Van Loan Program, which is currently



TDM will become increasingly important as communities face growing congestion and major employers in southeastern Wisconsin are required to reduce drive-alone commuters

WisDOT will provide TDM expertise and technical information to interested employers and local governments and ensure networks are in place to tailor TDM strategies to specific areas

funded at \$250,000 annually but is grossly underutilized and duplicated by other public programs, will be eliminated.

Fourth, WisDOT will take a much more “hands-on” approach to providing expertise and technical information on TDM to interested employers and local governments. Working with business and university groups, the department will help ensure that needed financial and support networks are in place to forge individualized TDM strategies that work in each area.

Urban mobility information, education element

As noted, for Wisconsin communities facing air quality and congestion problems, getting more people to use alternatives to driving alone is desirable. But realizing this goal - WisDOT learned during its outreach process - may require more than providing more buses or bike lanes.

In response, the adopted Translinks 21 plan includes a comprehensive three-part information and education initiative designed to maximize the efficient use of urban transportation networks.

In urban areas, WisDOT will work with the community to inform the public on the merits of responsible driving, and on how to use public transportation. WisDOT will also encourage people to be “good citizens” by saving energy and using other modes - such as walking, bicycling and transit - where feasible. The department will also help people understand the air quality, congestion relief, mobility and other benefits that can be realized by using non-driving modes. A special emphasis will be on developing educational materials for use in schools.

First, the information initiative will inform people about the responsible use of their automobiles - not discouraging driving, but instead, providing reminders about the benefits of driving only when necessary, combining errands, and carpooling or taking transit when possible.

Second, WisDOT will work with transit system operators to promote and educate people about how to use their systems - making the maze-like world of routes and schedules understandable and user-friendly through informational efforts.

And third, WisDOT will work with educators to develop school programs on the importance of responsible driving and use of alternatives - to develop good habits for tomorrow’s commuters.

Funding for this educational initiative will be provided through the TDM program.

Bicycle and pedestrian plan element

Biking, walking recognized as viable travel options

Increasingly over the past several years, WisDOT has begun to more actively recognize bicycle and pedestrian transportation as legitimate travel options in Wisconsin’s urbanized areas.

To reflect this growing awareness, WisDOT has moved toward considering the needs of bicycles and pedestrians on relevant urban state highway projects. Paving highway shoulders and providing wider curb lanes are becoming standard practice where the need is evident - at a fairly substantial cost - when highways are reconstructed. Those projects are financed through state highway construction and rehabilitation programs.

Through a series of other state and federal programs, WisDOT provides approximately \$5 million annually for stand-alone bicycle projects included in local or MPO plans. WisDOT pays 75% of the costs for providing sidewalks, generally when they are requested by communities,

Translinks 21 provides for a \$50 million supplement to existing federal funding available for stand-alone bicycle and pedestrian projects, and a new \$50 million state-funded bicycle and pedestrian facilities program. State cost share of pedestrian improvements on state highways increases from 75% to 80%

A stronger role for bicycle and pedestrian travel lies ahead

Over 25 years, the adopted Translinks 21 plan provides for a \$50 million supplement to existing federal funding available specifically for stand-alone bicycle and pedestrian projects, and a new \$50 million state-funded bicycle and pedestrian facilities program. Also, WisDOT will increase its share of costs for pedestrian improvements on state highways from 75% to 80%.

Where urban or metropolitan area bicycle plans are developed, WisDOT will, under its adopted Translinks 21 plan, incorporate identified bicycle accommodations into its urban state highway projects. Accommodations will be made at the time of construction or reconstruction of highways - and not as stand-alone projects - to minimize their costs. This represents a potentially major commitment, since providing bicycle accommodations when reconstructing a four-lane urban street or highway can increase the overall project costs by 3-4%.

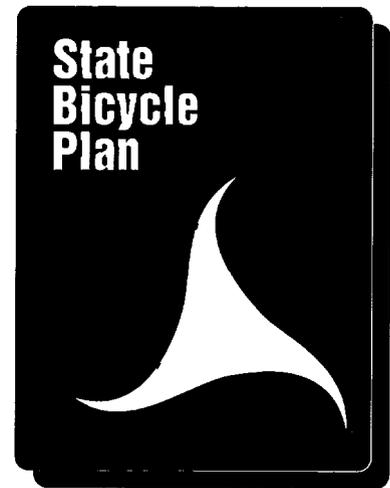
On urban state highways where bicycle accommodations are not called for in urban and metropolitan plans - but where they would be justified by their level of use - WisDOT will provide the needed accommodations where feasible. Off of urban state highways, WisDOT will also help provide bicycle accommodations if they are either planned or justified by projected use.

These same strategies apply for pedestrian facilities, such as sidewalks on both sides of streets or overpasses and underpasses, in urban areas,

A comprehensive State Bicycle Plan will be developed

To consolidate and coordinate WisDOT's bicycle investments, Translinks 21 commits to the development of a comprehensive, first-ever State Bicycle Plan. The state plan will build upon MPO commuter bicycle plans as they are implemented, and will address commuter bicycle needs outside urban areas as well. The state plan will also include safety, training and education elements designed to support increased bicycle usage in Wisconsin.

The State Bicycle Plan will re-evaluate the level of ongoing funding needed for its implementation, as part of the State Intermodal Transportation Plan outlined in Translinks 2 1,



A State Bicycle Plan will build upon MPO plans, address commuter needs and include safety, training and education elements

RURAL AND SPECIALIZED ELDERLY/DISABLED PASSENGER TRANSPORTATION PLAN

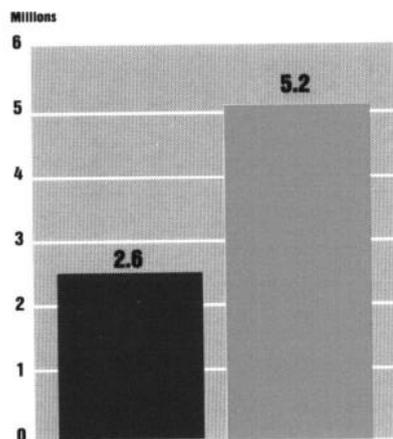
Rural passenger transportation and specialized transportation for the elderly and disabled (in the form of lift-equipped buses and vans that operate on fixed schedules or on demand) are significant issues when examining the state's future mobility options. Currently in Wisconsin, many counties with large urban areas provide services for the elderly and disabled in cities only, leaving many rural areas with limited or no specialized service. Even some rural areas with service limit it to priority trips only, or do not operate in the evenings and on weekends.

Two state programs fund specialized transportation

WisDOT administers two programs designed to support rural and specialized transportation. These programs are limited only to elderly and disabled persons, though the general public may also be able to use the service on a "space-available" basis. One is the County Elderly and Disabled program, which will be funded at \$5.2 million in 1995 and distributes funding to counties. Through a separate program, WisDOT will provide \$1.8 million in 1995 to private non-profit organizations to purchase vehicles to transport elderly and disabled passengers.

Persons age 65 and older accounted for nearly half of Wisconsin's net population growth in the 1460s, and the elderly population will see another 50% increase in its numbers during the next 25 years

County Elderly & Disabled SowiCoS



One-way trips provided
I cllmm 1e111 Ikl lml



The counties to which these funds are allocated may establish criteria that limit the person's ability to utilize the service. These criteria may include trip purpose priorities, such as medical and nutrition needs. The need for transportation is influenced by such factors as a person's ability to drive, financial capacity to purchase and operate a vehicle, and availability of their existing vehicles. The program, in turn, is structured around the target group which is identified by the county, and the service levels based upon the available funds and revenues collected.

While the County Elderly and Disabled Program and the Elderly and Disabled Capital Assistance Programs provide annual funding of \$7 million specifically targeted to specialized transportation, WisDOT also provides an estimated \$13 million for elderly and disabled transportation services through its public transit programs.

The elderly and persons with disabilities represent a substantial portion of the ridership on public transit systems, particularly in the small communities where shared-ride taxi services are supported with state and federal funding.

Growing needs require a strengthened commitment

Even with all these WisDOT programs - and other programs administered by agencies such as the state Department of Health and Social Services - there are a number of priority trip needs and service gaps that are not being met in Wisconsin's communities and rural areas, as noted above. Additionally, there is often a lack of regionwide or countywide planning of specialized transportation services, which results in duplication of services to some destinations, while making access to others limited or nonexistent.

Existing "gaps" in mobility for elderly and disabled persons who cannot drive or do not own a car - if left unaddressed - will grow much more serious in the future. Persons age 65 and older accounted for nearly half of Wisconsin's net population growth in the 1980s, and the elderly population will see another 50% increase in its numbers during the next 25 years.

Increased funding, better planning will fill mobility gaps

To address the significant and growing specialized mobility needs of Wisconsin's elderly and disabled community, the adopted Translinks 21 plan includes a four-part initiative to increase state investments for improved services.

The total cost of the rural and specialized transportation plan included in Translinks 21 is estimated at \$220 million, above current levels, by the year 2020. In addition to the increase in WisDOT support, the department will work to ensure that the investment from other state, federal and local sources continues at current levels, adjusted for inflation, so that increased WisDOT funding produces more and better services without replacing local or federal dollars.

Increased County E&D funding will double the trips

Translinks 21 includes a \$195 million increase above current levels over the entire 25-year period for the County Elderly and Disabled (Section 85.21) Program. This funding increase will provide 2.6 million additional one-way trips per year - double the current level - with an emphasis placed on satisfying priority trip needs and closing some service gaps.

Increased capital assistance funding will buy more vehicles

An \$10 million increase over the 25-year period is included for the Elderly and Disabled Capital Assistance Program (Section 85.22), which helps purchase transportation vehicles. This funding increase will enable the purchase of an additional 275 new specialized transit vehicles.

Coordinated programs will make getting places easier

A new \$15 million initiative is included to enable more efficient and cost-effective use of existing specialized transportation program resources through improved service planning and coordination on a countywide and regionwide basis. This program will be phased-in, with one or a few demonstration projects in selected counties at first, to determine its effectiveness.

Improved planning will also bolster service

The Translinks 21 plan provides a WisDOT commitment to work with counties and aging coalitions to determine how to improve specialized transportation services, and evaluate the appropriate funding level for those services. The results of this ongoing evaluation will be used to guide and possibly modify specialized transportation investments as Translinks 21 is amended.

Expanded shared-ride taxi services further improve mobility

Through its expanded transit operating assistance detailed in the urban passenger transportation section, WisDOT will actively encourage communities of at least 2,500 residents to implement shared-ride taxi services, providing an additional mobility option to all citizens.

Wisconsin's elderly:
In 10 Wisconsin counties, over a quarter of the county's population is 60 or older: Iron, 31%; Vilas, 30%; Marquette, 26%; Adams & Burnett, 27%; Waushara & Sawyer, 26%; Price, Washburn & Green lake, 25%. At least one-fifth of the population is 60 or older in an additional 32 counties

INTERMODAL FREIGHT TRANSPORTATION PLAN

Dramatic change is underway for Wisconsin businesses.

As companies increasingly compete in a global economy, markets and competitors that at one time may have been located across the state are now just as easily found from Mexico to Malaysia. The rapid growth in international trade - with Wisconsin exports reaching an annual \$8 billion level - has prompted many firms to change the way in which they do business.

- More goods are being shipped over longer distances than ever before.
- Shipments of high-value, low-weight products such as computers are increasing.
- Intermodalism is on the rise - involving truck-rail, truck-ship, truck-air or rail-ship movements - in response to the demands of a competitive world economy. Examples are the growing use of containers movable on both trucks and trains; and "Road Railer" - semi-trailers with detachable rail carriages.
- Just-in-Time operations - where companies move raw materials into and finished products out of factories quickly at the time of production - are also increasing as companies seek to reduce inventories and the time it takes to fill orders.
- Responding to these challenges with effective transportation solutions will be critical. Businesses that have access to fast and reliable transportation can save money. These lower transportation costs free more resources for businesses to invest in new equipment or operations. And that means more jobs, and continued economic expansion, for Wisconsin communities.

Experts tell WisDOT what the economy needs

In several meetings with shippers and transportation industry representatives, WisDOT heard what it will take to shape a successful freight transportation system for the 21st century:

The state's economy - and trends in the growth of freight shipments and how they are carried - call for a wide range of efficient and interconnected modes.

Wisconsin's top 10 exports

1993 - By industry Group

1. industrial machinery, computer equipment \$2.63 Billion
2. transportation equipment
3. instruments/related products \$706 Million
4. tele./elec. equip.
5. food & kindred products
6. fabricated metal products \$316 M
7. paper & allied products \$313 M
6. agricultural production-crops \$293 M
9. chemicals & allied products \$262 M
10. rubber & misc. plastics products \$197 M

Fast, reliable transportation saves money, which can be invested in new equipment or operations. That means jobs and continued economic expansion in Wisconsin

Expert panel members:

Donald Schneider, Schneider National, inc., Green Bay

Edward Burkhardt, WI Central Ltd., Rosemont, IL

Kenneth Szalai, Port of Milwaukee

Robert Immonen, Airport Systems, inc., Milwaukee

John Didion, Didion, inc., Johnson Creek

John Peterman, Rexnord Corp., Milwaukee

Paul Rasmussen, Universal Foods Corp., Milwaukee

Karl Alien, General Electric Medical Systems, Waukesha

Debra Stevens, Green Bay Packaging, inc.

Dan Kirkland, Trane Co., La Crosse

Butch Johnson, Johnson Timber Co., Hayward

Businesses - as well as their customers and workers - rely on safe, efficient and well-maintained highways

Shippers are increasingly taking a “total logistics” view of their transportation needs.

Rather than looking at transportation needs in isolation, companies now look at their entire production process from resource acquisition to product distribution - and ways to save time and money along every step of the way.

Development of a statewide, integrated, grid-like system plan that includes all modes and provides alternatives to shippers and freight movers is critical.

The adopted Translinks 2.1 intermodal freight plan is a market-driven response to these issues - including the right tools to help Wisconsin companies continue to succeed worldwide.

State highway plan element

Trucking carries the lion’s share of freight in Wisconsin

Nearly 160 million tons of raw materials and finished products are carried on Wisconsin’s highways and roads every year. Forecasts show that truck shipments will continue to grow significantly over the next 25 years, by as much as 50% over its current level.

Obviously, these figures make highways critically important for freight movements and economic development in Wisconsin. But highways also play a key economic role for another reason. Not only do most products arrive and depart from Wisconsin companies via the highways, but most of their customers and workers do as well. For industries to thrive and our economy to remain competitive, businesses must have access to safe, efficient, well-maintained highways. Highways provide truck access to intermodal rail, port and air cargo terminals as well.

Highway system preservation, expansion and improvement will aid shippers

As outlined in extensive detail in the intermodal passenger transportation section of this report, Translinks 2.1 calls for significant increases in state investments to preserve, improve and expand state and Interstate highways throughout Wisconsin. These initiatives will provide significant benefits to highway shippers in terms of improved safety, efficiency and travel times, and in terms of providing better connections to intermodal freight facilities.

More specifically, the highway improvement initiatives include the completion of Corridors 2020 Backbone routes and currently-approved major highway projects by 2005, detailed analyses of the potential future need for additional highway expansions on 1,000 miles of state and Interstate routes that will experience congestion problems after 2005, additional funding to meet all emerging and existing pavement, bridge and interchange needs on Corridors 2020 multilane Backbone routes, added investments to meet emerging needs on non-Corridors 2020 Backbone routes, and the modernization and reconstruction of the freeway system in Milwaukee County.

All season highways will boost central, northern economies

During the “spring thaw” period of March through May, weight restrictions are placed on 315 miles of state trunk highways in central and northern Wisconsin. These weight restrictions pose an economic disadvantage, since state highways are vital links for transporting agricultural and forest products that are most cost-effectively shipped in large, maximum-weight loads.

Demands to upgrade weight-restricted roads were strongly expressed by businesses, regional planners and truckers during public meetings held as part of the Translinks 2.1 outreach process.

The reason why seasonal weight restrictions must be placed on some highways is that they are typically old and have weaknesses in the base that supports their pavements. Inadequate bases make the highways unable to carry heavy loads - at least, without suffering extensive damage - while the ground is saturated during the spring months.

Temporary load limits are the solution. This forces haulers to either suspend operations, reduce the size of the loads they haul, or use more indirect routings. All of these options hurt businesses and the economy by reducing income or increasing the costs of products.

Highway improvements to correct these problems are available, requiring reconstruction of the pavement on the existing highway alignment. Areas of marshy subsoil would be excavated and an adequate pavement base would be provided throughout. Significant modifications to curves and hills would usually not be justified given the relatively low traffic volumes on these roads.

In an effort to improve the economic competitiveness of portions of central and northern Wisconsin, Translinks 21 includes \$60 million over 25 years to eliminate seasonal weight restrictions on the most critical 100 miles of state highways that are affected. Given the limited funding for this initiative, highways will be selected for upgrades on a priority basis, considering their level of importance to the statewide and local economies and their traffic loads.

Freight rail @an element

Market trends show increases in rail use

With increases in rail efficiency and truck-rail intermodal trends, traffic on Wisconsin railroads has grown in recent years and is forecasted to see continued growth in the future. Currently, 4,100 miles of railroads criss-cross Wisconsin. All but six counties are served by this system that connects Wisconsin to national and international gateways in the region.

Translinks 21 commodity forecasts show a 73% increase in tonnage moved by rail through the year 2020. This amounts to an increase of about 83 million tons - from 113 million tons in 1992 to 196 million tons in 2020. This market-driven plan forecast reflects more than a five million ton increase in commodities shipped via truck-rail intermodal methods.

Freight rail plan establishes a market-driven system

The Translinks 21 freight rail plan element embodies a market-driven freight rail system. Forecasts of future rail commodity movements were used to identify gaps in current rail facilities, as well as areas of the state where increased intermodal truck-rail activity is likely.

The total 25-year cost of the freight rail system plan improvements outlined below is \$300 million - or \$160 million over the current \$140 million investment level. This includes \$250 million in potential projects to enhance rail efficiency, which will be funded through a revolving low-interest loan program supported by state bonds (with the debt service paid by Transportation Funds). By using bonds, the amount of loans offered can be more than doubled in the short run, from 1995-2005. Over the entire 25

Forest products, a# industries critical to state's economy:

WI forest product industries

■ No. of Companies - 1,804

H No. of Employees - 94,032

w Leadnu employer In 28 counties, 2nd or 3rd largest In 14

■ Total Payroll - \$2.9 billion

Value 01 Shipments - \$14.3 billion

WI auriculture

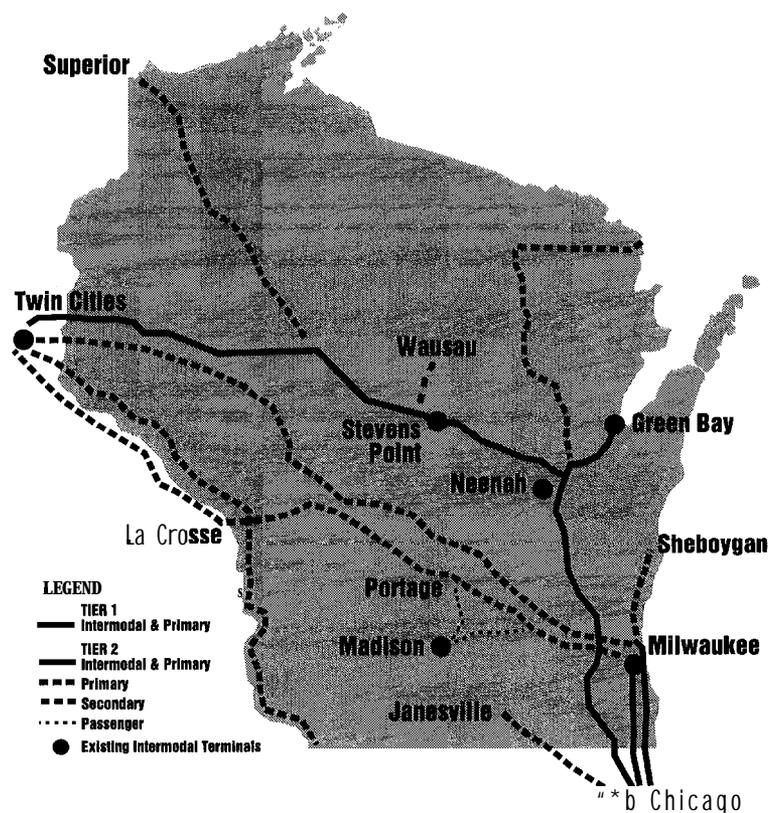
w No. of Farms - 79,000

H land In Farming - 17.1 million acres

H Cash Receipts - \$5.4 billion

w Nation's top producer In 18 categories

Freight Rail Route Classification



Freight rail Investments:

- \$250 million for revolving, low-interest loans
- \$50 million for rail preservation grants



year period, loans available will increase from \$140 million to \$250 million. The remaining \$50 million through 2020 will be needed for rail preservation projects on publicly-owned lines, funded with grants instead of loans.

The \$300 million in total improvements from the efficiency enhancement loans and preservation grants combined can be accommodated at the existing \$140 million funding level over 25 years. This is due to the fact that most of the resources provided through the revolving loan fund will be repaid by the private sector, in effect, making the loan fund self-supporting over time.

Rail infrastructure improvements will produce benefits statewide

Translinks 2.1 identifies many recommended areas for improving the rail infrastructure:

- Primary corridor tracks that need to be upgraded so that entire segments operate at the same speed - a key for efficient service.
- Secondary tracks that need to be upgraded in areas that demonstrate a need for improved service levels.

I Track improvements needed to allow for higher speeds within urban areas. This could include consolidating of some lines or closing some rail-highway crossings.

I Operating signal improvements needed to increase rail efficiency.

- Track and bridge upgrades needed to increase the weight capacity of rail corridors that may be required to accommodate heavier car loadings.

I Two current program activities - the preservation of low-volume rail lines and upgrades on rail lines preserved by public ownership - that will continue.

Intermodal connections will be targeted

In order to improve intermodal shipments using rail, the following areas are targeted:

I Needed intermodal facility improvements, including terminals, intermodal yards and storage facilities, pulp loading sites and bulk transfer facilities.

- Track improvements needed to accommodate higher-speed intermodal movements.

I Clearance improvements necessary to accommodate doublestack movements.

Grade crossings, port access and passenger rail programs will benefit freight rail

A number of other initiatives in the Translinks 2.1 plan will also benefit freight rail operations.

For example, WisDOT will upgrade the signalization at rail-highway grade crossings, funded through a separate program. Rail access will be improved as necessary at Great Lakes and Mississippi River ports through a separate intermodal access program. And passenger rail improvements, such as Amtrak expansions that upgrade tracks and signals, will also promote faster and safer freight rail service.

Rail-highway grade crossing plan element

Safety is the key concern

In Wisconsin, there are approximately 5,900 public rail-highway crossings with warning devices ranging from passive signing (a posted warning sign only) to full separation (involving overpasses or underpasses). Installing the appropriate warning systems at these crossings is essential for increasing public safety and improving the operating efficiency of the railroads.

Rail-highway grade crossing improvements will be needed as the current crossings become obsolete and as traffic levels increase on highways, local roads and railroads.

Compared to today's level, vehicle traffic will increase 34%, and freight rail tonnage (including truck/rail intermodal tonnage, which moves at faster speeds than normal freight rail) will increase 73%. In addition, the passenger rail elements of the adopted Translinks 21 plan call for substantial expansions and improvements in conventional and high speed service, which will interact with highway traffic and pose safety concerns at rail-highway grade crossings in many more areas.

To account for these increases in traffic volumes, better rail-highway grade crossing warning systems will be needed - especially in high-use or high-speed corridors.

Rail-highway crossing plan will upgrade safety, service

Overall, current WisDOT funding for rail-highway grade crossing warning systems is approximately \$175 million over the 25-year period. According to the Translinks 21 plan, funding required for all components of the rail-highway crossing plan will total \$415 million - or a \$240 million increase over current investment levels plus inflation - by 2020.

Under the rail-highway crossing plan, a key focus will be on increasing the number of projects on primary highway and rail corridors. In these primary corridors, all crossings will have train-activated warning devices ranging from flashing lights to lights with gates. Crossings with high accident potential will be considered for over-passes or underpasses. In less-traveled corridors, crossing upgrades will continue to be performed at the current rate of 3% per year.

The Federal Railroad Administration has recommended that states close 25% of their rail-highway crossings. This may shift some money from safety device improvements to crossing closures, and may present some cost savings if closure costs are lower than improvement costs.

Waterborne freight plan

Waterborne freight serves a valuable market niche

Waterborne freight is an essential component of efficient, low-cost freight transportation in Wisconsin. Shipping of bulk commodities, steel and extremely large machinery out of and into the state is particularly suited to water - both by barge on the Mississippi River and by freighter and barge on the Great Lakes.

A total of 17 ports now serve Wisconsin. The Great Lakes ports provide access from Wisconsin to other cities in the US. and Canada, as well as the Atlantic Ocean via the St. Lawrence Seaway. The Mississippi River ports can provide access from Wisconsin all the way to the Gulf of Mexico and to Mexico, tapping Central and South American markets. Additionally, the Port of Milwaukee has a direct water connection to the Mississippi River via the Illinois River.

Translinks 21 commodity forecasts indicate that waterborne shipping will show a 50% increase in tonnage moved by the year 2020 - from 34 million tons in 1992 to 51 million tons 25 years from now. As a result, waterborne transportation will continue to provide significant alternatives for shipping bulk commodities as part of an intermodal network in Wisconsin.

Wisconsin's Commercial Ports



Increasing the state Harbor Assistance Program from \$50 million to \$125 million over 25 years will respond to market trends and help meet the future needs of shippers and Industries



A joint marketing program will target national, regional and state shippers to promote Wisconsin's multimodal freight transportation network and facilities - including ports and harbors

\$25 million of airport investments will be specifically for the improvement of air cargo facilities and services

Translinks 21 strengthens role of waterborne freight transportation

By more than doubling the state Harbor Assistance Program (HAP) - from \$50 million to \$125 million over 25 years - WisDOT will respond to market trends to create a statewide waterborne transportation system designed to meet the future needs of shippers and industries.

Projects currently eligible for HAP funds include dock wall repair and maintenance, and construction of disposal facilities for dredged materials. Newly-eligible projects will include landside storage and intermodal facilities, internal roads and rails, storm-water management structures and land acquisition. Loans could also be provided for privately-owned docks.

Resolving dredging concerns is a key issue

WisDOT will work to resolve current concerns over the disposal of dredged materials - a process that is essential to maintaining or expanding the capacity of harbors, but one that also has environmental consequences. For its part, WisDOT will participate in discussions to explore mutually-acceptable environmental and transportation solutions for dealing with dredged material. WisDOT will also pursue, in cooperation with other Great Lakes states, full federal funding for dredged material disposal. Finally, WisDOT will pursue joint research efforts with the U.S. Army Corps of Engineers to evaluate the remediation and use of dredged materials.

Marketing will promote the benefits of multimodal freight transportation

WisDOT will work with the Department of Development to establish a marketing program targeted to national, regional and state shippers, to promote Wisconsin's continually-improving multimodal freight transportation network and facilities - including ports and harbors.

For waterborne transportation, the comprehensive marketing program could include developing brochures and informational materials about Wisconsin facilities and the kinds of services they provide, starting a computer inventory of Wisconsin's port facilities to be accessed by port users, placing advertisements of Wisconsin's ports in trade magazines or other appropriate media, and encouraging vessel operators to provide more regular, flexible and diverse services.

Locks and dams round out a comprehensive waterborne strategy

The Translinks 21 plan recommends support for economically justified and environmentally compatible improvements to the Great Lakes/St. Lawrence Seaway system and the Mississippi River lock and dam system, to further enable and promote the use of Wisconsin ports.

Air cargo plan element

Air cargo provides a vital and growing shipping function

Quality air cargo service is vital to many key Wisconsin industries, including food producers, manufacturers, clothiers, paper companies and producers of medical and electronics equipment. With the rapid rise in international trade, the growth of air cargo in Wisconsin - especially for high-value, time-sensitive commodities - continues to be significant and outpaces air passenger growth. By 2020, air cargo shipments in Wisconsin are projected to increase 215%.

Air cargo plan responds to rising needs, rapid growth

Most of the Translinks 21 plan initiatives designed to maintain and improve the quality and availability of air service in Wisconsin are already outlined in the intermodal passenger transportation section and therefore will not be repeated here.

Efforts to improve intermodal access to cargo airports are also described earlier in this chapter.

The air plan element of Translinks 21, however, also provides an additional \$25 million - above current funding levels plus inflation by 2020 - specifically for the improvement of air cargo facilities and services in Wisconsin.

Intermodal facilities access plan element

Potential for intermodal shipments calls for new investments

The ability of Wisconsin's highway, rail, water and air facilities to sustain or increase their level of activity depends upon the connections between them. Market trends show that Wisconsin firms, which are increasingly competing in national and international markets, need the time-savings and cost-savings available when products can be shipped via several different modes in a single trip - with "seamless" connections that take advantage of each mode's benefits.

Intermodal access plan will fund needed road improvements

In order to provide improved intermodal access, WisDOT will develop a new funding program to reimburse local governments for 80% of the costs of upgrading roads that serve intermodal facilities. WisDOT will evaluate those roads as part of the ISTEA Intermodal Management System (IMS), to be in place by October 1996. Roads included in the analysis - which will evaluate pavement and structural deficiencies, adequate turning lanes, lane width and ability to handle truck traffic - generally will be those that link the intermodal facility to a state highway.

The following intermodal facilities have been identified as potentially needing improved highway access and will be more fully evaluated under the IMS:

Rail: Existing intermodal facilities in Milwaukee, Green Bay, Neenah, Portage and Stevens Point. Proposed facilities in Superior, Sheboygan and other 20 bulk loading sites.

Harbors: Gateway ports in Milwaukee, Green Bay, Superior, La Crosse and Prairie du Chien. Other diversified and limited cargo ports in Port Washington, Sheboygan, Manitowoc, Kewaunee, Sturgeon Bay, Northport/Detroit Harbor, Marinette, Menominee, Ashland, Bayfield/La Pointe, Genoa, Cassville and Alma.

Airports: Airports with commercial passenger and freight services in Milwaukee, Madison, Green Bay, Appleton, La Crosse, Mosinee and Eau Claire. Airports with cargo operations in Kenosha, Janesville, Baraboo, Sheboygan, Rice Lake and Mineral Point.

Future planning will include a review of the functional classification of local roads serving these intermodal facilities, as well as the need to include those roads on the National Highway System.

Intermodal access plan will fund needed rail improvements

Additionally, rail access will be addressed at ports that generally receive a high proportion of rail-oriented commodities. Rail access - vital to the mission of ports - is often limited or not available, resulting in less choice and potentially higher costs for shippers.

Under the adopted Translinks 21 plan, state funding will be made available to ports for the purchase or construction of track and other facilities needed to provide improved rail access. Examples of where additional rail access may be needed include the Port of Milwaukee and Port of Superior, while entirely new rail access may be needed at several docks in La Crosse.



Translinks 21 provides \$60 million to improve local road and rail access to intermodal, rail, harbor and airport facilities

Further study of these and other ports - through the IMS - will be needed before specific project and funding recommendations are made. Funding for new tracks, for example, could be provided at up to 100% of costs, but only after negotiations between port and railroad operators have occurred to make the maximum use of existing rail access to the port facility.

The total 25-year cost of the entire intermodal access plan component - for both highway and rail access - is projected at \$60 million.

LAND USE STRATEGIES

Throughout its public outreach process, and in response to the Translinks 21 Transportation and Land Use issue paper, WisDOT received extensive and diverse input on land use issues,

There is a common sentiment that land use poses growing problems and concerns statewide, and while the status quo is not satisfactory, neither are radical departures from current land use decision-making processes. Further, public sentiment recognizes that transportation affects land use and has a role in addressing related problems - as part of a comprehensive set of land use strategies involving participation from the private sector and state and local governments.

Translinks 21 targets a more cooperative land use-transportation relationship

WisDOT will adopt four strategies to achieve a more cooperative relationship between land use and transportation. First, WisDOT will develop partnerships to incorporate local land use objectives into state transportation planning, and state transportation concerns into local land use planning. Second, WisDOT will work to increase efforts to address the transportation impacts of large-scale and unplanned development. Third, educational materials and programs about community development patterns that support multimodal transportation will be developed. And fourth, WisDOT will dedicate more attention to the impacts that transportation facilities and adjacent land uses generate on each other to make the impacts more positive and compatible.

Recognizing that land use and transportation issues by no means generate consensus, WisDOT will pursue the above actions over a 3-5 year period, with evaluations of the results to ensure that they are effective in addressing identified problems. All strategies and subsequent WisDOT actions will be developed in close cooperation with local governments and the private sector.

In order to help local governments and regional agencies perform this more sophisticated level of land use planning, a new WisDOT grant program will provide \$12.5 million over 25 years to assist communities as they shape plans for anticipated growth in key transportation corridors.

Since land use is a very complex and comprehensive challenge that includes but extends well beyond transportation issues, WisDOT is not and cannot be solely responsible for developing solutions. As a result, WisDOT will play a very active role on the newly-formed state Interagency Land Use Council, appropriately focusing on land use-transportation issues.

Partnerships will coordinate transportation planning and land use planning

WisDOT will take steps to improve coordination between transportation and land use planning by developing agreements with local governments (and regional planning agencies, where appropriate) to formally incorporate local land use objectives into state transportation planning if local governments are willing to incorporate state transportation objectives into their plans.

land use strategies:

- Translinks 21 implements four strategies to achieve a more cooperative relationship between land use and transportation
- Translinks 21 provides a new state grant program to help local governments plan for growth in key transportation corridors

The lack of coordination between state and local planning and between land use and transportation planning have played significant roles in creating today's land use and transportation problems. Local governments need to clearly define their land use objectives, and then articulate them to the public and private sector groups that make decisions that affect implementation of those objectives. WisDOT also needs to clearly identify and communicate its needs to local governments and others involved in the land use decision-making arena.

Clearly, the only way to achieve better coordination is through partnerships, in which WisDOT agrees to incorporate local land use interests into its transportation planning, while local governments factor state transportation concerns into their land use planning.

A range of strategies is available to WisDOT for the implementation of this strategy.

First, WisDOT will make selective grants to local governments for planning processes that meet specific criteria. WisDOT will provide a maximum of 80% of the out-of-pocket costs of the process, with a required local match of at least 20%. Because other federal and state programs support MPO planning, only land use plans and comprehensive plans in communities located outside MPO jurisdictions will be eligible for funding. Each request will be evaluated based on the need for local planning, involvement of the regional planning commission and/or other affected governments in the process, and the scope of the process.

Second, WisDOT will work with individual communities, during local comprehensive or land use planning processes, to identify specific land use objectives that should be incorporated into WisDOT plans. WisDOT will use this process to assist local governments in incorporating state transportation concerns into the local plan.

And third, WisDOT will work with MPOs to develop well-defined state-regional-local planning coordination processes to undertake during the MPO regional transportation planning process, so that local land use goals and regional transportation concerns are addressed in the MPO plan.

Local action will be encouraged to strengthen the link between planning and implementation

WisDOT will provide technical, financial and other forms of assistance if requested by local governments. WisDOT will also pursue strategies to encourage local governments to respond to local transportation problems caused by development that is inconsistent with adopted plans. Adopted local land use plans - if they exist and are regularly updated and implemented - are WisDOT's best resource for predicting future land uses and determining a community's vision for future growth. But when unplanned land uses occur, transportation problems can result.

WisDOT will pursue at least five actions to strengthen the link between local land use planning and plan implementation.

First, WisDOT will provide legal/statutory or other incentives for expanded use of access management along transportation facilities. This includes working to bring about statutory changes that expand counties' authority to manage access on county highways.

Second, WisDOT will develop technical assistance programs to help local governments update or develop and adopt local land use plans - that address the transportation impacts of proposed land uses - when new state or federally-funded transportation improvements are made.

Third, WisDOT will participate in intergovernmental agreements, initiated by local governments, to coordinate land use planning, land development and transportation

Tools for Improving planning partnerships:

- Planning grants for non-MPO jurisdictions
- H Joint local land use/state transportation planning
- State-regional-local planning coordination at MPO level



investments within and along transportation corridors. WisDOT would not be the lead agency in these agreements because of its limited statutory authority.

Fourth, WisDOT will develop statutory language describing a transportation impact analysis (TIA) process and pursue the statutory changes necessary to make this process law. The TIA process would require that the transportation impacts - for all modes - of a proposed development meeting certain size, traffic generation or noncompliance with land use plan criteria be identified prior to local approval of the development. The statutory language may also encourage mitigation of negative all-mode transportation impacts. This process will be informational only. Local governments will still make land use decisions at the local level.

And fifth, WisDOT will take the lead in partnership processes with local governments about cost-sharing on transportation investments that are used for both local and interregional trips.

Taking an educational approach to promoting multimodal-supportive land development patterns and urban forms

Through this strategy, WisDOT will raise local awareness of multimodal-friendly development patterns in educational, research and guidance documents and processes. This strategy includes, when appropriate, using WisDOT actions to set a good example for others to follow.

WisDOT recognizes that certain development patterns can make a variety of transportation modes function efficiently, while other patterns can create a reliance on traveling solely by auto. From a fiscal perspective, WisDOT also recognizes that multimodal-supportive land development patterns make transportation investments of all kinds function more efficiently than patterns that rely only on one mode. As a result, WisDOT strongly supports the planning and implementation of community development patterns that support automobile and many non-auto forms of travel. Despite its support for multimodal-supportive development patterns and land use decisions, WisDOT will not go beyond an advocate role to mandating certain kinds of development.

Several specific actions will be used to implement this strategy - following an educational, and not a regulatory approach. WisDOT will conduct, collect and disseminate research on specific ways to implement community development patterns that support multimodal transportation.

Guidance documents - targeted at MPOs, RPCs and local governments - will give planning guidance on multimodal-supportive land use patterns. Model ordinances to be considered for adoption by local governments will be developed, to include ways of accommodating mixed-use development and promoting site designs that are accessible via non-auto modes. And WisDOT will distribute educational materials - targeted at developers, lenders and the public - about the transportation impacts of alternative land development patterns and site designs.

Playing an active role in making transportation and adjacent land uses compatible with one another

Transportation facilities and adjacent land uses, as neighbors, generate impacts on one another. Land uses generate trips on adjacent facilities and affect the transportation modes that can effectively serve them. Transportation facilities can affect adjacent land uses by increasing noise levels, affecting property values and generating visual and aesthetic impacts.

Under this strategy, WisDOT will take a proactive approach to insuring that its investments are “good neighbors” to surrounding land uses. WisDOT will also strive to raise local awareness of the impacts of adjacent land uses on transportation investments. While this strategy operates on the same set of values as the one described immediately above, it moves from the community development level to more site-specific land use decisions as its focus.

WisDOT is currently working, on a case-by-case basis, to make its investments good neighbors. The department has worked with landscape architects, local governments and neighboring property owners in several sites to make facility improvement projects more aesthetically pleasing to both highway users and the surrounding community. This strategy expands WisDOT’s practice so that it may be applied more frequently and throughout the state. But it also brings with it an expectation that as WisDOT does more to address local concerns, local governments will be willing to do more to address WisDOT’s concerns about the function of its investments.

From this basis, WisDOT will move incrementally toward an even more cooperative partnership with local governments. The current practice of taking strides toward improving the appearance and function of WisDOT investments will be enhanced, without expecting revolutionary changes to already complex planning and design processes.

To implement this strategy, a range of potential strategies is available, including the four below.

First, WisDOT will implement an updated and expanded landscaping strategy for land in urban and urbanizing areas surrounding WisDOT investments, This will build on WisDOT’s well-established landscaping strategy in rural areas, and could address the use of plants and structures.

Second, WisDOT will expand on its existing program that involves local governments and neighboring property owners in the design of state transportation facilities so that their needs may be considered before the facility is constructed.

Third, the department will increase its consideration of investing in aesthetic improvements to a new facility’s design if significant interest exists at the local level for such improvements.

And **fourth**, WisDOT will produce guidance documents, educational programs and model ordinances addressing the development of commercial and retail sites that are pedestrian, bicycle and transit-friendly. Additionally, model zoning ordinances will be developed addressing other key issues, such as transportation noise and aesthetics.

State land Use Council brings more focus, direction

Along with the four strategies, WisDOT’s land use-transportation commitment will also include very active participation on the new state Interagency Land Use Council, which was recently formed by Governor Tommy Thompson to coordinate overall state agency land use efforts,

As a key participant on the council, WisDOT’s role will be appropriately focused on land use-transportation issues, such as identifying ways to help communities manage current or anticipated growth in key transportation corridors. While transportation is a key part of the land use equation, however, it is not the entire picture. Many more agencies and issues are involved.

As a result, resolving comprehensive land use planning and implementation issues requires WisDOT assistance, but it is not, will not or cannot be solely WisDOT’s responsibility. Other local, county, regional and state agencies must be involved as partners in any effort.

Interagency land Use Council
Members 01 the task t0rCe
initiated to coordinate Overall
state agency land use efforts:
Dept. of Administration
Dept. 01 Agriculture & Consumer
Protection
Dept. 01 Development
Dept. of Industry, labor 81 Human
Relations
Dept. of Natural Resources
Dept. of Revenue
Depl. of Transportation

WisDOT's involvement on the Interagency Land Use Council will continue to be complemented by its participation in metropolitan land use-transportation planning efforts across the state.

WisDOT will strengthen its financial commitment

The Translinks 21 land use strategies received a very high level of support during WisDOT's outreach process - nearing 80% in public surveys. At the same time, WisDOT recognized through the outreach process that it cannot advocate for local governments to do a better job of land use planning, and a better job of complementing state transportation and local development goals in that planning, without establishing a stronger state-local financial partnership.

In response, the Translinks 21 plan includes a new state grant program, funded at \$12.5 million over the 25-year period, to assist local governments in developing transportation corridor plans. For counties, regional agencies and local governments that are anticipating or experiencing growth in key transportation corridors, WisDOT will provide funding to help communities plan for that growth - based on their vision, and with the decisions in their hands.

WisDOT grant funding and technical assistance will also be available to help communities assess and manage the cumulative impacts of many smaller, incremental developments occurring over time in key transportation corridors - the importance of which is often overlooked - instead of just focusing on the impacts of larger, more visible single-site developments.

ENVIRONMENTAL STRATEGIES

Through Translinks 21, WisDOT has reviewed the link between key environmental issues and how transportation is provided and supported in Wisconsin. While the environmental values expressed in various meetings and surveys and in response to alternatives in the Translinks 21 issue paper on the environment varied, many points seemed universally accepted, or nearly so.

For example, a common sentiment is that WisDOT's current efforts on behalf of the environment represent a substantial commitment that should be continued. And in fact, much of the public seems unaware of the extent and costs of WisDOT's current environmental activities. Efforts to strengthen current practices are selectively supported by the public - particularly to streamline review processes - but project-related environmental review and mitigation efforts are held in high regard by those who are familiar with them.

Combining current efforts with new strategies

In looking to the future, WisDOT affirms its environmental principles and practices. The department will focus its new environmental strategies on addressing the public concerns expressed during Translinks 21, and on extending its environmental commitment to broader-scale planning and policy areas - while still emphasizing project-level review as well.

The adopted Translinks 21 plan includes two general categories of environmental strategies. The first includes continuing WisDOT's current environmental efforts, while the second initiates selected new strategies. Both are outlined here, with examples where appropriate.

WisDOT will focus its environmental strategies on addressing the public concerns expressed during Translinks 21 and on extending its environmental commitment to broader-scale planning and policy areas - while still emphasizing project-level review

Continuing WisDOT's current environmental activities

WisDOT's current environmental activities are extensive - marked by considerable expertise and practices that often go beyond state and federal requirements. Current WisDOT efforts include:

Wetlands. WisDOT established the first wetland mitigation bank in the Midwest that operates under state and federally-approved guidelines, and this bank is among the first of its kind in the nation. Wetland mitigation banking at many sites in Wisconsin allows the development of large wetland restoration areas when on-site restoration is not available. When wetlands must be taken for highway development, they are replaced with a greater number of acres than are lost.

Endangered and threatened species. WisDOT has participated in a series of surveys to determine the locations and extent of habitat for endangered and threatened species, including eagles, wolves, the Kameer blue butterfly and the Higgin's Eye clam.

Erosion control and stormwater management. WisDOT has worked with other state agencies and industry representatives to establish erosion control and stormwater management practices. Efforts include using newly available products to reduce soil losses at construction sites.

Soil remediation and groundwater contamination. WisDOT directs contractors in assessing the extent of soil and groundwater contamination problems encountered in highway projects. In 1993, the department and its consultants directed more than 250 site assessments and initiated soil and groundwater remediation at more than 50 sites along Wisconsin highway corridors.

Noise. WisDOT invests approximately \$6 million each year to provide noise barriers at already developed locations along state highways where noise levels exceed federal criteria.

Relocation. The potential need to relocate residences and businesses is assessed early in the development of transportation projects. Where relocation becomes necessary, the department seeks comparable accommodation; failing that, new buildings are provided.

Historic and archeological resources. Historic and archeological resources are identified as part of the development of highway projects. If sites are found to be eligible for inclusion on the National Register of Historic Places and cannot be avoided, excavation of the archeological site and documentation or other mitigation for historic sites are undertaken.

All of these activities are ongoing, and considerable WisDOT resources are devoted to revising, improving and streamlining environmental practices as new information and techniques emerge.

WisDOT will pursue additional environmental strategies

In addition to continuing current practices, WisDOT will pursue, as part of its adopted Translinks 21 plan, six new environmental strategies to further strengthen its commitment.

Improve information available to the public and decision makers

Informing state and local officials and citizens - accurately and consistently - about the potential impacts of a transportation project and the costs to mitigate those impacts is key to a successful environmental effort.

To ensure that good information is provided to the public, WisDOT will improve its cost analysis procedures to identify the resources needed for environmental management on transportation projects. The department will also improve its consideration of

potential secondary and cumulative environmental impacts of its projects, through further development of the system-plan environmental evaluations and in project review.

Strengthen partnerships to minimize transportation's environmental impacts

In order to work better with its many partners in transportation development, WisDOT will seek to improve the coordination between local land use activities and state transportation efforts.

Additionally, WisDOT will ensure that transportation improvements in urban areas are “good neighbors” by working with local governments and citizens to integrate transportation with the community and minimize undesired impacts.

Influence debates regarding environmental policy affecting transportation

WisDOT will support new federal-level requirements for technological improvements to vehicles and fuels, which are the most cost-effective way to reduce the negative environmental impacts of travel. The department will also support changes in contamination liability laws so that redevelopment in existing urban areas becomes more attractive, because movement to and from such sites may rely on existing transportation systems and may be served by multiple modes.

Continue to explore new ways to lessen environmental impacts of transportation

WisDOT will explore and test the use of incentives to strengthen non-highway modes. The department will also continue to perform and support research on the environmental effects of WisDOT's activities, including evaluation of specific changes in materials and practices.

Improve information and methods used to integrate environmental consideration

In partnership with other agencies, WisDOT will improve the quality and accessibility of environmental data and information to make consideration and avoidance of environmental impacts easier and more meaningful as part of transportation development. This might involve improved mapping of critical resources or further implementation of technologies such as Geographic Information Systems, with potential applications at the planning and project levels.

WisDOT will also evaluate potential improvements in travel modeling and forecasting techniques, both for statewide and urban area application, and implement them as appropriate. This might include improved evaluation of induced and diverted travel as it affects all modes.

Maintain - and strengthen where possible - current project practices

WisDOT will continue its efforts to avoid or mitigate negative environmental impacts associated with transportation, through design measures and by concentrating environmental practices first where the needs are clear and critical. For example, WisDOT will continue to make minor alignment/location changes when possible during final project design to further reduce negative impacts. Environmental review processes will be streamlined by reducing the duplication of effort, using automation where feasible and finding new ways to work with regulatory agencies.

In other actions, WisDOT will continue its efforts to reduce the quantity and toxicity of hazardous materials used in the construction and maintenance of the transportation system, to minimize waste generation, and to use disposal methods that minimize adverse environmental impacts. WisDOT will also retain ownership of surplus right-of-way lands where they might be needed for future environmental mitigation efforts.

TRANSPORTATION FINANCING OPTION

Financing the adopted Translinks 21 plan will require a total, cumulative investment of approximately \$39 billion (in constant 1994 dollars) from 1995-2020 - or about \$8.9 billion over spending current levels extended, plus inflation,

The increased investments required to implement the Translinks 21 plan will be achieved gradually, in a series of modest steps, as determined by the Governor and State Legislature in successive biennial budgets over the 25-year planning period,

When and how certain components of the Translinks 21 plan are developed will depend upon legislative, economic, mobility, environmental and other priorities, as well as the availability of needed revenues. Investing through a stepped process ensures that the total plan is affordable and manageable, and that programs can be implemented in the most orderly and efficient way possible. The chart at right shows one example of how this investment could be phased-in,

investment needs will have a modest impact on highway users

To provide one perspective, the Translinks 21 plan could be financed totally by increases in motor vehicle fuel taxes - with five rate increases through 2020, each occurring once every five years. If this were done, the average one-car household in Wisconsin would see its motor vehicle fuel tax payments increase by \$20 annually (or about four cents per gallon) every five years. In 2020, with Translinks 21 in place, that one-car household's annual motor vehicle fuel tax payments would have increased by a total of \$100 over current levels, plus inflation,

A \$100 annual increase in motor vehicle fuel taxes for a one-car household in Wisconsin, achieved in a series of modest steps, would represent about a 3.5% increase in the total cost of owning and operating a vehicle, growing from \$2,800 to \$2,900 per year 25 years later. Essentially, the total cost of driving would rise by about one-tenth of one percent per year.

Resources available for Translinks 21

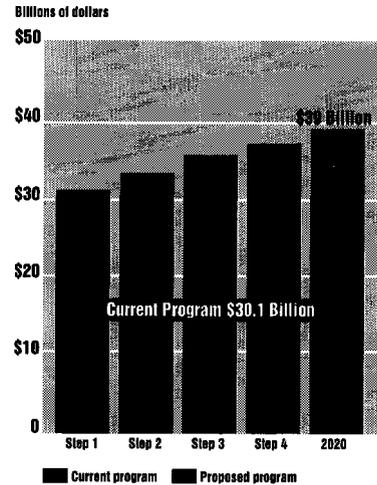
Given the range of potential revenue sources, however, it is difficult to determine exactly how the Translinks 21 plan will be financed - and a specific financing plan is not being proposed at this time. Options for financing Translinks 21 include any combination of the following.

I Federal funding. Substantial expansion of federal transportation investments may or may not occur, depending on the commitment to the National Highway System and the development of the National Transportation System. Over the long term, for example, federal highway funding will very likely increase above current levels. Federal public transit funding, however, is less clear. Congress is likely to shift its focus away from providing money to help pay transit operating costs in favor of investing more funds to construct or upgrade rail and bus systems. Further, there seems to be an emerging consensus that a major federal financial commitment will be needed for the development of high speed rail systems.

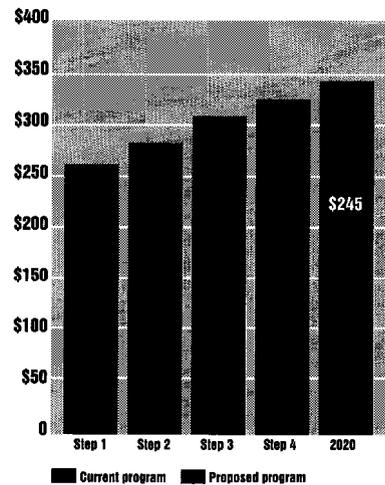
I State highway user fees. This option would reflect, in great part, how Wisconsin's transportation system is currently funded - primarily through motor vehicle fuel taxes and vehicle registration fees. Options on these "traditional" sources could include a different way of collecting these fees, such as:

Motor vehicle fuel tax options: Assess a sales tax on motor vehicle fuel, increase the rate of the motor vehicle fuel tax, modify the indexing formula (which annually

Translinks 21 incrementally increases investments through 2020 by \$8.9 billion



Translinks 21 would have modest impact on fuel taxes



The increased investments required to implement Translinks 21 will be achieved gradually, in a series of modest steps, as determined by the Governor and Legislature in successive biennial budgets over the 25-year planning period

Translinks 21 has modest impact on cost of driving

a.55 Incnas80v8rcunamconr

	Main./Repair \$402	Main./Repair \$402	
Park/Toll \$127	Fuel \$431	Fuel \$431	Park/Toll \$127
	Insurance \$755	Insurance \$755	
	Depreciation \$843	Depreciation \$843	
	Curfont Program	Translinks 21	

Based on 1991 FHWA document "Cost of Owning and Operating..." Assumes: vehicle age of 5, intermediate size, and 9,800 miles/yr. Assumes: fuel taxes of 23.1 (State) and 18.4 (Fed.) cents per gallon and registration of \$40/car.

While Wisconsin's motor vehicle fuel tax is the 13th highest in the nation, the total of all fees charged on autos in Wisconsin, and the amount of state transportation spending per person in the state, both rank below the national average

adjusts the fuel tax rate to maintain the buying power of the revenues it generates), and assess an oil company franchise tax.

Vehicle registration fee options: Increase the registration fee; and change the way in which registration fees are charged, from the current flat rate to an age-based, weight-based or value-based registration system.

Other user fee options: Assess a supplemental sales tax on new and used vehicles, deposited in the Transportation Fund; assess a truck weight-distance tax; assess a motor vehicle title tax; and institute toll roads.

Bonding: With repayment of debt service from current or other sources.

I State general funding. The range of state funding options for Translinks 2 1 includes state general funds, especially for transit programs and bonding repayments on rail capital costs. Many other states use general funds for these purposes, as the programs provide broad benefits to the general public rather than just to the road user. Regional Transportation Authorities (RTAs) or Metropolitan Transit Cooperatives (MTCs), which do not exist in Wisconsin but are in use across the country, could be a new funding mechanism for consideration.

Wisconsin's Transportation Fund: Supporting all modes of travel

In 1977, the State of Wisconsin established a Transportation Fund which collects the fees charged to the users of the state's transportation system and is available to construct, maintain and improve all modes - highways, local roads, transit, rail, airports, harbors and bikeways.

The allocation of resources to the various modes goes through an extensive public review process, since the State Legislature, primarily through the biennial budget process, must approve the programs and funding levels financed by the Transportation Fund.

Wisconsin's current system of financing transportation is unique in several ways. First, it relies heavily on motor fuel tax revenues, Second, Wisconsin charges no special fees to transportation users, such as toll roads, taxes on vehicle titles and taxes on the total miles driven by trucks. Third, Wisconsin uses no General Funds - generated mainly from income and sales taxes - to finance transportation, as occurs in almost all other states, primarily for transit and rail programs. And fourth, Wisconsin has no state-authorized Regional Transit or Transportation Authorities that could provide local non-property tax revenues for transportation programs.

These factors combine to make Wisconsin's state motor vehicle fuel tax the 13th highest in the nation - even though the total of all fees charged on autos in Wisconsin, and the amount of state transportation spending per person in the state, both rank below the national average. Also, Wisconsin's motor vehicle fuel tax is "indexed" - or adjusted to reflect changes in consumer prices and travel - each year to maintain its purchasing power.

While Wisconsin relies primarily on motor vehicle fuel taxes to fund transportation programs, those programs also utilize dedicated revenues from vehicle registration fees, driver license fees, aeronautics fees, railroad property taxes, investment earnings and other miscellaneous fees. More than 90% of all state transportation revenues come from motor fuel taxes and vehicle registration fees - paid by highway users - with less than 2% from air and rail fees.

Wisconsin's transportation revenues compared

If the amount of annual vehicle travel is used as a measure of the demand for transportation, and therefore the demand for transportation funding, Wisconsin has not kept pace with the needs.

On a per-person basis, vehicle miles of travel (VMT) grew 61.1% from 1971-1993, while the Transportation Fund increased just 4.4% during that same period as measured in constant dollars. In other words, Wisconsinites traveled over 60% more during those 20 plus years, while paying just 4% more to do so. In fact, as the chart at right shows, the cost per mile from 1971-1993 has been declining in real terms, and is now at its historic low point.

Another comparison - transportation investments to personal income growth - is also important. When personal income grows, it means that the economy is growing and population is increasing - both of which demand more transportation services. Conversely, as transportation investments increase, this bolsters personal income growth.

Transportation investment as a percentage of personal income shows a long downward trend from 1971-1981, when a major funding increase was provided to the Transportation Fund. From 1982-1993, transportation taxes as a percentage of personal income have remained relatively constant, except for 1988, when another transportation funding increase occurred. In order to maintain adequate transportation, periodic funding increases need to be provided.

The middle chart compares the growth among various state revenues from 1971-1993 to per capita personal income. All figures are adjusted for inflation. It is clear that the Transportation Fund has grown the least at 4.4%, when compared to other state income sources and personal income.

interstate comparisons

Owning and operating a motor vehicle in Wisconsin - in terms of the state taxes and fees charged to motorists - is a bargain compared to other states. The bottom graph shows what it would cost in state and federal taxes to operate an automobile in various Midwestern states.

Despite Wisconsin's fairly high fuel tax rate, only Ohio has a lower cost in state and federal taxes for operating a car. The annual fee is highest in Indiana, as this state imposes an excise tax which functions as a personal property tax on motor vehicles.

Wisconsin also ranks well below the national average - and favorably compares to other Midwestern states - in terms of state and federal highway user fees paid by each person. The average Wisconsinite pays \$188 per year, compared with a national average of \$204.

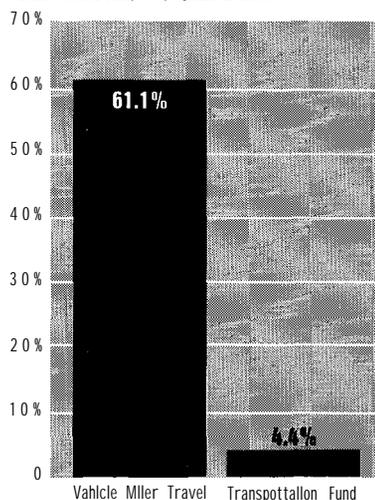
In terms of funding, states use a variety of sources to support their transportation programs - with only Wisconsin and South Carolina depending almost exclusively on highway user fees,

Local transportation financing

While Wisconsin's local governments receive more of their general revenues from the state than do their counterparts in other parts of the nation, our state's local governments currently rely almost exclusively on the property tax for the revenues that they raise themselves. Other sources of locally-generated revenue include various licenses, fines, charges for services, interest earnings, borrowing, special assessments for improvements to adjacent property and the proceeds of local option taxes such as the county sales or wheel tax.

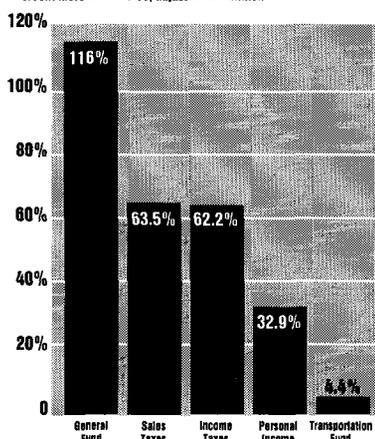
Travel increases far exceed growth in transportation fund

Percent Increase over period, adjusted for inflation

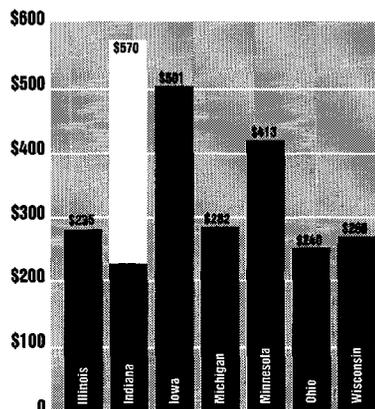


Personal Income vs. Various State Revenues

Percent Increase 1971-93, adjusted for inflation



1993 user fees: Wisconsin below other states in Midwest



- Ex E I C C I C r
 - 19 R 9 R c I I C I C I C I C n F c s
 - S I C I C & R d c m I F C C I C X
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In order to address local transportation planning and financing needs, some states have created area-wide organizations such as the Public Highway Authorities in Colorado, Transportation Development Districts in Pennsylvania and the Toll Road Corporation in Virginia.

States have also used regional transportation authorities (RTAs) to provide the planning and financing of transportation programs within a given jurisdiction. These RTAs can include transit, highway and other transportation modes, focusing on planning and financing.

A primary emphasis for RTAs is the generation of local revenues needed to finance locally-owned transportation systems, or to provide as cost-sharing for combined state, federal and local projects (such as light rail or a highway expansion). Funding sources available to RTAs traditionally include local sales taxes, local motor vehicle fuel taxes, payroll taxes, parking taxes, real estate transfer taxes, tolls and property taxes. Given the public outcry against high property taxes in some states, RTAs are increasingly looking to non-property tax options.

In general, many RTAs are formed through state legislation or rule, governed by a board, and have a variety of powers such as eminent domain and imposing taxes.

Conclusions

Wisconsin's dedicated Transportation Fund has evolved as a flexible and responsible mechanism for accommodating the changing requirements of a multimodal transportation system. The dedicated transportation revenue principle has served Wisconsin well and should be reaffirmed.

The current system of user fees, however, must be adjusted to adequately reflect current and future transportation needs. It may also be appropriate to consider expanding the base of funds beyond highway user fees - as is done in almost all other states - and to recognize the broader social benefits of transportation programs for all citizens of the State of Wisconsin,

CHAPTER FOUR THE NEXT STEPS: MORE DETAILED PLANNING, EVALUATIONS

4

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THE NEXT STEPS: MORE DETAILED PLANNING, EVALUATIONS

The separate modal plans to be developed will all be guided by the multimodal goals and vision of Translinks 21. Making sure that these plans complement each other will be a key focus

Over the next 18 months, a key focus for WisDOT will be the development of federally-required management systems for congestion, pavements, bridges, safety, public transportation and intermodal facilities

Throughout the Translinks 21 process, WisDOT relied on new multimodal planning models, travel forecasts and public involvement to broadly identify the appropriate role of each mode within Wisconsin's intermodal transportation system. Then, WisDOT used this information to shape a comprehensive, long-range transportation plan that develops each mode to maximize its benefits.

But Translinks 21, while providing a broad and valuable framework for transportation, is just a "starting point." To enable and complete implementation of the plan by the Governor and State Legislature, more detailed system plans for each individual transportation mode will be developed. These plans, to be developed and refined on an ongoing basis, will provide more specifics on what actions are needed, what they cost and why they are justified.

Despite the fact that separate modal plans must be developed to provide the level of detail necessary for implementation, however, each plan will be guided by the multimodal goals and vision of Translinks 21. Making sure that the modal plans fit together and complement each other will be a key focus - each mode will not be isolated from the others in stand-alone plans.

Along with these plans for highways, airports, harbors, rail and other modes, WisDOT will use the extensive data obtained through its modelling and analyses to develop multimodal corridor plans. These plans will illustrate how several transportation modes would work together to meet the mobility needs within an entire travel corridor. As one example, a plan for the Interstate 94 Milwaukee-Kenosha corridor would include and show the relationship between highways, commuter transit, high speed rail, freight rail, air travel and intermodal freight facilities. Again, the multimodal corridor plans will be guided by the recommendations of the Translinks 21 plan.

Finally, Translinks 21 will provide a framework for the development of the management systems required by the federal ISTEA legislation. Those management systems are discussed below.

Management systems guide plan formation

Under the federal ISTEA legislation, each state is required to develop, as part of its long-range intermodal planning process, a set of management systems to specifically document its future transportation needs and shape a targeted, logical investment strategy to address those needs.

The six management systems are:

- Congestion Management
- Bridge Management
- Pavement Management
- Intermodal Management
- Safety Management
- Public Transportation Management

As a result, the information provided by the management systems will be a critical resource for shaping the individual system plans for each mode, and for implementing Translinks 21.

Congestion Management System will analyze emerging traffic congestion

A significant activity over the next 18 months will be the completion of a Congestion Management System (CMS) analysis to address the more than 1,000 miles of the state trunk highway system projected to experience serious traffic congestion through the year 2020.

The CMS will analyze the broad range of solutions that are potentially available to address emerging highway congestion. As a starting point, the CMS will use WisDOT models and travel forecasts to determine how improvements to intercity bus, passenger and freight rail, and intermodal freight facilities - as identified in the Translinks 21 plan - will impact or even reduce projected auto and truck travel growth, and whether this impact is enough to solve the future congestion problem. If the benefit of non-highway improvements is not sufficient, the CMS will analyze other solutions short of highway expansions, such as passing lanes, improved highway designs or "smart transportation" technology, to assess their impacts on forecasted travel and congestion. If serious congestion problems are still projected, the CMS will be used to determine whether that level of congestion is acceptable, or whether strategic expansions are needed on portions of the state highway system to maintain safe and efficient mobility.

It should be noted that the CMS will be a joint effort between WisDOT and the state's Metropolitan Planning Organizations (MPOs). Each MPO will complete a congestion management analysis for its area as part of its long-range transportation plan - identifying future congestion problems, analyzing the options, and developing the appropriate mix of solutions.

In both cases - at the state and metropolitan level - it is very probable that congestion management analyses will document and support the need for some additional highway and road expansions that currently are not included in either the Translinks 21 plan or MPO plans. If this occurs, state and metropolitan plans will be amended to address those needs.

WisDOT will accelerate its CMS to be completed in 1996, in time to inform the next biennial enumeration process for major highway projects. The CMS analysis will provide one basis for a future update of the State Highway Plan and Corridors 2020.

Other highway management systems will guide pavement, bridge investments

Another long-term highway system planning activity will be the completion of a federally-required Pavement Management System (PMS) and a Bridge Management System (BMS), which will document the condition and future investment needs on those elements of the highway network. The results of the PMS and BMS will also be incorporated into the state highway plan model and used to guide subsequent updates of the State Highway Plan.

The pavement and bridge management systems will be fully operational by October 1996.

Separate management system aims for safer travel

A multi-disciplinary committee of WisDOT and outside experts is working to develop a federally-required Safety Management System (SMS), with completion also expected for October 1996. A safety management steering committee was recently appointed, and its recommendations will provide the basis for the components to improve the coordination of traffic safety initiatives among government entities, with volunteer groups and with the private sector. When implemented, the SMS will set in place formal mechanisms for the sharing of data on traffic trends, identifying priority traffic safety problems and the targeting of effective remedies.

Intermodal Management System brings it all together

The federal ISTEA legislation also requires the development and implementation of an Intermodal Management System (IMS). The IMS will focus on the best way to achieve a "seamless" interconnection between all modes, both freight and passenger.

The Congestion Management System will analyze the broad range of solutions that are potentially available to address emerging highway congestion

Pavement and bridge management systems will document the condition and future investment needs on those elements of the highway network

The Safety Management System will establish mechanisms for sharing data on traffic trends, identifying priority traffic safety problems and the targeting of effective remedies

The Intermodal Management System will focus on the best way to achieve a "seamless" interconnection between all modes, both passenger and freight

The Public Transportation Management System will serve as an asset management tool for identifying rehabilitation and replacement needs and costs on an ongoing basis

Wisconsin's IMS will be fully integrated into the state's ongoing multimodal transportation planning program, and WisDOT will also work closely with MPOs in its development.

The IMS will also provide a comprehensive collection of freight and passenger travel data, benchmarks to measure the effectiveness of investments, and information to guide future updates of the Translinks 21 plan and individual system plans. Specific IMS activities will include refining Translinks 21 analyses and recommendations with regard to improving highway access to intermodal terminals, as well as passenger and freight rail grade crossing improvements.

The IMS will be implemented by October 1996, as required by federal regulations.

Public Transportation Management System directs Investments In transit

ISTEA requires the development of a Public Transportation Management System (PTMS) for the public transit systems in the state. The PTMS will be an asset management tool which will identify rehabilitation and replacement needs and costs on an ongoing basis. The PTMS will encompass fixed-route bus, shared-ride taxi, rural, and elderly/disabled transit systems receiving federal funds. A detailed inventory of transit assets in the state will be developed for the PTMS and will include rolling stock, facilities, and major equipment. The PTMS inventory will also provide information on the fueling systems and accessibility of rolling stock, providing insight into compliance with the Clean Air Act Amendments of 1990 and the Americans with Disabilities Act of 1990.

A diverse committee of WisDOT, transit, and MPO planners are working together to develop an effective management tool to help guide maintenance and procurement decisions in the state. The PTMS will be fully operational in October, 1996.

Specific modal plans are the next step

As noted above, the various management systems, and the data they produce, will serve to guide the formation of detailed system plans for each individual mode within the transportation system. The development of modal plans will continue to be an ongoing process over a 25-year period. Each plan will be refined and updated periodically as new information becomes available. Further, these plans will outline general phases and priorities for each transportation mode over time, but will not provide specific dates for implementing certain initiatives. Those decisions rest with the Governor and State Legislature.

The following provides a very brief overview of each system plan to be developed within the Translinks 21 framework:

- I State Highway Plan: identifies long-term state highway expansion and rehabilitation needs, using the information provided by the Congestion, Pavement, Bridge and Safety Management Systems. Over time, the State Highway Plan will also include urban highway needs identified in MPO plans.
- I Statewide Airport System Plan: provides more detail on the improvement needs and priorities at specific airports, and includes, for the first time, an air cargo component.
- I Intercity Passenger Rail Plan: documents the recommendations of the Translinks 21 plan, provides more detail on forecasted ridership and implementation costs, and outlines the phase-in of new passenger rail service as well as progress toward high speed rail.

- I Intercity Bus Plan: documents the recommendations of the Translinks 21 plan and provides details on forecasted ridership and the current system. The plan outlines the phase-in of routes and passenger station improvements and associated costs.
- I Freight Rail Plan: provides specific details on Wisconsin's current freight rail system, information on rail and truck/rail intermodal forecasts, and specific cost estimates associated with implementing the Translinks 21 freight rail system.
- Bicycle Plan: will include a comprehensive bicycle policy, a crash analysis, a proposed system of commuter bikeways in the state (incorporating MPO commute bicycle plans and other needs outside of urbanized areas), and recommendations for making appropriate investments.
- I Public Transit Plan: will incorporate the transit plans of each MPO and each unit of government providing transit services outside of MPO-covered areas. The federally-required Public Transportation Management System, to be completed in October 1996, will also be used to shape the development of this plan.
- I Waterborne Freight Plan: will utilize Translinks 21 forecasts on freight movements and data on harbor/port activity and conditions to develop a system plan. This process is just beginning its very initial stages of development.

Other Initiatives: Chicago-Milwaukee high speed rail and Interstate corridors

It is also anticipated that multimodal corridor plans will be prepared as warranted in specific, high-volume freight and passenger corridors. WisDOT is currently completing a passenger rail study in the Chicago-Milwaukee corridor that will produce a blueprint for reducing the current travel time between the downtown areas from 90 to 60 minutes. It is expected that additional corridor plans will be developed in other areas of the state through 2020 as warranted.

The Translinks 21 plan also calls for joint WisDOT-MPO-Regional Planning Commission studies of potential transit improvements to serve the growth in commuter travel between key interstate corridors such as south central/southeastern Wisconsin and northern Illinois. Initial feasibility studies for that interstate corridor are expected to begin in 1995.

local road strategies will improve the effectiveness of local road services

WisDOT is proposing state legislation to officially establish the Council on Local Roads proposed in Translinks 21. The Council, with state and local membership, would advise WisDOT on a wide range of issues, including state financing policies, the collection of local road data, and potential actions or initiatives that could improve the effectiveness of local road services. General Transportation Aids will be increased in steps to fund 30% of eligible county road and 24% of municipal maintenance costs. The Local Road Improvement Program (LRIP) will be increased to aid local governments in higher-cost reconstruction and resurfacing projects.

Metropolitan area implementation

The federal ISTEA legislation provides MPOs with a series of increased responsibilities in the areas of metropolitan transportation planning and investment decisions. Given that new reality, implementation of many of the Translinks 21 urban recommendations - which are mostly at the policy level, and not project-specific - requires a joint and cooperative approach involving WisDOT and each of the affected MPOs.

WisDOT is already working with the MPOs as they further develop, finalize and amend their long-range transportation plans to ensure that the initiatives in Translinks 21 are fully reflected in the MPO plans as appropriate.

Major urban initiatives in Translinks 21, such as expanded transit service, new regional transit, Transportation Demand Management efforts, bicycle and pedestrian facility improvements, and initiatives to rehabilitate and improve urban streets and highways will all influence MPO plans and investments, and will need to be reflected in those plans as appropriate.

Even intercity transportation improvements in Translinks 21 must be considered by the MPOs for a variety of reasons. Primarily, there must be appropriate and seamless connections between the urban and intercity transportation networks, since access to and from Wisconsin's communities is essential. MPO and WisDOT intercity plans cannot stand alone. Intermodal connections will often be made in urban areas, as an example, and in such cases they must be integrated with the urban highway, transit, bicycle and pedestrian transportation networks.

Work with MPOs has already begun

WisDOT is already working with MPOs to follow through on the initiatives contained in Translinks 21. WisDOT is working with each MPO and local officials to update an earlier study that identified long-range pavement preservation and improvement needs on Corridors 2020 routes in urban areas. This data will be used to guide both state and MPO transportation planning efforts.

Additionally, WisDOT is working with each MPO to prepare long-range estimates of federal and state resources potentially available to fund the metropolitan plans, in response to ISTEA requirements that MPO transportation plans be financially feasible. These financial resource estimates reflect new funding initiatives contained in Translinks 21.

Major Investment Studies analyze potential investments

ISTEA requires Major Investment Studies (MISS) to be completed in certain cases as another element of the metropolitan planning process. These studies are intended to further define the concept and scope of certain major transportation investments, such as new freeway, commuter rail or light rail systems, contained in the statewide and metropolitan system plans, and to help ensure that the appropriate range of alternative solutions has been considered.

WisDOT is a key cooperative player, along with the MPO, transit operators, federal officials and other interested parties, in performing the MIS. WisDOT will be working with affected MPOs over the next few years to conduct a number of these studies. The first priority, as identified in the Translinks 21 plan, will be the undertaking of a pre-MIS feasibility study for potential Milwaukee-Racine-Kenosha commuter rail service in 1995, followed by the completion of a full-fledged MIS for that project in 1996 if warranted by the feasibility study results.

Another key focus is the Milwaukee-Waukesha East-West Corridor. Following three years of discussions, local elected officials in the region have tentatively recommended a light rail/special lanes/increased bus service option for the corridor. Based on that recommendation, WisDOT has begun a first phase of preliminary engineering for the potential project. If the results are positive, a locally-preferred alternative will be selected, opening the way for final preliminary engineering and a decision to fund, design and build the transit project.

Additionally, Translinks 21 and the long-range regional transportation plan for southeastern Wisconsin identify a number of major transportation investment proposals requiring an MIS, and WisDOT will be collectively pursuing those studies over time with SEWRPC. These recommendations include a number of regional transit service proposals from Milwaukee to Oconomowoc, Kenosha, West Bend and Grafton; and potential HOV facilities on key freeway corridors.

The Vision 2020 long-range transportation and land use planning process, with which WisDOT is also involved as a partner, is also expected to identify potential light rail, commuter rail and/or highway capacity projects for the Madison and Dane County metropolitan area. As the needs arise, WisDOT will cooperatively work with the MPO and local officials on required MISs for those proposals, once the long-range planning process in Dane County has been completed (anticipated for 1996).

land use discussions are off and running

As noted in the "Land Use Strategies" section, a key focus of WisDOT's land use-transportation efforts will be its participation in the seven-member state Interagency Land Use Council.

The Interagency Land Use Council, chaired by the state Department of Revenue secretary, held its first meeting on October 26, 1994, with work assignments provided to each agency. The Council has also made appointments to the corollary Wisconsin Strategic Growth Task Force.

Overall, the council is charged with providing an interim report, including a set of policy recommendations, to the Governor by January 1, 1996. A final report is due by July 1996.

Plan amendments and Implementation tracking

It is assumed that the Translinks 21 plan will need to be reviewed on an ongoing basis and amended periodically, to reflect changes in mobility needs, technology, economic trends, demographic patterns, the availability of financial resources or a range of other factors.

There is no established timeframe for when the Translinks 21 plan amendments will occur - as they will be driven largely by external circumstances beyond the control of WisDOT. It is envisioned, however, that substantial plan amendments could occur approximately once every five years.

By the end of 1995, WisDOT will also establish a comprehensive, systematic review and evaluation process by which the department can continually monitor its programs and policies, and determine the rate of progress being made in implementing the Translinks 21 plan at any given point. The purpose of this process will be to enable WisDOT to provide the Governor, Legislators and citizens with information on the status of Translinks 21. Through this evaluation process, WisDOT will provide - biennially or accompanying any plan amendments - a detailed plan status report.

Translinks 21 will need to be reviewed on an ongoing basis to reflect changes in mobility needs, technology, economic trends, demographic patterns, the availability of financial resources or a range of other factors



**CHAPTER FIVE SYSTEM-PLAN
ENVIRONMENTAL EVALUATION**

5

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SYSTEM-PLAN ENVIRONMENTAL EVALUATION

This section contains the System-Plan Environmental Evaluation (SEE) of the Translinks 21 Plan. The SEE augments two earlier Translinks documents: "Transportation and the Environment" (February 1994); and, "A Preliminary Environmental Review of the Four Alternatives for Our Transportation Future" (June 1994) and is a companion document to the Translinks 21 Multimodal Plan. The SEE is part of the Wisconsin Department of Transportation's (WisDOT) effort to meet the requirements of its administrative rule known as TRANS 400.

Purpose and methodology of the SEE

The future impacts of transportation on Wisconsin's environment will in part be influenced by the individual transportation policies adopted by WisDOT. However, some policies that have major impacts on the environment, such as vehicle emission standards, vehicle fuel efficiency standards, and market penetration of alternative or renewable energy sources are beyond the scope of the Translinks 21 Plan and are assumed to remain constant over the life of the Plan unless otherwise noted.

The SEE identifies and evaluates the environmental impacts of a range of alternative State-wide transportation plans, developed as part of the Translinks 21 planning process. WisDOT's Draft Plan and three Alternative Plans (Translinks 21 Alternatives Two, Three, and Four) are compared to a Base Case Alternative (Translinks 21 Alternative One). The environmental impacts of the Draft Plan are described first. Many elements in the Draft Plan also appear in at least one other alternative, therefore they have the same environmental impacts as the Draft Plan. To avoid repetition, the environmental impacts of the Base Case and the other alternatives are described in detail only where they have not previously been identified.

The SEE is an integral part of the Translinks 21 Plan. In a fashion similar to the Draft Plan, the SEE analyzes broad system-level plans affecting the State and environmental impacts are presented in qualitative and comparative terms. Cumulative effects of proposals are considered to the extent that they can be recognized during planning. The SEE does not provide the kind of quantitative detail found in project-level environmental reports, nor does it replace those reviews. Project-level impacts depend on location and design decisions which are not usually known at the time the system plan and the SEE are prepared.

The State administrative rule governing preparation of this analysis requires consideration of the environmental impacts of "major and significant new proposals." One of the most important conclusions of the Translinks planning done to date, the

The SEE identifies and evaluates the environmental impacts of a range of alternative statewide transportation plans, developed as part of Translinks 21

Preface to the SEE

The Translinks 21 plan was adopted after consideration of four alternative transportation plans. During the planning process, which was completed in the fall of 1994, the following System-Plan Environmental Evaluation (SEE) evolved as an integral element of the plan. The SEE discusses and compares the Draft Plan with a Base Case and three other alternative transportation plans; it considers environmental, social and economic impacts as part of the decision making process.

The adopted Translinks 21 plan is nearly identical to the Draft Plan discussed in the SEE. The original SEE is included here in order that the public may have a better understanding of the environmental, social and economic issues presented to decision makers during the planning process.

Since the Draft Plan and SEE were produced in September 1994, the Department's transportation forecasters have updated the passenger travel forecasts. The SEE, produced to accompany the Draft Plan, describes the energy consumption impacts of the original passenger travel forecasts, while the adopted Translinks 21 plan contains updated travel forecast figures. The reader will note the small differences in the tables used. The effect of these revised estimates on energy consumption is very slight and does not affect the qualitative conclusions reached for the adopted Translinks 21 plan. The greatest changes between original and updated estimates relate to prediction of high speed rail ridership.

reaffirmation of the need to complete Corridors 2020 highway expansions planned in 1988 and subsequently approved by the legislature, concerns activities that do not fall into that category as defined in TRANS 400. The Corridors 2020 plan is not new, but rather some six years old, and has previously been authorized by, the legislature. Thus, analysis and reporting of the environmental impacts of that program is not required under the rule as WisDOT understands it.

Notwithstanding that conclusion, however, this SEE does discuss the probable system-level environmental impacts of completing those previously planned highway expansions, to the degree that they can be recognized, for three reasons:

First, because the preponderance of travel, under any foreseeable scenario, is highway travel, the environmental impacts associated with maintaining and expanding the highway system are greater than those associated with other modes; and highway expansion has the greatest share of highway-related impacts;

Second, WisDOT is committed to disclosure and discussion of the impacts of its activities as they affect the environment, the economy, our communities and the options available to Wisconsin's citizens and businesses;

Finally, examining environmental impacts of long-range plans is a new undertaking, and WisDOT is the first state transportation agency in the country to attempt to do so. There is a transition from not preparing these environmental reviews to doing so. In order to avoid misinforming or misleading by omitting information on this major activity, it is included in an attempt to inform the public,

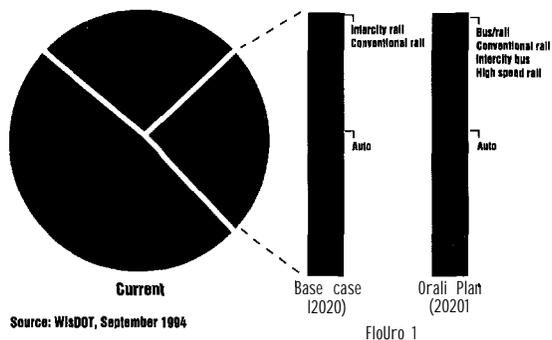
Intercity/Urban Components

The system elements of the Translinks 21 Plan focus predominantly on intercity travel. Thus, the environmental impacts discussed throughout the SEE are generally those stemming from intercity surface travel. Transportation models have been used extensively to provide forecasts of intercity passenger and freight travel. Intercity passenger model outputs, such as travel by mode under each alternative, are a key input to the SEE analysis. These models show that intercity surface travel accounts for only about 25% of all passenger miles travelled, and slightly over 1% of all person trips. Only a very small proportion of intercity travel is by a non-auto mode as Figures One and Two' show.

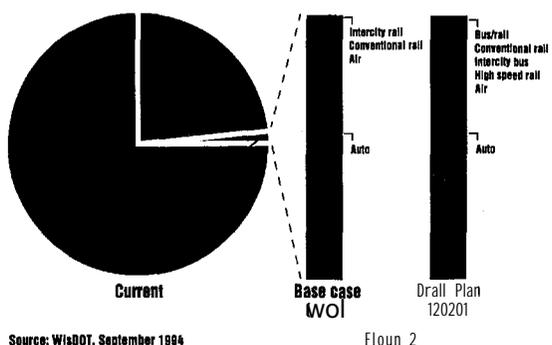
The remaining 75% of passenger miles are local trips in urban or rural areas. The urban components of the Translinks 21 Plan generally deal with State policy and funding for urban transportation systems. The exception is the proposed changes to the Milwaukee County freeway system, which is part of the State-jurisdiction highway system, for which WisDOT is directly responsible. The SEE discusses the possible environmental impacts of Translinks proposals for urban areas, but analysis is limited by uncertainty, and a lack of completed urban area plans. The effects of Translinks policies on travel behavior and the environment often depend on local decisions regarding changes to the transportation system. Local and regional transportation system changes are addressed in the plans being prepared by Metropolitan Planning Organizations (MPOs) in each urbanized area. These plans are not yet complete. In planning guidance, WisDOT has encouraged MPO review of environmental impacts as part of their plans.

The SEE does not provide the kind of quantitative detail found in project-level environmental reports, nor does it replace those reviews

Person Miles In Wisconsin
In Millions



Person Trips In Wisconsin
In Millions



Relationship of Translinks 21 plan to regional development goals and plans

The relationship between the Translinks 21 Alternatives and adopted regional development goals and plans is difficult to assess at a state-wide level because regional plans do not exist in all areas of the State, and when they do exist they are extremely dated. The Intermodal Surface Transportation Efficiency Act (ISTEA) requires that MPOs must develop metropolitan transportation plans by December 1994. Regional Planning Commissions (RPCs) may also develop regional transportation plans if they wish, but they are not required to. These transportation plans will include information about the relationship between transportation policy and land use plans. The status of these plans is discussed in the Translinks Plan. In any area with an MPO plan, State level transportation projects may only be implemented using federal money if they are also included in the MPO Transportation Improvement Program.

There is some overlap between RPCs and MPOs in Wisconsin, where five RPCs also function as MPOs. Following is a list of Wisconsin RPCs and MPOs:

Bay Lake RPC*	Brown County Planning Commission MPO
Dane County RPC*	Duluth/Superior Metro Interstate Committee MPO
East Central WI RPC*	Lacrosse Area Planning Committee MPO
Mississippi River RPC	Janesville MPO
North Central WI RPC	State Line Area Transportation Study (Beloit) MPO
Northwest RPC	Wausau MPO
Southwestern WI RPC*	Southeastern WI RPC
West Central WI RPC*	

* Denotes that RPC also functions as MPO.

In an effort to acquire some information about regional development goals, alternative sources of existing information such as, transportation resolutions, economic development annual reports, and analyses of the Translinks 21 Alternatives have been obtained from planning organizations. This information, where available, suggests that the Corridors 2020 program and other highway programs continue to receive widespread support throughout the State and appear to be closely tied to regional development goals. Support for other transportation programs such as harbor, rail, air, and transit assistance varies throughout the State and appears to be related to geographic location, particularly in the case of harbor assistance.

Future WisDOT transportation plans

Translinks 21 provides a multimodal framework and a point of departure for future transportation planning by the Department. During 1995 and part of 1996 the Department will develop additional multimodal analyses, both statewide and for high density freight and passenger corridors, as appropriate. More detailed system plans for freight and passenger modes including rail, waterborne, air, intercity bus and highways will also be developed.

Passenger travel by mode under each alternative

Forecasts of intercity passenger travel have been generated for the Draft Plan and each of the alternatives under consideration. This information is an important component of the SEE analysis. Table One summarizes the modal share of travel for surface intercity travel under the Draft Plan, the Base Case and each Alternative. Under all the alternatives auto travel remains the dominant mode for intercity travel.

Table One
 Intercity Passenger Miles By Mode (202B) For Each Alternative
 (Billions of Miles)

Mode	Draft Plan	(%)	Base Case	(%)	Alternatives 2 to 4	(%)
Auto			21,410.5	(99.7%)		
Conventional Rail			36.3	(0.2%)		
Intercity Bus			35.7	(0.2%)		
Feeder Bus/rail			00			
High Speed Rail			00			
Total			21,502.2			

Source: KPMG Peat Marwick Estimates provided to WisDOT, September 1994

DRAFT PLAN ANALYSIS

The Draft Plan represents a level of investment that falls between Alternatives Three and Four and includes a significant increase in investment across all modes. It includes Base Case highway initiatives and more money for preservation and rehabilitation of the entire State highway system. It also includes additional money for urban transit, intercity bus, local road and street assistance, transportation demand management strategies, airports, harbors, reconstruction and redesign of Milwaukee County's freeway system, and development of high speed rail between Chicago, Milwaukee, Madison and the Twin Cities. Tables Two and Three compare Draft Plan elements with the Base Case and the alternatives. Most of the discussion of impacts that follows is organized by environmental impact area (e.g., congestion, energy, etc.) because the SEE attempts to portray cumulative effects of many proposals. However, major initiatives likely to have the greatest environmental impacts are also identified and the various types of impacts associated with those proposals are summarized.

Table Two
Translnks 21 Draft Plan and Base Case (Millions of \$1

PLANCOMPONENTS		DRAFTPLANALTERNATIVE	BASECASE(ALTERNATIVE1)
HIGHWAYS	CORRIDORS 2020 EXPANSION	Same as Base Case.	\$4,000: Corridors 2020 backbone, complete by 2005. Construct non-backbone highways after 2005 where CMS indicates a need.
	OTHER IMPROVEMENTS	\$250: Interchange Access. \$175: Country Roads.	
	HIGHWAY REHABILITATION	+ \$2,060: Increased rehabilitation, all State highways.	\$9,800: All State highways.
	LOCAL ROAD IMPROVEMENTS	+ \$2,000: Local Road Improvement Program/General Transportation Aids.	\$9,500: Local road maintenance/improvements.
INTERCITY BUS		+ 5160: Phase in service to 45 cities.	\$6: Decline in service possible.
RAIL	HIGH SPEED RAIL	+ \$475: High speed rail Chicago-Milwaukee-Madison-Twin Cities. Feeder buses. (Higher State share than Alt 4.)	No high speed rail.
	CONVENTIONAL RAIL	+ \$115: New service: Madison, Green Bay. Expand service: Chicago, Milwaukee and Twin Cities.	\$20: Milwaukee-Chicago operating assistance.
INTERMODAL STATIONS		\$25: New station facilities.	
AIR PASSENGER		+ \$90: Aggressively promote air travel.	\$870: State Airport System Plan.
HIGHWAYS		\$60: All Season Highways.	
RAIL FREIGHT		\$400: Increase freight rail program, grade crossing safety improvements.	\$140: Continue Rail Assistance Grant/Loan Program.
AIR FREIGHT		\$25: Navigational improvements.	Same as Air Passenger (See Above)
HARBORS		+ \$50: Expand Harbor Assistance Program.	\$50: Harbor Assistance Program.
INTERMODAL FACILITIES		+ \$60: Improve highway access to intermodal facilities.	Limited support.
URBAN TR			
HIGHWAYS	MILWAUKEE CO FREEWAY	+ \$1,290: Modernization and rehabilitation.	\$750: Minimal rehabilitation.
	OTHER IMPROVEMENTS	\$250: Urban Amenities.	
TRANSIT	URBAN TRANSIT	+ \$925: Stabilize transit finance, marketing, expand service.	\$1,900: Maintain existing service.
ELDERLY AND DISABLED		+ \$220: Increase aids programs.	\$170: Specialized transportation programs.
BIKEiPED		+ \$100: New State program.	\$100.
TDM		+ \$70: Research and assistance program.	\$28: Technical support and research.

\$ values preceded by a "+" or "-" indicate a program increase or decrease from the Base Case.
\$ values with no "+" or "-" indicate new programs (except in Base Case). \$ values rounded to nearest \$5 million.

Table Three
Translinks 21 alternatives two, three and four (millions of \$).

PLAN COMPONENTS		ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
INTERCITY PASSENGER TRANSPORTATION				
HIGHWAYS	CORRIDORS 2020 EXPANSION	- \$2,320: Delay Corridors 2020. Reduce highway construction.	~ Same as Base Case.) Same as Base Case.
	OTHER IMPROVEMENTS	Same as Base Case.	\$250: Interchange Access.	\$250: Interchange Access. \$150: Country Roads.
	HIGHWAY REHABILITATION	Same as Base Case.	+ \$1,600: Increased rehabilitation, all State highways.	+ \$2,800: Increased rehabilitation, all State highways.
	LOCAL ROAD IMPROVEMENTS	Same as Base Case.	+ \$1,060: Expand Local Road Improvement Program.	+ \$2,000: Expand Local Road Improvements Program.
INTERCITY BUS		+ \$110: Restore service and add new service.	+ \$75: Some service restoration and improvement.	+ \$160: Phase in service to 45 cities.
RAIL	HIGH SPEED RAIL	\$250: Chicago/Milwaukee.	+ \$120: Chicago/Milwaukee. (Smaller State share than Alt 2.)	+ \$420: Milwaukee/Chicago/Twin Cities.
	CONVENTIONAL RAIL	+ \$220 bn: New service: Appleton, Green Bay, Madison, Tomab, La Crosse, Expand service: Twin Cities. Feeder bus.	+ \$180: New service: Madison, Green Bay. Expand service: Twin Cities. Feeder bus.	+ \$440: New service: Madison, Green Bay, north central WI. Expand service: Twin Cities. Feeder bus.
AIR PASSENGER		Same as Base Case.	+ \$250: Expand Airport Improvement Program.	+ \$140: Airport improvements including second runway at GMIA.
HIGHWAYS				
				\$130: All Season Highways.
RAIL FREIGHT		Same as Base Case.	+ \$190: Increased funding for intermodal Projects.	+ \$250: Alt 3, plus freight car acquisition.
AIR FREIGHT		Same as Base Case.	+ \$25: Improved freight facilities.	+ \$50: Create Essential Air Services Program, and freight facility improvements.
HARBORS		Same as Base Case.	+ \$45: Physical improvements to facilities.	+ \$60: More funds than Alt 3.
INTERMODAL FACILITIES		Same as Base Case.	+ \$30: Improve highway access to intermodal facilities.	+ \$50: Improve highway access to intermodal facilities.
URBAN TRANSPORTATION				
HIGHWAYS	MILWAUKEE CO FREEWAY	Same as Base Case.	+ \$750: Increased rehabilitation spending.	+ \$1,210: Modernization and rehabilitation.
	OTHER			\$250: Urban Amenities.
TRANSIT / URBAN TRANSIT		+ \$1,350: Improve transit in urban areas, including LRT for Madison and Milwaukee.	+ \$700: Increased operating assistance, improved service creation of regional transit program, marketing.	+ \$1,520: Major transit improvements including LRT in Madison and Milwaukee.
ELDERLY AND DISABLED		+ \$190: Increase aids programs.	+ \$130: Increase aids programs.	+ \$260 bn: Increase aids programs.
BIKEiPED		+ \$140: New State program.	+ \$80: New State program.	+ \$120: New State program.
TDM		+ \$80: Research and assistance program.	Same as Alt 2.	Same as Alt 2.

\$ values preceded by a "+" or "-" indicate a program increase or decrease from the Base Case.
\$ values with no "+" or "-" indicate new programs. \$ values rounded to nearest \$5 million.

Watt plan: Initiatives with considerable environmental impacts

This section provides a brief summary of elements in the Draft Plan that may have considerable environmental impacts. These impacts are discussed in more detail in the “Environmental Impacts of the Draft Plan” section of the SEE.

Completion of planned Corridors 2020 Backbone and other authorized projects

Figure Three shows the 500 miles of multilane divided highways included in the 1988 Corridors 2020 plan that have been legislatively approved, but will not be built by 1995. The SEE addresses the impacts of these highway expansion projects.

The environmental impacts of completing the Corridors 2020 planned expansions are considerable. Land use changes may occur in areas close to Corridors 2020 highways, particularly in areas dependent on tourism and in areas where bypasses are constructed. Community impacts would be mixed depending on local land use planning and plan implementation decisions. Economic development opportunities would be improved because of decreased transportation costs and better intercity connections. The state benefits economically when businesses experience lower production costs or increased market share, or both, because of reduced transportation costs. Water quality could worsen during construction and to a lesser extent after completion, but substantial mitigation is possible. Wetland loss would occur, but would be mitigated. Habitat fragmentation would increase though no species are likely to be lost statewide as a direct result of these expansions. Agricultural land would be lost through direct conversion to transportation uses. Farmland and wetland taking are substantial in terms

Corridors 2020 highways
yet to be completed

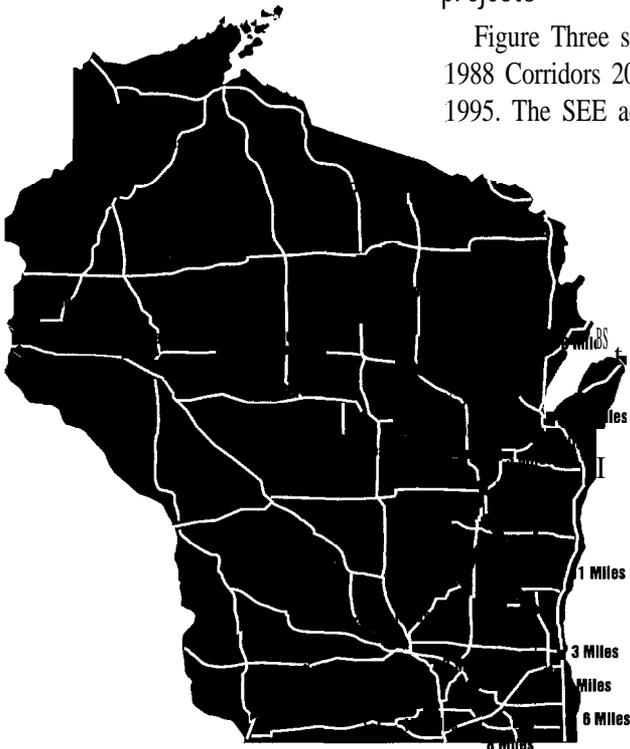


Figure 3

of number of acres, but represent very small proportions of Wisconsin's total acreage of these resources, in both cases about 0.06%. Additional farm severance and dislocation would be minimized because existing corridors would be used to the maximum extent possible.

High speed rail

Two corridors totalling 420 miles have been identified as candidates for high speed rail service of up to 125 miles per hour, or even faster as the technology to be used improves: Chicago to Milwaukee (85 miles), and Milwaukee to the Twin Cities (335 miles). High speed rail would increase noise levels and community separation in small and medium communities. There would be greater habitat fragmentation along rail corridors but all improvements are expected to remain in existing rights of way. High speed rail could generate some localized economic development and land use impacts in the vicinity of stations, and it will reduce travel time compared to current conventional rail service, thereby increasing productivity for those who use it. High speed rail will also provide additional connections between Wisconsin cities and two major midwestern economic centers, Chicago and the Twin Cities. High speed rail would have a negligible effect on ozone-related emissions. More diesel fuel would be consumed as a result of the increased rail service.

Milwaukee County Freeway System

The Milwaukee County freeway system is a major element of the state-wide transportation system because of the level of vehicle movement which the system carries. Reconstruction of the Milwaukee County freeway system would improve air quality, economic development, and water quality; and would have positive community impacts. This would not be expected to have major impacts on land use, or sensitive land resources because the area surrounding the Milwaukee County freeway system is already highly urbanized.

Plan elements with minor environmental impacts

In comparison to the major initiatives identified above, most of the other elements of the Draft Plan would have minor environmental impacts. These effects range from very slight increases or decreases in energy consumption to locally significant impacts on wetlands. Following are some examples of smaller environmental impacts resulting from Translinks elements not described in the previous section,

Funding would be increased for alternative transportation modes such as transit, bicycle and pedestrian facilities, and transportation demand management in urban areas. Despite these increases in support for alternative modes it is not expected that they would cause a significant modal shift in travel away from automobiles. According to Southeastern Wisconsin Regional Planning Commission (SEWRPC) analysis, even major improvements to alternative modes would result in a very small change in travel patterns unless accompanied by a major increase in the cost of travel. Consequently, the impacts of improved funding for alternative modes would result in relatively minor savings in energy and small reductions in emissions for urban areas state-wide.

All Season Highways may cause localized negative and positive impacts on sensitive land and water resources, including wetlands. For example, there may be positive impacts if water flow is improved when culverts are installed where none existed before, and there may be negative impacts if natural waterways or wetlands are filled. Projects would be subject to project level environmental review and the standard hierarchy of avoiding, minimizing, and mitigating any environmental impacts.

Additional interchanges, funded as part of the highway rehabilitation program, would improve access to the highway system, possibly leading to some additional economic development, natural resources, or land use impacts of the nature described above in the discussion of highway expansion. This plan alters the manner in which interchanges are funded, but is unlikely to significantly change the number of new interchanges.

Increased funding for rural and specialized passenger transportation, if not replacing existing funding from other sources, would provide additional service to elderly and handicapped rural residents and may enable more people to continue to reside in rural communities. The service would provide basic mobility to a growing segment of the population whose transportation needs may otherwise not be met.

ENVIRONMENTAL IMPACTS OF DRAFT PLAN

Traffic congestion impacts

Congestion can contribute to per vehicle increases in emissions and energy consumption, and can impose economic costs as a result of increased travel time. Preliminary information presented in the Translinks 21 "Four Alternatives for Our Transportation Future" document indicates that there is emerging congestion on significant portions of Wisconsin's intercity highway network. This potential congestion and options for relieving it will be analyzed through development of a Congestion Management System (CMS) for Wisconsin, required under ISTEA and to be conducted during 1995 and completed in 1996. Although preliminary information about potential diversion of travel from auto and truck to other modes has been developed, the impact of this diversion on congestion (i.e., whether the diversion is great enough in any corridor to affect congestion levels significantly) has not been completed. At this point, potential diversion appears to be very small statewide, but may be concentrated in certain corridors.

In the long term, recurrent congestion may require construction of additional highway capacity if improvements in other modes cannot alleviate the congestion. Over the next two years, the Draft Plan would be amended to reflect analysis done within the CMS that will review about 1,000 miles of Wisconsin highways beyond those highlighted in Figure Three (page 112). The CMS will consider options for alleviating congestion as follows:

- Re-evaluate criteria used to identify congestion.
- I Evaluate the potential of other modes for reducing congestion and traffic.
- I Analyze lower cost highway solutions for reducing congestion,
- I Highway expansions.

Preliminary analysis shows a large portion of the 1,000 miles may need various types of improvements between 2005 and the end of the planning period in 2020. This would have further environmental and land use impacts ranging from additional wetlands filled and conversion of agricultural lands to accommodation of additional secondary development. Development of the CMS and completion of data analysis will allow the Department to evaluate options for relieving serious congestion problems and prepare a SEE on that amendment. Thus, this SEE offers very limited commentary on congestion impacts.

Energy consumption impacts

Environmental impacts occur throughout the full cycle of energy production and use. Many of the factors that determine transportation energy consumption patterns are beyond WisDOT's control (e.g., Federal Corporate Average Fuel Efficiency (CAFE) standards or world oil prices.) However, the State can influence energy trends through policies such as, support of energy efficient travel modes, and congestion management. Vehicle fuel consumption is to a large extent determined by the fuel efficiency of the fleet and average vehicle speed, and fuel economy reaches its peak between 35 and 45 mph for passenger vehicles and trucks³

Energy consumption data for intercity travel has been derived from the intercity freight and passenger portions of the Translinks Plan analysis. Differences in energy consumption between Alternatives are small and the range of uncertainty behind the assumptions (e.g. total miles travelled, energy content of fuel etc.) may be greater than these differences.⁴ Urban energy consumption figures are based on analysis by

SEWRPC for its Regional Transportation Plan which is still in draft form. SEWRPC's plan is the only urbanized area plan nearing completion and its analysis incorporates approximations of most of the Translinks 21 Plan's major urban initiatives.

Intercity energy consumption

According to Wisconsin Department of Administration (DOA) statistics, the transportation sector accounts for roughly 33% of total end-use energy consumed in Wisconsin⁵ The Translinks analysis is not strictly comparable to the DOA data, for reasons such as differences in the study regions, but it is reasonable to estimate that in 1995 intercity freight and passenger travel (excluding air and water modes) will account for approximately 14.6% of total end-use energy use in Wisconsin,

As Table Four shows, intercity passenger travel energy consumption is expected to grow between 1995 and 2020.⁶ Note that energy consumption totals do not include air travel. Gasoline usage under the Draft Plan is slightly less than under the Base Case, while diesel fuel usage is higher due in large part to the level of high speed rail service. The Draft Plan is slightly more efficient than the Base Case on a per passenger-mile basis.

Table Four
Intercity passenger travel energy consumption

	1995	2020 (Base Case)	2020 (Draft Plan)
Gasoline (Millions of gallons)	677.25	733.92	718.43
Diesel Fuel (Millions of gallons)	0.85	1.04	11.36
Btu (Trillions)	84.77	91.88	91.54
Btu per Passenger-Mile	4761	4277	4222

Source: WisDOT, September 1994

As shown below in Table Five, fuel consumed for freight transport will increase between 1995 and 2020. Two possibilities for 2020 are portrayed: continuation of current trends, and anticipated intermodal diversion from truck to rail freight, under which greater fuel efficiency is achieved because rail freight transport is more energy efficient than truck freight transport on a per ton mile basis. The anticipated freight trend is slightly more energy efficient than continuation of the current trend.

Table Five
Intercity freight travel energy consumption

	1992	2020 (Current Trend)	2020 (Anticipated Intermodal Diversion)
Gasoline (Millions of Gallons)	221.35	316.39	311.57
Diesel Fuel (Millions of Gallons)	354.32	516.12	510.73
Btu (Trillions)	76.81	111.13	109.78
Btu per Ton-Mile	2015	1916	1893

Source: HNTB Corp. Estimates for WisDOT, September 1994

The travel forecasted by the intercity passenger model represents a portion of total travel in the State. It includes trips that cross county borders, with origins and destinations within the region. Figure Four depicts the region for which intercity trips were forecasted. The region includes all of the State of Wisconsin, as well as external areas including Chicago, the Twin Cities and neighboring counties.

Separation of the energy impacts of implementing the remaining segments of the 1988 Corridors 2020 Plan from the remainder of the State's transportation network is difficult because energy use on specific highway corridors is closely related to levels of congestion and travel speeds. This analysis is incomplete, but will be included in the CMS planning effort. Fuel efficiency is maximized at constant speeds between 35 and 45 mph; therefore, if a corridor develops congestion that results in average speeds outside this range, fuel efficiency would decrease. But, energy benefits may be realized if a corridor improvement results in average speeds in the fuel efficient range.

Corridors 2020 program improvements may generate additional travel related to the location of new businesses within the State. In addition, the improvements may be one factor in further decentralization of development particularly in high growth areas of the state. This is discussed further in the land use section of the SEE. Although the land use policy recommendations in the Draft Plan are designed to encourage coordination between land use and transportation decisions, it is not possible at this time to predict whether these policy changes would have any impact on energy consumption over the next 25 years.

Urban energy consumption

In 1991, an estimated 359 million gallons of motor fuel was consumed by vehicles operating on the regional arterial street and highway system in southeastern Wisconsin (Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha counties). By 2010, fuel consumption under SEWRPC's draft recommended Regional Transportation Plan would be 453 million gallons, or 3 percent less than under the "no-build" scenario.^a This difference reflects the improved transit services under the Draft Plan and reduced vehicle-miles of travel expected to result. The urban initiatives in the Translinks Draft Plan are consistent with SEWRPC's draft recommended plan.

Among the Translinks 21 initiatives reflected in the overall SEWRPC analysis, reconstruction and modernization of the Milwaukee County freeway system and significantly increased support for urban transit might be expected to affect energy consumption.⁹ Preliminary analysis of the impacts of modernizing an interchange shows that, at peak hours, traffic flow through the interchange would improve, allowing speeds through the interchange to rise from very low, energy inefficient levels, to higher, more energy efficient speeds.¹⁰

Until other urban areas complete the regional transportation plans required under ISTEA, it will not be possible to estimate how energy consumption in these areas might be affected by the urban initiatives in the Translinks Draft Plan. The other MPOs are developing transportation plans that consider the energy effects of transportation decisions. Like the SEWRPC analysis, MPO plans are expected to propose transportation improvements that are energy efficient."

Intercity Passenger & Freight Study Region

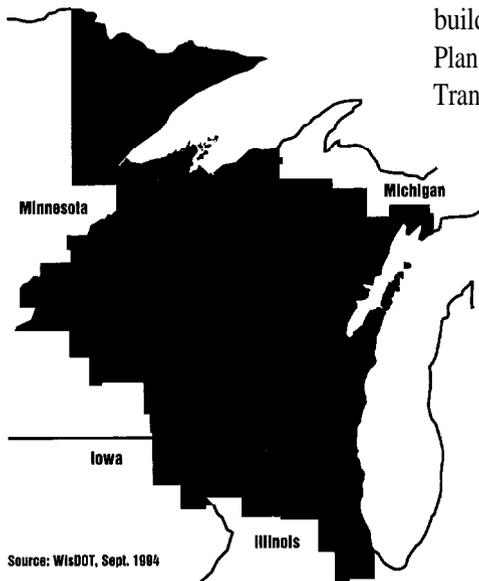


Figure 4

Other elements

Other elements of the Draft Plan are judged at this time to have minor impacts on energy consumption. For example, the Local Road Financing element may result in a reduction in energy consumption if projects result in average speeds that are more fuel

efficient. Freight diverted from less efficient modes, such as trucks, to more energy efficient modes, such as rail, would have a positive impact on motor fuel use.¹² Diversion of passengers from automobiles to transit, or other more efficient modes, would reduce motor fuel consumption if transit vehicles carry significant numbers of passengers. Implementation of transportation demand management measures may result in slightly lower energy use.

Air quality impacts

Transportation can contribute to a range of environmental problems through emissions of pollutants to the atmosphere. The effects of these pollutants include health problems, damage to plants, materials deterioration, and loss of visibility. For a general discussion of transportation related air pollution issues in Wisconsin, the reader should refer to the “Transportation and the Environment” document produced by WisDOT as part of the Translinks 21 planning process.

Ozone

Ground level ozone is the air pollutant of greatest concern in Wisconsin. Ozone is formed when volatile organic compounds (VOC) and oxides of nitrogen (NOx) combine in the presence of heat and sunlight. Transportation sources contributed 39% of VOC in 1990 in counties classified as either “severe” or “moderate” ozone nonattainment areas. These nine counties are in the eastern portion of the State, many of them bordering Lake Michigan. By 1996 the proportion of VOCs, the ozone-forming pollutant of greatest concern in Wisconsin, from transportation sources is projected to fall to 23% as a result of federal policies mandated by the Clean Air Act.¹³

SEWRPC analysis shows that VOC emissions will decline between 1991 and 2010 under its “no-build” scenario as well as its Recommended Plan. In 1991, 119.2 tons/summer weekday were emitted from motor vehicles on the arterial street and highway system. Under the Recommended Plan in 2010, 28.6 tons/summer weekday will be released, and under the “no-build” alternative, motor vehicles will release 29.8 tons/summer weekday.¹⁴

In-use factors, such as operating conditions, and maintenance of the vehicle, also affect emission rates. VOC emissions per mile fall as speed increases until speed reaches about 55 mph; at this point emissions begin to increase.¹⁵ Thus, congestion that slows travel or results in stop-and-go conditions can increase vehicle emissions. Transportation system improvements that allow higher average speeds, up to 55 mph, will reduce VOC emissions. Congestion analyses essential to making specific predictions of emissions levels will be completed in 1996. As discussed in the energy section, if transportation improvements generate new travel, then the reduction in emissions may be offset by growth in travel.

Figure Five illustrates trends in per vehicle VOC emissions between 1995 and 2020. The numbers shown are composite fleetwide emission rates at 3.5 mph for all on-road vehicles. Per vehicle emission rates in the six-county severe nonattainment areas are currently lower than elsewhere in the State due to the mandated vehicle inspection program and summertime restrictions on gasoline volatility. The introduction of an “enhanced” vehicle inspection program, reformulated gasoline and continuing fleet turnover will result in overall emissions declining at least through 2007 despite increases in travel.

The reductions in per vehicle emission rates in the Wisconsin counties that meet federal ozone standards (“attainment areas”) are due entirely to this fleet turnover. It

Per Vehicle Emission Rates, VOC at 35 mph, 1995-2020

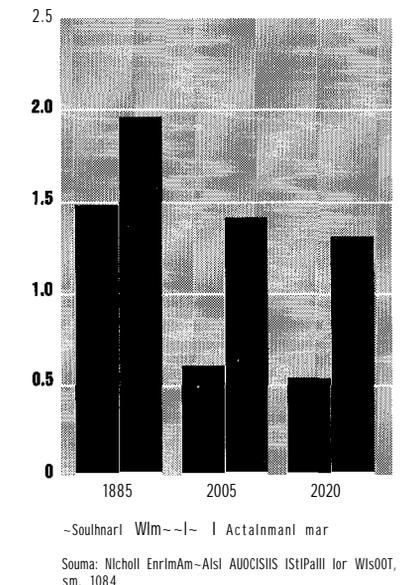


Figure 5

should be noted that overall emissions will not decrease proportionately with the decrease in per vehicle emissions because total travel will continue to grow in the state.

In the six severe nonattainment counties, Washington, Ozaukee, Waukesha, Milwaukee, Racine and Kenosha, these policies affect vehicle technology and use, and include an enhanced vehicle inspection program, and a requirement for cleaner gasoline known as “reformulated” gasoline. In Sheboygan County, a moderate nonattainment area, both reformulated gasoline and a basic vehicle inspection program are being implemented. In Manitowoc and Kewaunee Counties, which are also designated as moderate nonattainment areas, reformulated fuel will be in place by 1995.¹⁷

Any emissions impacts of Translinks 21 alternatives will be greatly surpassed by the significant emission reductions generated from the federal air quality program. Analysis of alternative transportation plans and programs across the country shows only marginal differences in emissions.

The air quality effects of the Corridors 2020 backbone projects as a whole cannot be estimated. Like energy usage, VOC emissions are closely related to travel speed. Additionally, if the implementation of the Corridors 2020 program results in more travel, increased emissions related to the additional travel can be expected. Improvements to the Milwaukee County freeway system would improve traffic flow and therefore, can be expected to reduce emissions.

New high speed rail service is estimated to result in less than 1% diversion from automobiles to high speed rail between Chicago to the Twin Cities, but approximately a five percent diversion in the Milwaukee-Chicago corridor.* According to the high speed rail corridor environmental evaluation, high speed rail service, in combination with diversion from automobiles, may affect levels of emissions, particularly carbon monoxide, as compared to the base case which does not include high speed rail service. High speed rail service combined with diversion from automobiles would have a negligible impact on ozone precursor emissions in the Milwaukee-Chicago corridor.”

Other pollutants

Motor vehicles are a source of air toxics known to be human carcinogens. Motor vehicles are a major source of benzene, formaldehyde and 1,3-butadiene. According to a 1992 EPA study, motor vehicles account for about 94% of all butadiene emissions, 85% of total benzene emissions, and roughly 33% of all formaldehyde emissions. EPA is considering the need to control, and feasibility of controlling emissions of these pollutants. Motor vehicles are also a source of carbon dioxide, which is a major greenhouse gas. The extent and timing of climate change (the greenhouse effect) is still subject to debate, and the need for regulations is still being considered at a federal level. Transportation in Wisconsin accounted for 33,069,000 tons, or approximately 25%, of state-wide carbon dioxide emissions in 1990.” The Wisconsin Department of Natural Resources is preparing forecasts of future carbon dioxide emissions, and preliminary data suggests that carbon dioxide emissions from both the transportation sector and utilities will increase substantially by 2010, but elimination of tropospheric ozone depleting compounds will result in total growth of greenhouse gases of about 6%.

Other elements

Minor air quality impacts may result from other elements of the Draft Plan. The Local Road Financing element may reduce VOC emissions if average speeds are improved, up to 55 mph, as a result of the completion of local projects. Hydrocarbon emissions would be reduced if freight movements are shifted from truck to rail². Air quality benefits may be realized when travel is diverted from drive alone vehicles to

other modes, such as carpools, transit, or bike/pedestrian facilities. Implementation of transportation demand management measures that reduce congestion and VMT would result in fewer hydrocarbon emissions.

land use impacts

Direct land use impacts, i.e. land diverted from other uses to construct transportation facilities, are addressed in the Sensitive Land and Water Resources section of the SEE. Indirect land use impacts are changes in land use which occur in part because a transportation improvement improves accessibility and therefore changes the development potential of land in a particular area, resulting in new development and increased travel. This is known as development-induced travel, and it can have a positive economic impacts if businesses from outside the State choose to relocate in-state and do not displace existing businesses.²²

Changes in travel patterns can also occur because of factors more directly related to a facility improvement:

Diverted travel occurs when a transportation improvement causes drivers to travel on the improved facility during peak hours when they formerly used alternative routes and modes during peak hours, or drove outside peak hours. Facility-induced travel consists of new travel to existing services and facilities, or new travel that would not have occurred if a facility improvement had not been made. WisDOT's intercity model forecasts that 1,739,000 new intercity trips over the Base Case would occur by 2020, as a result of implementing the Draft Plan. This is less than one percent of the total number of trips expected under the Draft Plan. Only improvements in rail and bus service are included in this estimate of induced trips. Travel times on highways were not varied across alternative plans. For instance, congestion on highways is assumed to remain the same whether the Base Case or the Draft Plan is implemented. If travel times on highways were incorporated in the analysis, it is likely that estimates of both facility-induced and diverted travel would be affected.

Research suggests that indirect land use impacts are highly context-specific. It is not possible to make any generalizations about the indirect land use effects of expansion projects that can be uniformly applied. However, some project types are commonly associated with indirect land use impacts.²³

Transportation projects on the urban periphery. Transportation projects that reduce travel time and improve access to outlying areas can facilitate decentralization of urban development. However, there is considerable evidence that decentralization occurs in the absence of transportation improvements, and it is difficult to separate transportation's role in determining land use from the mix of fiscal and social stresses, income levels, and public preferences which also drive suburbanization. Nevertheless, in some circumstances the accessibility provided by an expanded facility can be one factor considered by businesses and residents when making location decisions.

Highway projects in rural areas. Highway expansion projects in rural areas may stimulate development at major interchanges. This development may be new, or it may be a relocation from adjacent communities. Construction of new interchanges on roads that bypass communities will improve safety, and reduce congestion, but may attract traffic-dependent businesses such as gas stations, and restaurants to locations near the new facility.²⁵ Major expansion projects may stimulate new economic activity within communities adjacent to the facility as a result of improved access; an effect which is generally viewed as positive. This is discussed further in the Economic Development section of the SEE.

Completion of the Corridors 2020 program under the Draft Plan would be expected to have some indirect land use impacts in certain areas. Highway expansion projects in rural areas could stimulate some development in communities connected by the improved facilities. The amount and nature of that development would depend on the general economic climate of the region and the type of land use regulations that these communities have in place.²⁶

Expansion of Highways 10, 12, 35, 64, 36, 151, 54, and 57 under the Corridors 2020 program would provide direct access to urban areas and could contribute to new fringe development. Whether the nature of this new development is such that it results in land uses that would support efficient use of the transportation system is largely dependent on how local governments exercise their right to control the location, type, and timing of development.²⁷ The impact of these expansions on total travel would be limited because highway expansions, even major capacity expansions, represent small additions to a large existing highway network.²⁸

Approximately 25 to 28 additional bypasses remain to be built to complete the Corridors 2020 changes planned in 1988. Some additional bypasses would also be constructed under the highway rehabilitation program. The effects of a bypass project on the economy of the bypassed community would vary depending on; the size of the community, the extent to which the community becomes dependent on through traffic for retail sales, and whether the community anticipates possible effects of the bypasses.²⁹ For example, a bypass around a small community like Belmont would be likely to have considerably fewer effects than a bypass around a medium sized community like Janesville. Under some circumstances bypasses could affect local development patterns, either in the immediate vicinity of the bypass or in a wider area. Many bypasses would be around small-to-medium sized communities where growth pressures are not significant. In these cases, some businesses catering to the needs of travelers could locate at the interchanges but no other significant changes in land uses would be likely to occur. In areas of the State where growth pressures are stronger, a more significant level of development could occur. Figure Six shows areas of the State where population or employment growth, or both, are expected to be well above average.³⁰

In the absence of local regulations aimed at controlling the location of development it would be likely that new developments would cluster around highway interchanges built during completion of the Corridors 2020 program. Some of these businesses could be relocations from the downtown area, and some would be likely to be new businesses to the community. In any case, a change in overall development patterns in the area could result under the Draft Plan. As discussed earlier, moving intercity travel, particularly trucks, onto bypasses and away from the downtown area of communities would enhance these areas.

Several of the planned Corridors 2020 highway expansion projects, including Highways 53, 51, 29 and the completion of Highway 41, would serve areas of the State highly dependent on tourism. These projects could stimulate the development of new tourist-oriented businesses.³¹ Additional tourism-related travel could also occur in Sauk County, in association with the expansion of Highway 12. This would be likely to result in new facility-induced and development-induced travel. Growth of tourism in these areas is generally viewed as a benefit to these communities.

Other elements

Reconstruction of the Milwaukee County freeway system could result in the diversion of some trips off local roads, thereby relieving some congestion on these facilities. Milwaukee is already densely developed, therefore improvements to the freeway system

would not be likely to induce significant levels of new development.² However, improvements could help to retain existing businesses and residents in the city by improving access, and may eventually support urban redevelopment efforts.

The Draft Plan provisions for stabilization of urban transit service would not be likely to have indirect land use impacts. The provision of regional transit service to outlying communities would not be likely to affect a significant number of location decisions although some people may move to these outlying areas, motivated in part by the availability of regional transit service for commute trips.

High speed rail improvements could result in land use changes in the vicinity of the train stations.³³ New retail establishments and hotel facilities intended to serve train travelers could concentrate in the areas around the stations depending on existing land uses, and local zoning regulations. Improvements in passenger air travel and intercity bus would not be expected to have indirect land use impacts because trips taken by these modes would be relatively infrequent, thus location decisions would not be likely to be affected.

Improvements to General Mitchell International Airport in the Milwaukee area could result in new development near the airport related to the increase in air cargo capacity. Similarly, increased usage of rail for moving freight could result in new freight-related facilities being constructed near rail yards and intermodal facilities.

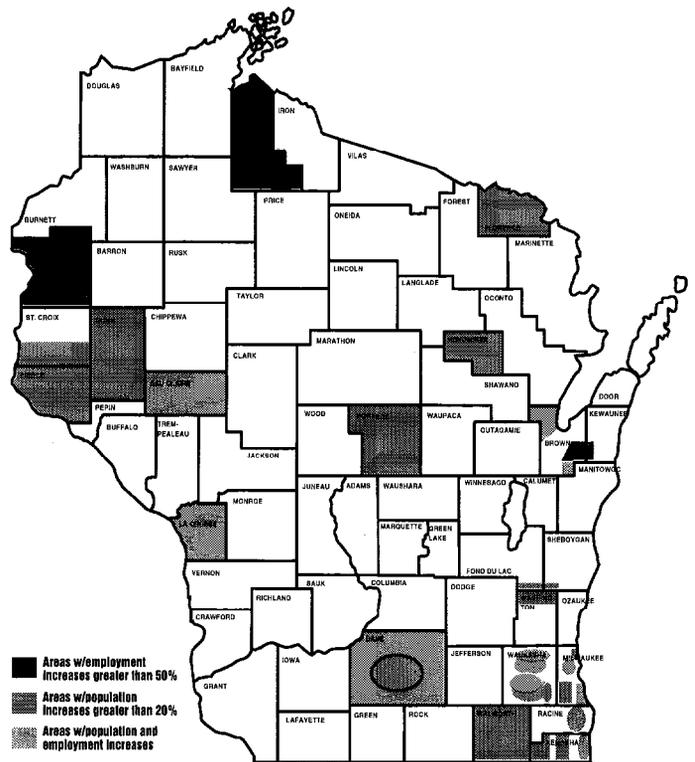
The Draft Plan suggests improvements in the coordination of land use decisions and transportation investments and would provide grants to local governments to promote improved planning processes. To the degree that these policies are successful, some of the less desirable indirect land use impacts of transportation projects could be avoided, the potential for future land use enhanced and a lower vehicle miles travelled growth rate may result.

Economic development impacts³⁴

Congestion data, and changes in travel speeds, which are an important component in assessing the economic benefits of transportation improvements, have not been addressed in the initial phase of the Translinks planning process. Nor do the models used in the Translinks 21 planning process provide feedback on economic development. Economic development would occur if total cost of transportation investments are outweighed by economic benefits received.

The Translinks 21 Draft Plan would create a more efficient transportation system which would reduce transportation costs for businesses in Wisconsin, thus making them more competitive with out-state businesses. Plan elements likely to have the largest impacts on businesses include: the Corridors 2020 program, the Milwaukee County freeway system, urban transit, and air transportation. Some industries important to Wisconsin's economy to which transportation costs and access are key components of business location decisions include: manufacturing (food, wood and industrial products), tourism, shipping and retail.

Figure 8
Areas of state with above average employment or population growth, or both



Souron: WI Cspt. oi Adminsllrllon and WEFA Consultants

The balance of federal versus state funding affects personal income levels for Wisconsin citizens, with greater availability of federal funds meaning slightly higher personal income.

Direct economic impacts of implementing the Draft Plan would include job creation associated with the construction, operation, and maintenance of new transportation infrastructure. However, these jobs are not generally considered to be “economic development” because they merely shift economic resources between communities and sectors rather than increase the state resource base.

Indirect economic impacts would include expenditure by new job holders on goods and services, lower costs to businesses, and potential attraction of new industries to Wisconsin. Some transportation savings could occur if average highway speeds increase, highway safety is enhanced (which would reduce insurance costs), vehicle operating costs are reduced, and the reliability of the system is improved. Businesses that regularly use these facilities for transportation purposes would experience lower overall production costs which would yield some economic benefit, especially if transportation costs are a large component of their total production costs. This would benefit Wisconsin’s economy to the extent that these benefiting businesses retain their increased wealth in Wisconsin. A greater economic boost would occur if these benefitting businesses are able to increase their market share and competitive position relative to out-of-state businesses. Reduced transportation costs would act as an incentive for businesses to locate in Wisconsin. This would benefit Wisconsin’s economy as long as new companies do not displace existing businesses.

Improvements in urban transit could expand employment opportunities for transit dependent groups, thus increasing the efficiency with which employment and labor markets interact. Major growth would continue to occur in air cargo, in part as a result of planned investments in aviation, Expansion of General Mitchell International Airport would allow for improved air services, benefitting businesses located in Southeastern Wisconsin.

As discussed in the Land Use section of the SEE, expansion of highways serving tourist-oriented areas of the state would result in new travel to these areas. This increased tourism generated by the improved transportation system would also generate economic impacts. The Final Report of the Highway 29/45/10 Corridor Study provides an indication of tourism benefits of the Corridors 2020 program since these highways collectively constitute a major component of the program. Information from this study suggests that under the Draft Plan, several communities in the central part of the State, including Wausau and the Rib Mountain area, would realize a substantial increase in tourism activities. The Waupaca area and the Steven Point/Plover area would be most likely to benefit from improvements to Highway 10 and major benefits would accrue to areas along Lake Michigan, like Door County and Green Bay in Northeastern Wisconsin.³⁵ As discussed in the land use section of the SEE, the growth of tourism would result in changes in land use and bring new levels of travel related to the increased tourism.

Other elements

As a result of the All Season Highways program, local communities could benefit from improved distribution of forestry and agricultural products. Without improvements, local road weight restrictions would inhibit the movement of forestry and other products. Improvements could also affect business location decisions and enhance the competitiveness of local businesses. The Wisconsin Country Roads program could generate increased tourism in local communities, and there could be some statewide

benefits if the improved roadways draw new travellers to the State. Collectively, local road financing programs could benefit local economies to the extent that local businesses experience travel cost savings due to local road improvements. As a result of freight rail improvements businesses that take advantage of rail transportation could experience lower transportation cost. Additionally, to the extent that some highway corridors could become less congested due to small shifts in freight movements by truck to rail, truck movements could also be less costly. Improvements to the water transportation system could yield similar results.

Community impacts

Community and neighborhood impacts occur when the transportation system changes, or secondary impacts such as land use changes which are addressed elsewhere in the SEE, result in changes to the character of a neighborhood or changes in community activities. These impacts can include changes in the aesthetics of a neighborhood, neighborhood separation or connection of neighborhoods or, changes in noise levels. The nature of potential community impacts is highly dependent on individual project details and can be examined more closely during the project planning phase. However, it is possible to draw general conclusions about the impact of categories of transportation projects on communities, including the effects on local property tax base, and increases or decreases in land values. Analysis indicates that most of the elements included in the Draft Plan would have some community impacts.

The completion of the Corridors 2020 program would increase the number of bypasses, reduce noise levels and affect property value, positively or negatively, depending on the location of highways. Major localized land use and economic development impacts would be likely to occur, as discussed elsewhere in the SEE. Reconstruction or modernization of the Milwaukee County freeway system could allow retrofitting for more aesthetically pleasing structures, and could improve inter-connectivity between neighborhoods with, for example, greater accommodation of bicycle/pedestrian modes. Investments in local roads through the current funding mechanism would have positive impacts on community livability to the extent that local governments take this opportunity to provide greater input in land use and transportation decision-making.

Completion of the 1988 Corridors 2020 plan would also require further archaeological and historical investigations near proposed construction. Effects on significant archaeological or historic resources would be avoided or minimized by location and/or design changes. Unavoidable impacts would be mitigated by excavation and curation of archaeological artifacts. Mitigation options for historic resources (building, bridges, and other structures) include landscape screening, relocation, and/or documentation.

Investments in passenger rail, particularly high speed rail, and freight rail facilities would increase noise levels in some communities situated along rail lines, and more intensively used corridors would have a separating effect on communities. Upgrading of rail corridors to Madison and Milwaukee would cause road closures on low traffic streets creating dead ends. Most higher traffic volume streets would be grade separated for safety reasons. Combinations of closed streets, elevated grades and required fencing would separate neighborhoods. Some freight rail crossings remaining at grade on high volume streets would cause congestion or diversion of traffic when trains pass through.

The introduction of global positioning navigation systems, and other airport facility improvements under the Draft Plan would increase the ability of 30 airports state-wide to accommodate more planes in diverse weather conditions. This could increase noise levels in neighboring residential areas, despite the use of quieter planes. Neighborhoods most affected would be those surrounding General Mitchell International Airport where

a second runway would be constructed, requiring considerable displacement of residences. A detailed assessment of the environmental impacts of General Mitchell International Airport expansion will be provided in a project level Environmental Impact Statement.

Sensitive land and water resources impacts

All modes of transportation can have impacts on sensitive land and water resources but, highway, rail and airport expansions would have the greatest impacts. Completion of the Corridors 2020 program as shown in Figure Three would convert between 9,000 to 12,000 acres of land directly to highway uses. New separation requirements for proposed high speed rail would increase habitat fragmentation near rail corridors. Up to 30 airports statewide would also require additional lands for expansion with a range of 1,200 to 1,400 acres converted to airport clear zone use.⁶ Clear zone use would have mixed effects ranging from tree removal to preservation of wetlands and open farmlands.



Water resources

A range of water quality impacts can result from transportation-related activities. Runoff from highways and airport runways may contain a variety of pollutants including: oil, copper, zinc and toxic substances from vehicle emissions.” Highways may also act as conduits for non-point source pollution from agricultural and construction sources. Most new transportation corridors, or expansions would require filling of some wetlands, although these losses are mitigated through restoration, or re-creation of other wetlands.

Completing remaining portions of the Corridors 2020 changes planned in 1988 (see Figure Three) involves conversion of about 500 miles of existing two-lane highways to four-lane highways. This mileage is already legislatively approved under the Corridors 2020 plan, and small portions are already under construction. Major water resource impacts include non-point stormwater runoff and wetland loss. About 1,800 to 3,000 acres of wetlands would be filled during completion of planned Corridors 2020 highway expansion, or 0.06% of Wisconsin’s total wetlands resources.^{3R} In addition, the highways program for rehabilitation of existing highways, separate from the Corridors 2020 program, would fill another 500- 1,000 wetland acres. WisDOT, in coordination with other resources agencies, would mitigate this loss through restoration of wetlands destroyed in the past, or creation of new wetlands. The current rate of wetland replacement averages between 1 and 1.5 acres for each acre lost. This is expected to remain the same in the Draft Plan.

Mitigation of wetlands for highway projects involves some risk of failure. Restoring former wetlands to replace acreage lost due to highway construction has a high degree of success and a one to one ratio of lost to restored wetland acres is often used to replace filled wetlands. In comparison, creation of new wetlands where none existed before has a lower rate of success. Greater amounts, or higher ratios, of newly created wetlands are used to mitigate wetland losses when restoration is not possible. Often 1.5 acres or more of created wetlands are used to replace each acre of loss. Mitigation is the last step in current WisDOT policy where a hierarchy attempts to first avoid, then minimize wetland losses, and only then mitigates. Construction of bridges is also planned under the Corridors 2020 program. Double bridges would replace existing single bridges over streams and wetlands, especially Highways 10, portions of 29, and northern portions of 5 I and 53. Although highly controlled, construction would temporarily contribute to erosion, and stream bed disturbance, and would require wetland

filling. Additional lanes would slightly increase direct runoff volume and pollutant levels in nearby waterways. If secondary development is allowed to occur along these or other proposed highways, further increases in runoff and pollutant levels would occur.³⁹

Rehabilitation and reconstruction of the Milwaukee County freeway system would include structural measures designed to improve the quality of stormwater run-off from highways required under the Clean Water Act and WisDOT's rule, Trans 401. These structures may also treat small amounts of run-off from other urban sources in addition to highways because highway drainage systems are an integral part of most drainage areas. These structures are not mentioned in the Draft Plan but must be considered during redesign and construction in the future.

Milwaukee County freeway rehabilitation would also provide an opportunity to clean some hazardous waste sites that existed before the freeway system was originally constructed. Current waste rules did not exist in the 1960's when the freeway system was built, but would be effective if reconstruction occurred as proposed in the Draft Plan. Temporary water quality impacts would also occur when contaminated river sediments in the Milwaukee region are disturbed during bridge reconstruction. Most of the contamination would be contained, but small amounts from each project would escape into surface waters.

Wisconsin's harbor basins must be dredged on a regular basis to remain useful. Most dredged material is contaminated from past uncontrolled discharges. This can create a water contamination risk during dredging and disposal operations. The Draft Plan increases harbor assistance funds where construction of disposal facilities for dredge material and for dredging itself is eligible. This increased money would not stimulate more dredging activity because agreements of where to place dredge material is still required from the Department of Natural Resources and the Army Corps of Engineers. Any future agreements between these two agencies and WisDOT would have a greater influence over where dredging occurs and to what extent than any increase in funding.

Almost all railroad track proposed for service start-up is already in place. Proposed improvements to existing lines, and the proposed grade crossing program, would reduce the risk of freight train derailments slightly, and subsequent hazardous spills, which would also reduce water contamination episodes.⁴⁰

Cumulative construction erosion and some limited conversion of habitat would occur throughout Wisconsin as a result of proposed increases in construction of intermodal facilities, local roads, airport facilities, and pedestrian and bicycle facilities in urban areas. Most of these types of projects are considered to be of minor significance on a state-wide basis because they are localized, or are restorations/improvements to existing facilities.

land resources

Major land resource issues at the system-level include:

Conversion of agricultural land. Much of Wisconsin's agricultural land is located in the southern and eastern portions of the state and is close to urban areas. As a result these lands are subject to potential conversion to transportation and other uses. Completion of the Corridors 2020 program would require an estimated 5,500 to 11,000 acres of farmlands to be directly converted to transportation, or 0.06% of Wisconsin's total farmland resources⁴¹. The number of discontinued farm operations resulting from this conversion would probably be in the range of one or two per bypass because for the most part only strips of property would be required along existing highway corridors.⁴² In comparison, construction of bypasses requires larger tracts of land and often requires

new corridors of travel, resulting in a higher degree of farm severance. Secondary development that may occur can also result in loss of farmlands shifting to other uses and is discussed under the Land Use section of the SEE.

The majority of agricultural land converted would be likely to be good quality land given the location of the proposed highways. Expansion and bypasses of Highway 151 in the southwestern corner of the State, and western portions of Highway 29, Highway 12, and the Highway 11 bypass south of Janesville would convert higher than average per mile amounts because of the abundant farmland in these regions.

Recycled vs landfilled road material. In the past, most highway material removed to allow reconstruction was landfilled. Currently, WisDOT recycles most removed road materials, Asphalt is almost entirely reused to resurface roads. A high percentage of concrete pavement is now broken into aggregate for use in pavement projects. This growth in recycling would continue in the Draft Plan and little expended road material would require landfilling in the future.

Shrinking biological diversity and fragmentation of natural habitat. Biological diversity is the variety and abundance of species, their genetic composition and the communities, ecosystems and landscapes in which they occur. It also refers to the variety of ecological structures, functions and processes at any of these levels. If plant and animal habitats are broken into "islands" by transportation corridors or other developments, these habitats may fall below a critical size needed to maintain species populations over time. Other major causes of fragmentation include agriculture, utility corridors and urban development. Causal factors are interrelated, and separating the contribution of each factor is impossible. Fragmentation impacts related to transportation are most significant when new transportation corridors are constructed. Examples of new corridors include a freeway bypass, or a new rail line.⁴³

Review of the literature indicates that a limited number of permanent and migratory species in Wisconsin are sensitive to habitat fragmentation. Examples of these species include Cerulean Warbler, Acadian Flycatcher⁴⁴, and Ornate Box Turtle.⁴⁵

The fragmentation impacts of the remaining planned Corridors 2020 projects are not known with certainty because most of the areas affected are already highly fragmented. In most cases the corridors affected under the Draft Plan already exist. Expansions would widen these corridors making exchange of plant and animal populations more difficult. However, the use of existing transportation corridors minimizes the effect of fragmentation according to analysis in other corridor studies.

Elements of the Draft Plan which may contribute to fragmentation include completion of the Corridors 2020 plan, and high speed rail from Milwaukee to the Twin Cities. Planned and authorized highway expansions on the eastern portions of Highway 29, and on Highways 10, 5, 1, 53 and 141 would contribute toward further forest fragmentation. In northern parts of the State, capacity expansions on Highways 5, 1 and 53 may slow down the expansion of wolf populations to northeastern parts of the State, and expansion of Pine Marten to the northwestern portions of the State.⁴⁶ Work in this area is still continuing and will be better understood when Highway 53 is completed. Although no wolves have been killed on Highway 53 as of August 1994, vehicle/wolf collisions are one of the primary causes of wolf mortality in Wisconsin.⁴⁷ Fragmentation would also occur in grassland habitats in southwestern parts of the State on portions of Highway 151, and in sand barren ecological communities in central Wisconsin on Highways 54 and 10, and northwestern Wisconsin on Highway 53. Secondary fragmentation would affect areas without land use controls, Highways 36, 10, 54, 151, 12, 57, 35 and 64 would provide prime areas for residential development because of the proximity of

these highways to urban areas, the decrease in commute time that they create, and the access that they provide to less expensive land available for development.

High speed rail between Milwaukee and the Twin Cities would use an existing corridor, but would require additional fencing and grade separations, and would have substantially increased use. The corridor would also pass through large rural areas in southern and western Wisconsin. The proposed plan would remain on current rail right-of-way. Although few additional lands would be taken along the 340 mile corridor, woodlands, wetlands and grasslands near the corridor would become more fragmented because of fencing and separation. Some of these impacts can be mitigated at the project level, but the corridor would still increase fragmentation and barrier effects for this portion of Wisconsin. Under some circumstances rail transportation corridors and low maintenance highways contain valuable reservoirs of Wisconsin's native prairie plants. This is because several corridors pre-date extensive settlement and contain within their rights-of-way thin ribbons of native prairie landscape. Major improvements to certain rail lines and highways could mean the loss of these plant communities if careful reconstruction or management does not occur.

Secondary fragmentation near urban areas could also occur due to gravel and hardrock mining for highway and rail roadbed building material. An estimated 5 million cubic yards of gravel would be required for highway portions of the Corridors 2020 program. It is difficult to translate quarrying operations into acres of land affected because of the highly variable conditions under which quarrying occurs. However, some scattered habitat throughout the state would be lost because of this activity.

For either direct, or secondary effects described above it is unlikely that any highway expansion would be the sole contributor to the disappearance of a species in Wisconsin. However, completion of the Corridors 2020 program, and the major leg of high speed rail between Milwaukee and the Twin Cities, may contribute towards the decline of some area-sensitive species; and together with other impacts of land use decisions, may contribute to an overall reduction in the state's biological diversity.⁴⁸

Analysis of base case (alternative one)

The previous section described the environmental impacts of the Draft Plan. Many of the elements included in the Draft Plan also occur in one or more of the other alternatives analyzed in the following sections. To avoid repetition, the environmental impacts of the Base Case (Alternative One) and the remaining alternatives are not described in the same detail as they are under the Draft Plan analysis unless the impact is unique to a particular alternative.

Under the Base Case, state and local highways remain the foundation of the State's transportation system, and investments continue at current levels for passenger/freight rail, transit, airports, harbors, bike/pedestrian and intermodal facilities.

Base case elements with major environmental impacts

Completion of planned corridors 2020 backbone and other authorized projects

The Corridors 2020 program would be implemented on the same timeline as it is under the Draft Plan, with backbone highways and other projects already approved by the legislature in place by 2005, consistent with the schedule adopted in 1988. Therefore environmental impacts would be the same as those discussed under the Draft Plan. Congestion would be likely to decrease. Land use changes may occur in areas along Corridors 2020 highways near urban areas, particularly in regions dependent on tourism, and areas where bypasses are constructed. Community impacts would be mixed depending on local land use planning and plan implementation decisions, and

there would be economic benefits associated with completing the Corridors 2020 program. Water quality would be likely to worsen in some areas of the State, but substantial mitigation would be possible; Wetland loss would occur, but would be mitigated. Habitat fragmentation would increase though no species are likely to be lost as a direct result of the Corridors 2020 program. Agricultural land would also be lost.

Milwaukee County freeway system

Under the Base Case, WisDOT would carry out only a minimal amount of improvements to the Milwaukee County freeway system in comparison to the major modernization which is proposed under the Draft Plan. This could cause congestion to increase, therefore elevating energy consumption and air pollution, and encouraging out-migration of downtown firms. In addition, structures which improve community aesthetics and interconnectivity would not be built; economic benefits associated with major modernization would not occur, and water quality would remain the same because improved stormwater controls would not be constructed.

High speed rail

High speed rail is not proposed under the Base Case. Travel would continue on existing modes so any energy consumption and emission reductions related to diversion from autos would not occur. Economic development and land use changes associated with improved accessibility would not occur, and potentially major increases in noise, habitat fragmentation and community separation would be avoided.

Environmental impacts of base case

Traffic congestion impacts

As indicated under the Draft Plan, highway congestion analysis is incomplete. It can be expected that congestion on Corridors 2020 highways would be similar to that under the Draft Plan. However, congestion on the Milwaukee County freeway system would worsen compared to the Draft Plan because major freeway modernization would not occur under the Base Case. Potential congestion and options for relieving it will be analyzed through development of a CMS described in the Draft Plan to be completed in 1996.

Energy consumption impacts

Under the Base Case, transportation models show that total intercity passenger energy consumption in 2020 would be 733.92 million gallons of gasoline and 1.04 million gallons of diesel fuel. Corridors 2020 program energy consumption impacts cannot be determined; but the impacts under the Base Case would be the same as those under the Draft Plan in which energy consumption will be reduced to the extent that travel speeds on Corridors 2020 highways increase or decrease to between 35-45 mph. For the Milwaukee County freeway system, it is likely that motor fuel consumption would increase under the Base Case compared to the Draft Plan. According to SEWRPC analysis, more fuel would be consumed under its "no-build" alternative because vehicle miles travelled would increase and less transit would be available.

Air quality impacts

Air quality impacts of the Corridors 2020 program element have not been calculated as part of the Translinks planning process, but would be the same under the Base Case as the Draft Plan. It is expected that operating conditions on the Milwaukee County freeway system would worsen under the Base Case, although how much they would worsen is uncertain. This would be likely to cause an increase in ozone-related emissions.

Land use impacts

The on-schedule completion of the Corridors 2020 program under the Base Case can be expected to have some indirect land use impacts in certain areas, as discussed under the Draft Plan. Because the Base Case does not include implementation of any land use policy recommendations, land use impacts may be greater than those expected under the Draft Plan.

Deterioration of operating conditions on the Milwaukee County freeway system would be expected to continue under the Base Case. The eventual result may be the continued, or accelerated migration of businesses and residents from downtown Milwaukee to suburban areas to avoid problems associated with traveling on the freeway system. As driving conditions on the freeway deteriorate, driving conditions on local roads would also become more congested as drivers move onto local roads to avoid the freeway.

Economic development impacts

WisDOT would maintain current levels of transportation funding, investing \$30.1 billion over the plan period, adjusted for inflation. Completion of the Corridors 2020 program with multi-lane backbone routes in place by 2005 would yield the greatest economic benefits under the Base Case. These benefits are identical to those identified in the discussion of the economic development impacts under the Draft Plan. No other elements of the Base Case are expected to yield major economic benefits.

Community impacts

Under the Base Case Alternative the only major impact on communities would be completion of the Corridors 2020 program as described under the Draft Plan. Other plan elements would not yield important new benefits or costs.

Sensitive land and water resources impacts

From a sensitive land and water resources perspective, the main difference under the Base Case is the absence of high speed rail, and a considerably lower level of funding for highway rehabilitation and local road improvements. Under the Base Case, most of the land and water resource impacts relate to completion of the already planned and authorized Corridors 2020 state-wide highway expansions.

Water quality

Base Case impacts of Corridors 2020 highway expansion on water quality would be the same as those described under the Draft Plan. About 1,800 to 3,000 acres of wetlands or 0.06% of total wetlands would be filled, though the Department would mitigate this loss with the restoration or creation of an equal or greater number of wetland acres. Water quality impacts would also occur on a temporary basis during construction which would contribute to erosion and stream bed disturbance. Water quality in the Milwaukee region would not be improved because storm water control structures would not be built. A lower level of funding for highway rehabilitation would result in fewer impacts to wetlands, about 85% of those expected under the Draft Plan. However, because most rehabilitation is done on existing road alignments, this difference is proportionately small compared to impacts occurring with Corridors 2020 expansions.

Conversion of agricultural land

Impacts of the Base Case on agricultural land are similar to those described under the Draft Plan. Completion of the Corridors 2020 program would result in conversion of

about 0.06% of Wisconsin's total agricultural land to transportation uses and include similar farm severance as the Draft Plan.

Shrinking biological diversity and fragmentation of natural habitat

Impacts of the Base Case on biological diversity and fragmentation would be slightly less than those described under the Draft Plan because the Base Case does not include a high speed rail option.

ANALYSIS OF ALTERNATIVES TWO, THREE AND FOUR

In this section the major elements of Alternatives Two, Three, and Four with potentially significant environmental impacts are contrasted with the Draft Plan and the Base Case. It is important to note that major portions of Alternative Two parallel the Base Case and that many portions of Alternatives Three and Four were included in the Draft Plan. Therefore, extensive review of each element would be redundant.

Under Alternative Two, funding levels would remain the same as under the Base Case. However, transportation programs would shift their focus from highways to make alternatives to driving more extensive, attractive, and convenient. Completion of the Corridors 2020 state highway network and future CMS work would be delayed by 10 to 15 years. Projects started, but not completed, would be a priority for completion with funds available, but would take longer than currently planned.

Environmental impacts would be similar to those under the Draft Plan because completion is highly likely and the implementation approach is unlikely to change. Highway projects not yet started would be delayed considerably, and some impacts would be less likely to occur because decisions would be revisited several times prior to possible completion, and construction and mitigation techniques may change over 10 to 15 years. CMS analysis would not consider highway capacity solutions to potential congestion problems on 1,000 miles of highway between the years 2005 and the end of the planning period, 2020. Therefore any additional impacts stemming from CMS recommendations in 1996 would be avoided or benefits foregone.

Impacts of delay of either Corridors 2020 or CMS projects are likely to be mixed since delay could avoid some land and water impacts; but, also may increase emissions and energy consumption if congestion is considerable. Expected economic development impacts from the Corridors 2020 program would be delayed or foregone. High speed rail would run between Milwaukee and Chicago, and conventional passenger rail would be expanded to Madison and Green Bay. Light rail would be constructed in Madison and Milwaukee.

Intercity passenger travel forecasts indicate that in 2020 fewer passenger miles of travel would occur under Alternative Two compared to the Draft Plan. As a result, lower levels of emissions and a reduction in energy consumption may be expected under Alternative Two. However, to the extent that increased congestion would affect average speeds, related energy and air quality impacts, either positive or negative, would be possible. Some economic growth state-wide would be lost as a result of delaying highway improvements, and community impacts such as greater community interconnectivity would not occur in the Milwaukee region. Wetlands loss, agricultural land taking, and habitat fragmentation would be avoided in the short term, and could be reduced in the long term if mitigation techniques change during the intervening period. Water quality impacts of the transportation system in the Milwaukee region would not change. Existing hazardous waste sites near to the freeway system would not be remediated.

Alternative Three would provide more investment in all modes, including increases for the highway repair and rehabilitation program, high speed rail between Chicago and Milwaukee, intercity bus, urban transit, and bicycle and pedestrian facilities. Alternative Four is similar to Alternative Three in many ways. The Milwaukee County freeway system would be redesigned and reconstructed to meet new design standards, including the modernization of interchanges, and the removal of left lane exits. Light rail systems would be built in Milwaukee and Madison, and high speed rail would be extended to Minneapolis/St Paul. The Corridors 2020 improvements from the 1988 plan would be completed in 2005 under Alternatives Three and Four.

Under Alternatives Three and Four intercity passenger travel energy consumption in 2020 would be slightly less than energy consumption under the Base Case. Air quality could improve compared to the Base Case, depending on highway travel conditions. Economic benefits, and community impacts would be slightly greater than those described under the Base Case, and would be similar to those described under the Draft Plan. Some habitat fragmentation could occur as a result of increased high speed rail service. Water quality impacts of transportation in the Milwaukee region would be reduced.

Corridors 2020 plan

Under Alternative Two, approximately 500 miles of two-lane highway to four-lane highway conversion would be delayed beyond 2005 and spread out to 2020. Any further highway expansion also eliminated by the 58% reduction in major highway investments under Alternative Two. The delay in completing these Corridors 2020 projects and scaling down highway investments could increase congestion. This congestion may result in additional auto emissions if significant delays occur. The delay in completing the existing Corridors 2020 program is unlikely to affect energy consumption significantly unless average speeds drop below 35 mph due to increased congestion. The indirect land use impacts of the Corridors 2020 program would be delayed and if, during the period of delay, improved local land use controls are put in place, it is possible that the indirect land use impacts would not be as major as might occur under the Draft Plan. The economic benefits of implementing Corridors 2020 projects, as described in the Draft Plan would be delayed 10 to 15 years and some connectors would not be built. Instead, highway travel costs are likely to increase if congestion grows and travel speeds decrease. This could affect economic growth in the State. The effects on communities described under the Draft Plan would be delayed, or in some cases may not occur.

Agricultural lands located near delayed highway sites which would be lost under the Draft Plan, the Base Case, and Alternatives Three and Four would remain agriculturally productive until construction occurs. The delay of the Corridors 2020 program under Alternative Two would avoid disruption of habitat in the near term, but it is difficult to determine what the result of this delay would be. If improved techniques for avoiding fragmentation or for wetland mitigation become available during this period, then the long term impacts on wetlands or biodiversity may be reduced. If Corridor 2020 projects are constructed in a similar fashion to the Base Case, there would be little difference between the Alternative Two and the Draft Plan in the long term.

The environmental impacts of completing the Corridors 2020 program under Alternatives Three and Four would be the same as those described under the Draft Plan. About 1,800 to 3,000 acres of wetlands would be filled, though the Department would mitigate this loss with the restoration or creation of an equal or greater number of wetland acres. Water quality impacts would also occur on a temporary basis during

construction which would contribute to erosion and stream bed disturbance. The on-schedule completion of the previously planned Corridors 2020 improvements would have some indirect land use impacts in certain areas. This would also yield economic benefits. Determining the impact of completing the Corridors 2020 program on schedule in terms of air quality and energy consumption would require more complete congestion information than is available, but would be the same as under the Draft Plan.

An important distinction under Alternative 2 is the CMS analysis. CMS would occur by 1996. This analysis would review changes that may occur for up to 1,000 miles of Wisconsin highways beyond those that are part of Corridors 2020 and begin funding these changes after 2005. Alternative 2 would not reserve funds for possible highway expansion improvements to these 1,000 miles beyond 2005. Land and water impacts associated with these impacts would not occur. Congestion may increase in some areas to the point that air quality may slightly worsen along with slight increases in energy use.

Milwaukee County freeway system

Under Alternatives Two and Three, the environmental impacts of the Milwaukee County freeway system would be the same as the Base Case. Water quality in the Milwaukee region would not be improved because storm water control structures would not be built. It is expected that operating conditions on the Milwaukee County freeway system would worsen, although how much is uncertain, resulting in an increase in ozone-related emissions, and an increase in energy consumption. Community benefits such as improved aesthetics, interconnectivity, and economic development benefits associated with highway improvements would not occur. Worsening operating conditions may also contribute to the migration of businesses and residents from downtown Milwaukee to suburban areas to avoid problems associated with traveling on the freeway system.

The impacts of Alternative Four would be the same as those described in the Draft Plan. As average speeds increase up to 55 mph air quality may improve slightly, but energy efficiency will decline if speeds are outside the 35 to 45 mph range. An improved system may help reduce out-migration of businesses from downtown Milwaukee. Construction would allow installation of structures to improve water quality, community connectivity, and aesthetics.

High speed rail

Alternatives Two and Three include high speed rail only in the Milwaukee-Chicago corridor. Thus, the land and water resource impacts associated with the implementation of high speed rail between Milwaukee and the Twin Cities (under the Draft Plan) would not occur. The air quality and energy impacts of not implementing high speed rail in this corridor are small. The economic benefits associated with having the high speed link between Milwaukee and the Twin Cities would not be realized. Alternative Four includes high speed rail to the Twin Cities, and would implement it in the Chicago/Milwaukee Corridor earlier. This is the same as the Draft Plan.

light rail transit

Light rail transit, included for Milwaukee and Madison under Alternative Two, would reduce congestion, air pollution, and energy use commensurate with the modal shift away from the highway mode. Although the extent of this shift depends on many factors, including pricing measures, land use, and other transportation investments, it is unlikely to be very great. Preliminary estimates generated for a study of introducing

light rail in the Milwaukee East-West corridor indicate that reductions in emissions would be less than half a percent.

Some locations near rail lines could experience increased noise, which could be mitigated. Depending on location, light rail transit could create barriers to social interaction in neighborhoods. A more complete analysis of the potential effects of light rail transit is being developed in an Environmental Impact Statement on transportation options in the Milwaukee East-West Corridor.

Qualitative comparison of environmental costs and benefits

IMPACT CATEGORY	DRAFT PLAN	BASE CASE: ALTERNATIVE ONE	ALTERNATIVES TWO, THREE, AND FOUR
TRAFFIC CONGESTION	Some diversion from auto to other modes in some corridors, but unlikely to affect congestion. (To be evaluated under the congestion management system) High speed rail has the greatest diversion potential.	Would increase in select corridors state-wide.	High speed rail has the greatest diversion potential. Alternatives Two and Three do not include high speed rail between Chicago, Milwaukee and the Twin Cities.
ENERGY	Similar to Base Case.	Would increase due to growth in travel during plan period. No meaningful difference in energy consumption among Alternatives for intercity passenger travel.	Similar to Base Case, but greater congestion under Alternative 2 could increase energy consumption.
AIR QUALITY	Similar to Base Case.	Would improve as a result of improved emission controls.	Similar to Base Case.
LAND USE	Similar to Base Case; proposed coordination of land use and transportation plans may mitigate somewhat.	In high growth areas with limited local controls, highway expansion may contribute to further decentralization of development.	Under Alternative Two, highway projects delayed may postpone effects that would occur earlier in the other alternatives.
ECONOMIC DEVELOPMENT	Similar to Base Case but effects are likely to be larger.	Potential for some travel cost and travel time savings. Expanded employment opportunities for transit dependent groups.	Potential for increased travel times in Milwaukee County in Alternative Two.
COMMUNITY	In addition to effects noted in Base Case, the reconstruction or modernization of the Milwaukee County freeway system could improve inter-connectivity of neighborhoods. Investments in rail would increase noise levels along rail lines, and lead to road closures on low traffic streets, elevated grades, and fencing for high speed rail.	More bypasses would reduce noise levels and affect property values, positively or negatively depending on location of highways.	Alternative Two would delay effects of highways described in Base Case. Alternatives 2 and 3 would have fewer impacts related to rail than the Draft Plan.
SENSITIVE LAND AND WATER	Similar to Base Case except greater fragmentation of natural habitat resulting from high speed rail.	<ul style="list-style-type: none"> Greater fragmentation of natural habitat resulting from highway expansion through 2005. Conversion of agricultural land to transportation uses. (0.06% reduction in total state-wide.) Wetland filling that would be mitigated. (0.06% reduction in total state-wide.) Erosion and stream bed disturbance during construction of bridges for Corridors 2020. 	Alternative Two would delay loss of agricultural lands, fragmentation of habitat and water quality impacts.
OTHER COSTS	\$38.9 billion	<ul style="list-style-type: none"> \$30.1 billion Safety needs unaddressed Maintenance performed in less cost effective manner than possible. Possible lower service levels for intercity bus and transit. 	<ul style="list-style-type: none"> * \$30.1 to \$40.3 billion 9 Alternative Two redistributes modal investments without increasing total costs over Base Case. * Deterioration of pavement quality in Alternative Two.
OTHER BENEFITS	Improved mobility for transit dependent, elderly, and disabled.		Improved mobility for transit dependent, elderly, and disabled.

ENDNOTES

- ¹ Based on a memo from George Gundersen regarding the relative share of travel movements, September 1993.
- ² Readers may note a difference between reported dollar figure here and in the June 1994 Translinks document "Four Alternatives for our Transportation Future"; the earlier document was in error.
- ³ Transportation Energy Data Book: Edition 13. Oakridge National Laboratory. 1993. pp. 3-60, 3-61.
- ⁴ See Appendix 1 for intercity energy consumption information,
- ⁵ Wisconsin Energy Statistics - 1993. Wisconsin Department of Administration, November, 1993. pp. 9,22.
- ⁶ See Appendix 1.
- ⁷ Large increase in diesel fuel consumption occurs as a result of implementation of high speed rail service.
- * Southeastern Wisconsin Regional Planning Commission Newsletter. Vol. 34, No. 3. May-June 1994. p. 32.
- ⁸ "ibid.
- ⁹ Preliminary analysis of interchange modernization performed by Barton-Aschman Associates for WisDOT, 1993.
- ¹⁰ Intermodal Surface Transportation Efficiency Act. 1991. Discussion of Metropolitan transportation planning process, 23 CFR 450.316 (a) (13).
- ¹¹ Energy intensities of various transportation modes from Transportation Energy Data Book: Edition 13. pp. 2-24,2-25.
- ¹² Operation Ozone: Cleaning the Air in Wisconsin, Vol. II, No. 4. Wisconsin Departments of Transportation and Natural Resources. October 1993. p. 2.
- ¹³ Southeastern Wisconsin Regional Planning Commission Newsletter, Vol. 34, No.3. May-June 1994. p. 27.
- ¹⁴ See Appendix 2.
- ¹⁵ ibid.
- ¹⁶ For further discussion of future VOC emissions in the non-attainment areas, see Wisconsin State Implementation Plan: 15% Volatile Organic Compound Reduction Plan Submittal, November 15, 1993, and Trends in Motor Vehicle Emissions, Wisconsin Department of Transportation, May 1994.
- ¹⁷ Conversation with Wisconsin Department of Transportation staff, August 1994.
- ¹⁸ Chicago-Milwaukee Rail Corridor Study: Environmental Evaluation. Prepared by Envirodyne Engineers, Inc. for Wisconsin and Illinois Departments of Transportation. March 1994. p. 6-2.
- * Wisconsin Greenhouse Gas Emissions Estimates for 1990. Wisconsin Department of Natural Resources and the Public Service Commission of Wisconsin, December 1993.
- * Transportation and the Environment: Technical Support Document. Wisconsin Department of Transportation. March 1994. pp.2-5.
- ** Impacts of Highway Facility Improvements on Travel and Regional Development. Wisconsin Department of Transportation. January 1994.
- 23 "Land Use Impacts of Transportation Investments: Highway and Transit." The Geograph of Urban Transportation. 1986; and "Decentralization of Jobs and Emerging Suburban Commuting." Transportation Research Record 164. 1992. pp. 71-80.
- 24 Autos, Transit, and Cities. 1981. p. 105; and "The Causes of Metropolitan Suburbanization." Journal of Economic Perspectives, Vol. 7, No. 3. 1993. pp. 135-147.
- 25 "Measuring Economic Development Benefits for Highway Decision Making in Wisconsin," Transportation Research Record 1262. 1990. p. 66.
- * "Framework for Analyzing the Impact of Fixed-Guideway Transit Projects on Land Use and Urban Development." Transportation Research Record 1274. 1990. p. 15 1,
- * Corridor Preservation and Access Management. Wisconsin Department of Transportation, January 1994; and "Tools for Community-Managed Impact Assessment." AIP Journal. April 1977. pp. 125-135.
- 28 Autos, Transit, and Cities. 198 1. p, 105; and "Transportation Policy as a Tool for Shaping Metropolitan Development." Research in Transportation Economics, Vol. 2. pp. 55-8 1.

- 29 “Economic Impact of Highway Bypasses.” Transportation Research Record 1395. 1993. pp. 144-152.
- 30 20% above average for population, and 50% above average for employment
- 31 “Measuring Economic Development Benefits for Highway Decision Making in Wisconsin.” Transportation Research Record 1262. 1990. p. 66.
- 32 “Land Use Impacts of Transportation Investments: Highway and Transit.” The Geography of Urban Transportation. 1986.
- 33 “Land Use Impacts of the Houston Transitway System.” Transportation Research Record 1237. 1989. pp. 29-38.
- 34 Translinks 21 publication, Transportation and Economic Development provides a general, and more detailed discussion of the relationship between transportation and economic development.
- 35 See Chapter 11 of the Highway 29/45/10 Corridor Study. Cambridge Systematics. Prepared for the Wisconsin Department of Transportation, 1989.
- 36 From a survey of airports in Wisconsin conducted in 1993.
- 37 For a more complete discussion, see WisDOT publication: Transportation and the Environment, February 1994, pp. 13-14.
- 38 Calculations are based on the assumed number of wetland acres filled per mile of construction from past year’s records: 1990-1994. Acres would vary with different regions of Wisconsin. Probable bypass construction was calculated separately from the rest of construction. Percentage comparison is based on 5.3 million total acres of wetlands in Wisconsin today (Wisconsin Department of Natural Resources, 1994).
- 39 For a more complete discussion, see WisDOT publication Transportation and the Environment, February 1994, pp. 13-14.
- 40 Less than - of train derailments are caused by track failure.
- 41 The number of acres is based on assumed acres per mile derived from past construction projects. This varies depending on the region of Wisconsin where construction occurs. The range is fairly wide because future decisions will have some discretion on exactly where highways will be built. Bypass construction was calculated separately from other construction. Acreage also includes lands that are not currently in crop production, pastures, farm woodlots and lands with buildings. In addition, there is some double-counting with the wetland acreage because some farmlands are also considered wetlands. The percentage of farmland is compared to total acreage in agricultural use in Wisconsin today; 17.1 million acres (Department of Agriculture, Trade, and Consumer Protection).
- 42 Based on discussions with the Office of Environmental Analysis, Wisconsin Department of Transportation, September, 1994.
- 43 For more information on this subject, see WisDOT’s publication Transportation and the Environment, February 1994, pp. 12-13.
- 44 “When is a Bird’s Habitat Not Habitat?” Passenger Pigeon. 50:37-41.
- 45 “Demography and Ecology of Ornate Box Turtle (*Terrapene ornata*) on Populations in South Central Wisconsin.” Copeia. 1990. pp. 387-399.
- 46 From a discussion with Adrian Wydeven, Wisconsin Department of Natural Resources Endangered Species Specialist, Park Falls, Wisconsin, August 1994.
- 47 Impacts of Highway 53 Development on Timber Wolves: Preliminary Observations for the Period of May 1992 - July 1994. Wisconsin Department of Natural Resources, 1994.
- 48 Discussions with the Endangered Resources Staff of the Wisconsin Department of Natural Resources, September 1994.
- 49 Current fleet. Estimates adjusted for future years to account for fuel efficiency improvements and changes in fleet mix between autos and trucks.

APPENDIX 1

1. Intercity energy consumption

The following information was used to develop total intercity energy consumption for passenger and freight modes in trillion Btu.

PASSENGER ENERGY INTENSITIES USED

	Btu/Vehicle-Mile	Passenger Load	Btu/Pass-Mile
Auto/LDT	5767 (auto) 8781 (LDT)	1.41	477049
Air	-n.a.-	-n.a.-	-n.a.-
Conventional Rail	50231	20.1	2499
Intercity Bus	22310	15.0	1487
Feeder Bus/Rail	22310	15.0	1487
High Speed Rail	77220	33.0	2340

TOTAL PASSENGER RULES BY MODE (millions)

	Base Year 1995	Alternative One 2020	Draft Plan 2020
Auto/LDT	17748.4	21410.5	20968.6
Air	-n.a.-	-n.a.-	-n.a.-
Conventional Rail	29.3	36.3	32.7
Intercity Bus	29.6	35.7	34.5
Feeder Bus/Rail	0	0	3.6
High Speed Rail	0	0	613.6
Total	17807.3	21482.5	21652.9

FREIGHT ENERGY INTENSITIES USED

	Btu/Vehicle-Mile	Btu/Ton-Mile
Truck	17156	3179
Class I Rail	15581	384

TOTAL FREIGHT INTERCITY TON-MILES (millions)

	Base Year 1992	Current Trends 2020	Anticipated Intermodal Diversion 2020
Truck	22242	31794	31308
Class I Rail	15875	26208	26694
Total	38117	58002	58002

Assumptions:

Heat content of gasoline: 125,000 Btu/Gallon

Heat content of diesel/distillate fuel: 138,690 Btu/Gallon

Automobiles: 1990 data; passenger cars and personal trucks; 1.41 passengers/vehicle; Wisconsin fuel consumption assumed to be 100% gasoline. Fuel efficiency as follows, based on national data:

Year	Auto	LDT
1990	28.2 mpg	20.9 mpg
2020	31.4 mpg	24.2 mpg

Note: the passenger vehicle fleet includes a significant number of personal trucks, including mini-vans. A sensitivity analysis performed using fuel efficiency predictions for autos and trucks, and varying the mix of autos and trucks in the fleet (up to 50%

auto, 50% truck) showed that the relative performance of the alternatives did not change. However, in 2020 all alternatives would be more efficient than the 1991 base year estimate.

Bus: 1991 data; intercity buses estimated at 18% of total commercial bus registrations; 15.0 passengers/vehicle; Wisconsin fuel consumption assumed to be 100% diesel.

Conventional rail: 1991 data; number of vehicles is the sum of passenger train cars and locomotive units; "vehicle-miles" are "passenger train car-miles"; "passenger miles" are "revenue passenger miles"; load factor based on passenger train car-miles.

High speed rail: Data from Chicago-Milwaukee Rail Corridor Study; energy consumption rated based on F70-PH diesel locomotive and 3 passenger cars operating at a speed of 117 mph, consuming 234,000 Btu/Train-mile; average load is passengers per coach; Wisconsin fuel use assumed to be 100% diesel and distillate fuel oil (same heat contents).

Truck, freight: 1991 data; Energy -16% of total fuel consumption by %-axle, 4-tire trucks, 53.2% of total "other" truck used in intercity freight movement; VMT-13.7% of total VMT of 2-axle, 4-tire trucks, 50.2% "other" intercity freight movement; Wisconsin fuel energy use calculated, based on national statistics, to be 39.13% gasoline, 60.87% diesel (use of liquid propane gas is considered negligible).

Class I railroad, Freight: 1991 data; "ton-miles" are "revenue ton-miles."

2. Ranslinks intercity energy consumption as percent of total energy consumption

The following assumptions were made to estimate Translinks intercity energy consumption, excluding air and water modes, as a percent of total end-use energy consumed in Wisconsin.

- 1) Approximately 33.3% of total end-use energy consumed in Wisconsin is used for transportation.
- 2) Based on 1992 data, 98.9% of transportation energy was consumed by non-air and water sources.
- 3) Total energy use will increase, through the year 2020, at approximately the same rate it has from 1984-1992.

Note: This approximation is very rough, because simplifying assumptions have been made to compare the state historical energy figures and data from the Translinks planning process.

Wisconsin end-use energy consumption Trillion Btu
(Extrapolated data appear in italics)

			Straight line extrapolation from 1984-92	Straight line extrapolation from 1990-92	Average
1984	1990	1992	1995	1995	1995
955.7	1018	1057.7	1095.95	1117.25	1107

Source: Wisconsin Energy Statistics 1993, page 9.

Projected 1995 Wisconsin Energy Use for all modes of transportation (excluding air and water) is 364.6 trillion Btu, as shown below.

1995 Total Btu	% Transportation	368.;	% non- Air/Water	Transportation Energy (non-air/water in 1995)
1107	0.333		0.989	364.6

Translinks 21 Intercity Energy Total, excluding air and water modes, for 1995 is approximately 161.58 trillion Btu, as shown below:

Passenger	84.77
Freight (1992 data)	76.81
Total	161.58 trillion Btu

Result

In 1995 44.3% of total transportation end-use energy use in Wisconsin will be due to intercity travel, excluding air and water.

In 1995, 14.6% of total end-use energy use in Wisconsin will be due to intercity travel, excluding air and water.

Appendix 1 References:

1. Bureau of Transportation Statistics, US Department of Transportation. Transportation Statistics Annual Report 1994. January 1994.
2. Energy Information Administration, Office of Integrated Analysis and Forecasting, US Department of Energy. Annual Energy Outlook, 1994 with Projections to 2010. January 1994.
3. Envirodyne Engineers, Inc., for Illinois Department of Transportation and Wisconsin Department of Transportation. Chicago-Milwaukee Rail Corridor Study: Environmental Evaluation. March 1994.
4. Federal Highway Administration, US Department of Transportation, Highway Statistics 1992. November 1993.
5. Oak Ridge National Laboratory. Transportation Energy Data Book: Edition 14. May 1994.
6. Wisconsin Energy Bureau, Wisconsin Department of Administration, Wisconsin Energy Statistics-1993. November 1993.

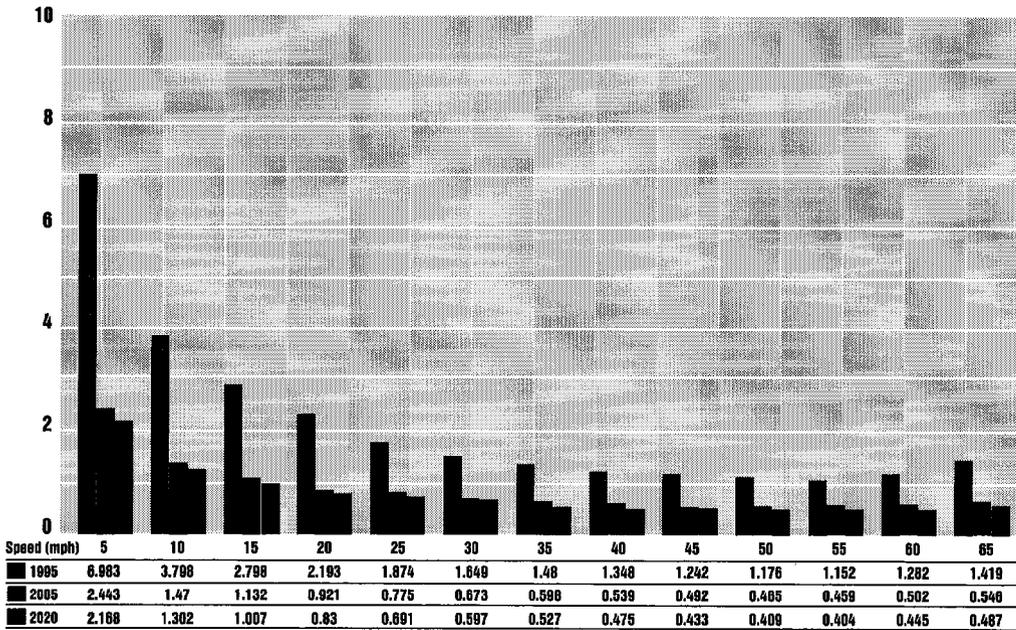
Appendix 1 was developed in conjunction with HNTB Corp.

APPENDIX 2

The following emissions estimates use the federal mobile source emissions model, MOBILESA. They illustrate trends in vehicle emissions over the full time span addressed in this report (1995-2020). The numbers shown are composite fleetwide emission rates for all on-road vehicles, for the two primary vehicular contributors to ozone formation: VOC (volatile organic compounds) and NOx (oxides of nitrogen). Source: Nicholl Environmental Associates.

Fleet Emission Rates - VOC Six Severe Ozone Nonattainment Counties - SE Wisconsin

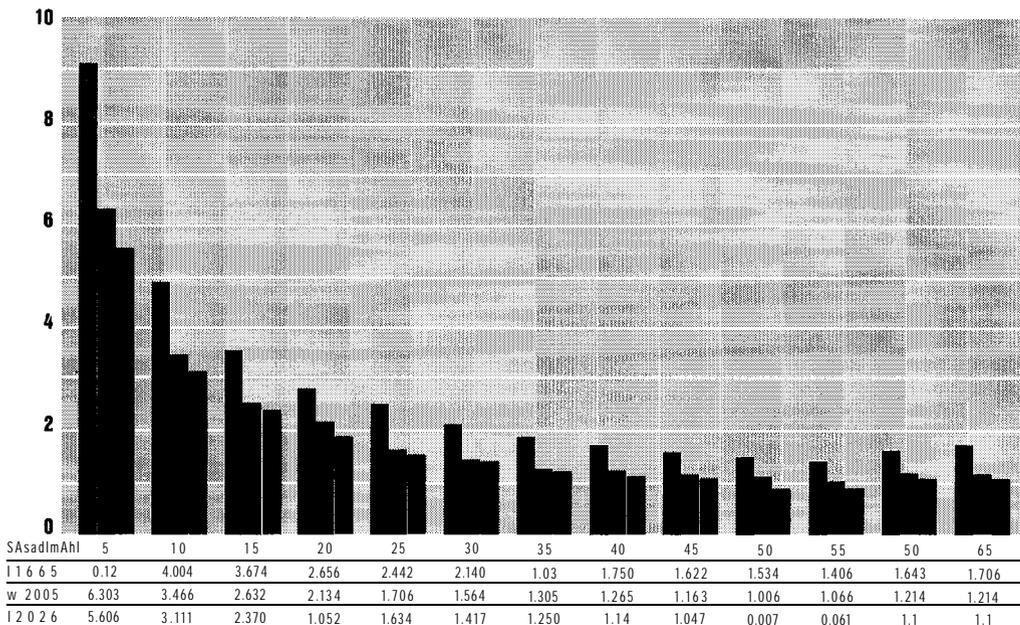
EMF (g/vehicle - mile)



Obtainad horn EPA's MoblIS-urc- Emission Factor Modal MOBILE 51
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Fleet Emission Rates - VOC Ozone Attainment Counties - Rural Wisconsin

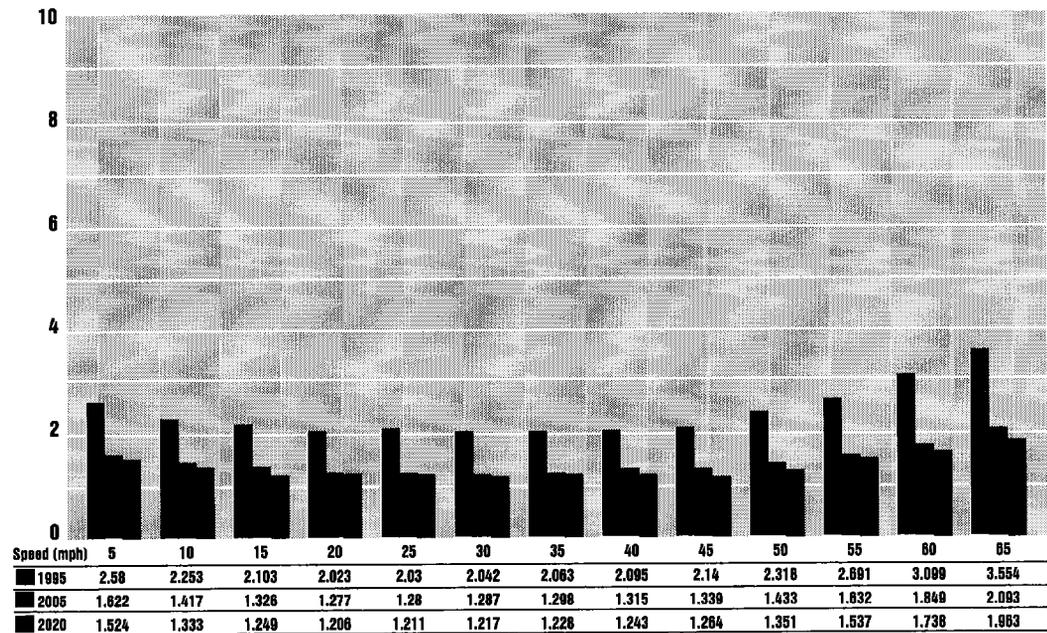
EMF (g/vehicle - mile)



Obtainad ham EPA's Mob66 Souff66 Emlsion Fso66trM066lE 511
Summart66mAraturrandh66sr:No 66M Pmgm -rnl-rmulm--d 61

Fleet Emission Rates - NOx Six Severe Ozone Nonattainment Counties - SE Wisconsin

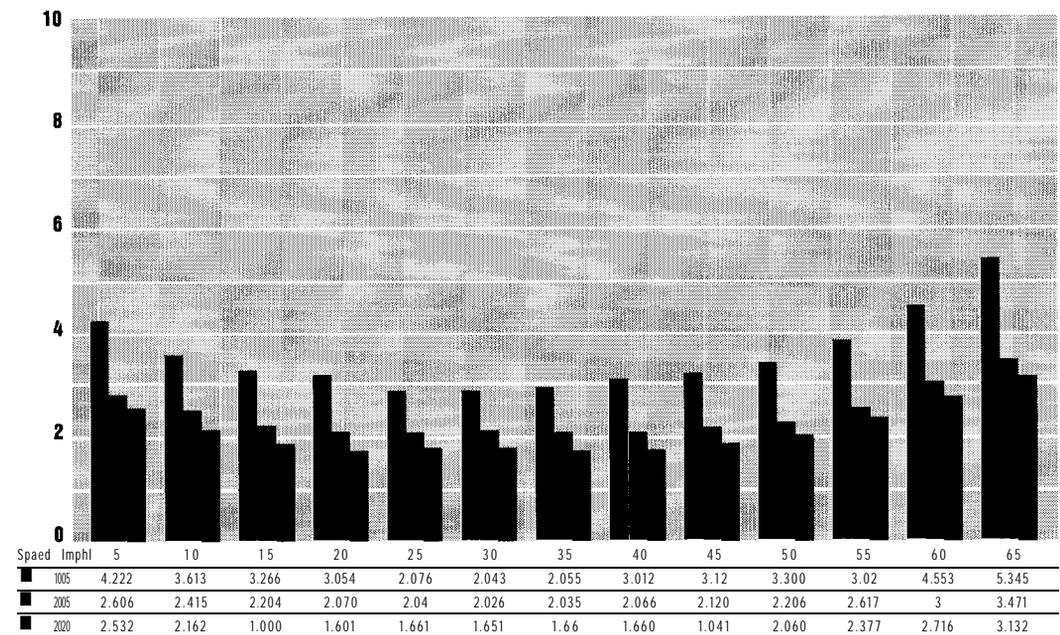
EMF [6/vvehclca - ml16)



Obtained from EPA's Mob66 Source Emission Factor Model MOBILE 5A
Summarized and fuel% Enhanced III and reformulated 61

Fleet Emission Rates - NOx Ozone Attainment Counties - Rural Wisconsin

EMF [6/vvehicle - ml16)



Obtained from EPA's Mobile Source Emission Factor Model MOBILE 5A
Summarized and fuel% Reformulated 61

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